



Treaty Series No. 59 (2025)

Amendments

to the International Maritime Dangerous Goods (IMDG) Code of the International
Convention for the Safety of Life at Sea

For Adoption dates – see page 3

[For entry into force dates - see page 3]

*Presented to Parliament
by the Secretary of State for Foreign, Commonwealth and Development Affairs
by Command of His Majesty
October 2025*



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**AMENDMENTS TO THE INTERNATIONAL MARITIME DANGEROUS
GOODS (IMDG) CODE OF THE INTERNATIONAL CONVENTION FOR
THE SAFETY OF LIFE AT SEA**

The Resolutions were adopted on:

Resolution MSC.501(105), adopted on 28 April 2022

Resolution MSC.477(102), adopted on 11 November 2020

Resolution MSC.442(99), adopted on 24 May 2018

Resolution MSC.406(96), adopted on 13 May 2016

Resolution MSC.372(93), adopted on 22 May 2014

Resolution MSC.328(90), adopted on 26 May 2012

Resolution MSC.262(84), adopted on 16 May 2008

Resolution MSC.205(81), adopted on 18 May 2006

Resolution MSC.157(78), adopted on 20 May 2004

Resolution MSC.122(75), adopted on 24 May 2002

The Amendments entered into force:

Resolution MSC.501(105) – 1 January 2024

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Resolution MSC.406(96) – 1 January 2018

Resolution MSC.372(93) – 1 January 2016

Resolution MSC.328(90) – 1 January 2014

Resolution MSC.262(84) – 1 January 2010

Resolution MSC.205(81) – 1 January 2008

Resolution MSC.157(78) – 1 January 2006

Resolution MSC.122(75) – 1 January 2004

ANNEX 7

**RESOLUTION MSC.442(99)
(adopted on 24 May 2018)**

**AMENDMENTS TO THE INTERNATIONAL
MARITIME DANGEROUS GOODS (IMDG) CODE**

THE MARITIME SAFETY COMMITTEE,

RECALLING Article 28(b) of the Convention on the International Maritime Organization concerning the functions of the Committee,

NOTING resolution MSC.122(75), by which it adopted the International Maritime Dangerous Goods Code (hereinafter referred to as "the IMDG Code"), which has become mandatory under chapter VII of the International Convention for the Safety of Life at Sea (SOLAS), 1974, as amended (hereinafter referred to as "the Convention"),

NOTING ALSO article VIII(b) and regulation VII/1.1 of the Convention concerning amendment procedure for amending the IMDG Code,

HAVING CONSIDERED, at its ninety-ninth session, amendments to the IMDG Code, proposed and circulated in accordance with article VIII(b)(i) of the Convention,

1 ADOPTS, in accordance with article VIII(b)(iv) of the Convention, amendments to the IMDG Code, the text of which is set out in the annexes to the present resolution;

2 DETERMINES, in accordance with article VIII(b)(vi)(2)(bb) of the Convention, that said amendments shall be deemed to have been accepted on 1 July 2019, unless prior to that date, more than one third of the Contracting Governments to the Convention or Contracting Governments, the combined merchant fleets of which constitute not less than 50% of the gross tonnage of the world's merchant fleet, have notified their objections to the amendments;

3 INVITES Contracting Governments to the Convention to note that, in accordance with article VIII(b)(vii)(2) of the Convention, the amendments shall enter into force on 1 January 2020 upon their acceptance in accordance with paragraph 2 above;

4 AGREES that Contracting Governments to the Convention may apply the aforementioned amendments in whole or in part on a voluntary basis from 1 January 2019;

5 REQUESTS the Secretary-General, for the purposes of article VIII(b)(v) of the Convention, to transmit certified copies of the present resolution and the text of the amendments contained in the annex to all Contracting Governments to the Convention;

6 REQUESTS ALSO the Secretary-General to transmit copies of this resolution and its annex to Members of the Organization which are not Contracting Governments to the Convention.

ANNEX

AMENDMENTS TO THE INTERNATIONAL MARITIME DANGEROUS GOODS (IMDG) CODE (AMENDMENT 39-18)

Table of Contents

Insert a new line for "2.0.6 Classification of articles as articles containing dangerous goods N.O.S."

Amend the contents for chapter 2.8 to read as follows:

- "2.8.1 Definition, general provisions and properties
- 2.8.2 General classification provisions
- 2.8.3 Packing group assignment for substances and mixtures
- 2.8.4 Alternative packing group assignment methods for mixtures: stepwise approach
- 2.8.5 Substances not accepted for transport"

Amend the subtitle of 4.2.6 to read "Additional provisions for the use of road tank vehicles and road gas elements vehicles".

Amend the title of chapter 5.3 to read "Placarding and marking of cargo transport units and bulk containers".

Amend the subtitle of chapter 5.3.2 to read "Marking".

In the title of chapter 6.1, delete "(other than for class 6.2 substances)".

Amend the title of chapter 6.8 to read "Provisions for road tank vehicles and road gas elements vehicles"

PART 1 GENERAL PROVISIONS, DEFINITIONS AND TRAINING

Chapter 1.1 General provisions

1.1.2 Conventions

1.1.2.2 International Convention for the Prevention of Pollution from Ships (MARPOL)

Annex III

Regulations for the prevention of pollution by harmful substances carried by sea in packaged form

Under the existing heading, a new chapter title "**Chapter 1 – General**" is added before the existing Regulation 1.

A new Regulation 1 is added with the corresponding footnotes as follows:

"Regulation 1

Definitions

For the purposes of this Annex:

1 *Harmful substances* are those substances which are identified as marine pollutants in the International Maritime Dangerous Goods Code (IMDG Code)* or which meet the criteria in the appendix of this Annex.

2 *Packaged form* is defined as the forms of containment specified for harmful substances in the IMDG Code.

3 *Audit* means a systematic, independent and documented process for obtaining audit evidence and evaluating it objectively to determine the extent to which audit criteria are fulfilled.

4 *Audit Scheme* means the IMO Member State Audit Scheme established by the Organization and taking into account the guidelines developed by the Organization.†

5 *Code for Implementation* means the IMO Instruments Implementation Code (III Code) adopted by the Organization by resolution A.1070(28).

6 *Audit Standard* means the Code for Implementation.

* Refer to the IMDG Code (resolution MSC.122(75), as amended.)

† Refer to the Framework and Procedures for the IMO Member State Audit Scheme (resolution A.1067 (28))."

The subsequent regulations are renumbered in this subsection accordingly.

In the renumbered Regulation 2, "Application", existing paragraph 1 with sub-paragraphs 1.1 and 1.2 are deleted. The existing paragraphs 2, 3, 4 and 5 are renumbered accordingly.

The existing Regulations 2 to 8 are renumbered as Regulations 3 to 9.

Before the appendix to Annex III (Criteria for the identification of harmful substances in packaged form) a new chapter 2 is added as follows with the corresponding footnote:

"Chapter 2 – Verification of compliance with the provisions of this Annex

Regulation 10

Application

Parties shall use the provisions of the Code for Implementation in the execution of their obligations and responsibilities contained in this Annex.

Regulation 11

Verification of compliance

1 Every Party shall be subject to periodic audits by the Organization in accordance with the audit standard to verify compliance with and implementation of this Annex.

2 The Secretary-General of the Organization shall have responsibility for administering the Audit Scheme, based on the guidelines developed by the Organization.

3 Every Party shall have responsibility for facilitating the conduct of the audit and implementation of a programme of actions to address the findings, based on the guidelines developed by the Organization.*

4 Audit of all Parties shall be:

.1 based on an overall schedule developed by the Secretary-General of the Organization, taking into account the guidelines developed by the Organization; and

.2 conducted at periodic intervals, taking into account the guidelines developed by the Organization.

* Refer to the Framework and Procedures for the IMO Member State Audit Scheme (resolution A.1067 (28)). "

Appendix to Annex III

Criteria for the identification of harmful substances in packaged form

The chapeau of the appendix is replaced as follows with the corresponding footnotes:

"For the purpose of this Annex, substances, other than radioactive materials,* identified by any one of the following criteria are harmful substances:†

* Refer to class 7, as defined in chapter 2.7 of the IMDG Code.

† The criteria are based on those developed by the United Nations Globally Harmonized System of Classification and Labelling of Chemicals (GHS), as amended. For definitions of acronyms or terms used in this appendix, refer to the relevant paragraphs of the IMDG Code."

Chapter 1.2

Definitions, units of measurement and abbreviations

1.2.1 Definitions

Amend the following definitions as indicated below:

Animal material: replace "or animal foodstuffs" with "foodstuffs or feedstuffs derived from animals".

GHS: replace "sixth" with "seventh" and replace "ST/SG/AC.10/30/Rev.6" with "ST/SG/AC.10/30/Rev.7".

Liquids: in the footnote, replace "ECE/TRANS/225 (Sales No. E.14.VIII.1)" with "ECE/TRANS/257 (Sales No. E.16.VIII.1)".

Manual of Tests and Criteria: after "ST/SG/AC.10/11/Rev.6", insert "and Amend.1".

Add the following new definition:

"*IMO type 9 tank* means a road gas elements vehicle for the transport of compressed gases of class 2 with elements linked to each other by a manifold, permanently attached to a chassis, which is fitted with items of service equipment and structural equipment necessary for the transport of gases. Elements are cylinders, tubes and bundles of cylinders, intended for the transport of gases as defined in 2.2.1.1."

1.2.3 List of abbreviations

In the definition of EmS, add the word "Revised" before the word "Emergency".

Chapter 1.3 Training

1.3.1 Training of shore-side personnel

1.3.1.5 Recommended training needs for shore-side personnel involved in the transport of dangerous goods under the IMDG Code

In the table, in function 3 "Mark, label or placard dangerous goods", in the column for "Specific training requirements", in the first indent, replace "risk" with "hazard".

1.3.1.6 Indicative table describing sections of the IMDG Code or other relevant instruments that may be appropriate to be considered in any training for the transport of dangerous goods

In the table, replace column "Guidelines for packing of cargo transport units" with "CTU Code"

1.3.1.7 Related Codes and publications which may be appropriate for function-specific training

1.3.1.7.2 Add the word "Revised" before the word "Emergency" and delete ", as amended" at the end.

Chapter 1.4 Security provisions

1.4.3 Provisions for high consequence dangerous goods

1.4.3.1.5 Replace "subsidiary risks" with "subsidiary hazards".

1.4.3.2 Specific security provisions for high consequence dangerous goods

1.4.3.2.1 At the end, insert the following note:

Note: In addition to the security provisions of this Code, competent authorities may implement further security provisions for reasons other than safety of dangerous goods during transport. In order to not impede international and multimodal transport by different explosives security marks, it is recommended that such marks be

formatted consistent with an internationally harmonized standard (e.g. European Union Commission Directive 2008/43/EC)."

Chapter 1.5 General provisions concerning radioactive material

1.5.5 Radioactive material possessing other dangerous properties

1.5.5.1 Replace "subsidiary risk" with "subsidiary hazard".

PART 2 CLASSIFICATION

Chapter 2.0 Introduction

2.0.0 Responsibilities

2.0.0.2 In the second indent, replace "subsidiary risk(s)" with "subsidiary hazard(s)".

2.0.1 Classes, divisions, packing groups

2.0.1.5 At the end of the last sentence, replace "subsidiary risk(s)" with "subsidiary hazard(s)".

2.0.1.6 At the end of the sentence, replace "subsidiary risk(s)" with "subsidiary hazard(s)".

2.0.2 UN numbers and proper shipping names

2.0.2.2 In the second paragraph, replace "subsidiary risk(s)" with "subsidiary hazard(s)".

2.0.2.5.3 Replace "subsidiary risk(s)" with "subsidiary hazard(s)".

2.0.2.10 Replace "subsidiary risk(s)" with "subsidiary hazard(s)".

2.0.3 Classification of substances, mixtures and solutions with multiple hazards (precedence of hazard characteristics)

2.0.3.1 At the end of the first sentence, add "or to assign the appropriate entry for articles containing dangerous goods N.O.S (UN 3537 to 3548, see 2.0.6)".

2.0.4 Transport of samples

2.0.4 Add a new provision 2.0.4.3 as follows:

"2.0.4.3 Samples of energetic materials for testing purposes

2.0.4.3.1 Samples of organic substances carrying functional groups listed in tables A6.1 and/or A6.3 in appendix 6 (Screening Procedures) of the Manual of Tests and Criteria may be transported under UN 3224 (self-reactive solid type C) or UN 3223 (self-reactive liquid type C), as applicable, of class 4.1 provided that:

- .1 the samples do not contain any:
 - known explosives;
 - substances showing explosive effects in testing;
 - compounds designed with the view of producing a practical explosive or pyrotechnic effect; or
 - components consisting of synthetic precursors of intentional explosives;
- .2 for mixtures, complexes or salts of inorganic oxidizing substances of class 5.1 with organic material(s), the concentration of the inorganic oxidizing substance is:
 - less than 15%, by mass, if assigned to packing group I (high hazard) or II (medium hazard); or
 - less than 30%, by mass, if assigned to packing group III (low hazard);
- .3 available data do not allow a more precise classification;
- .4 the sample is not packed together with other goods; and
- .5 the sample is packed in accordance with packing instruction P520 and special packing provisions PP94 or PP95 of 4.1.4.1, as applicable."

2.0.5 Transport of wastes

Add a new provision 2.0.6 as follows:

"2.0.6 Classification of articles as articles containing dangerous goods N.O.S.

Note: For articles which do not have an existing proper shipping name and which contain only dangerous goods within the permitted limited quantity amounts specified in column 7a of the Dangerous Goods List, see UN 3363 and special provision 301 of chapter 3.3.

- 2.0.6.1 Articles containing dangerous goods may be classified as otherwise provided by this Code under the proper shipping name for the dangerous goods they contain or in accordance with this section. For the purposes of this section "article" means machinery, apparatus or other devices containing one or more dangerous goods (or residues thereof) that are an integral element of the article, necessary for its functioning, and that cannot be removed for the purpose of transport. An inner packaging shall not be an article.
- 2.0.6.2 Such articles may in addition contain batteries. Lithium batteries that are integral to the article shall be of a type proven to meet the testing requirements of the Manual of Tests and Criteria, part III, subsection 38.3, except when pre-production prototype batteries or batteries of a small production run, consisting of not more than 100 batteries, are installed in the

article. Where a lithium battery installed in an article is damaged or defective, the battery shall be removed.

- 2.0.6.3 This section does not apply to articles for which a more specific proper shipping name already exists in the Dangerous Goods List of chapter 3.2.
- 2.0.6.4 This section does not apply to dangerous goods of class 1, class 6.2, class 7 or radioactive material contained in articles.
- 2.0.6.5 Articles containing dangerous goods shall be assigned to the appropriate class determined by the hazards present using, where applicable, the Precedence of Hazards table in 2.0.3.6 for each of the dangerous goods contained in the article. If dangerous goods classified as class 9 are contained within the article, all other dangerous goods present in the article shall be considered to present a higher hazard.
- 2.0.6.6 Subsidiary hazards shall be representative of the primary hazard posed by the other dangerous goods contained within the article. When only one dangerous good is present in the article, the subsidiary hazard(s), if any, shall be the subsidiary hazard(s) identified in column 4 of the Dangerous Goods List. If the article contains more than one dangerous good and these could react dangerously with one another during transport, each of the dangerous goods shall be enclosed separately (see 4.1.1.6)."

Chapter 2.1

Class 1 – Explosives

2.1.1 Definitions and general provisions

2.1.1.1.3 After "producing a practical", delete the comma.

2.1.1.4 Hazard divisions

In the note under division 1.6, replace "risk" with "hazard".

2.1.2 Compatibility groups and classification codes

2.1.2.2 Compatibility groups and classification codes

In the first column of the table, in the row for compatibility group L, replace "risk" with "hazard".

2.1.3 Classification procedure

2.1.3.4 Exclusion from class 1

2.1.3.4.2.5 In note 2, at the end of the sentence, replace "risk" with "hazard".

2.1.3.5 Assignment of fireworks to hazard divisions

2.1.3.5.1.1 Replace the words "giving a positive result when tested in one of the HSL Flash composition tests in appendix 7 of the Manual of Tests and Criteria" with "containing flash composition (see note 2 of 2.1.3.5.5)".

2.1.3.5.5 Amend note 2 to read as follows:

"Note 2: "Flash composition" in this table refers to pyrotechnic substances in powder form or as pyrotechnic units as presented in the fireworks that are used in waterfalls, or to produce an aural effect or used as a bursting charge, or propellant charge unless:

- (a) the time taken for the pressure rise in the HSL Flash Composition Test in appendix 7 of the Manual of Tests and Criteria is demonstrated to be more than 6 ms for 0.5 g of pyrotechnic substance; or
- (b) the pyrotechnic substance gives a negative "-" result in the US Flash Composition Test in Appendix 7 of the Manual of Tests and Criteria."

In the table, amend the entry for "Waterfall" as follows: for classification 1.1G, amend the entry under "Specification" to read "Containing flash composition regardless of the results of Test Series 6 (see 2.1.3.5.1.1)". For classification 1.3G, amend the entry under "Specification" to read "Not containing flash composition".

Chapter 2.2 **Class 2 – Gases**

2.2.2.3 Class 2.3 Toxic gases

In the note, replace "risk" with "hazard".

2.2.3 Mixtures of gases

2.2.3.3 In the first sentence, replace "risk" with "hazard".

Chapter 2.3 **Class 3 – Flammable liquids**

2.3.2 Assignment of packing group

2.3.2.1 Replace "risk" with "hazard".

2.3.2.1.1 Replace "risk" with "hazard".

2.3.2.1.2 Replace "risk(s)" with "hazard(s)" twice.

2.3.2.2 In sub-paragraph .4, replace "30 litre" with "450 litre".

2.3.2.5 Replace provision 2.3.2.5 to read as follows:

"2.3.2.5 Viscous liquids which:

- have a flashpoint of 23°C or above and less than or equal to 60°C;
- are not toxic or corrosive;
- are not environmentally hazardous or are environmentally hazardous transported in single or combination packagings containing a net quantity per single or inner packaging of 5 litres or less, provided the packagings meet the general provisions of 4.1.1.1, 4.1.1.2 and 4.1.1.4 to 4.1.1.8;

- contain not more than 20% nitrocellulose provided the nitrocellulose contains not more than 12.6% nitrogen by dry mass; and
- are packed in receptacles of not more than 450 litre capacity,

are not subject to the provisions for the marking, labelling and testing of packages in chapters 4.1, 5.2 and 6.1, if:

- .1 in the solvent separation test (see part III, 32.5.1 of the Manual of Tests and Criteria) the height of the separated layer of solvent is less than 3% of the total height; and
- .2 the flowtime in the viscosity test (see part III, 32.4.3 of the Manual of Tests and Criteria) with a jet diameter of 6 mm is equal to or greater than:
 - .1 60 s; or
 - .2 40 s if the viscous liquid contains not more than 60% of class 3 substances.

The following statement shall be included in the transport document:
"Transport in accordance with 2.3.2.5 of the IMDG Code" (see 5.4.1.5.10)."

Chapter 2.4

Class 4 – Flammable solids; substances liable to spontaneous combustion; substances which, in contact with water, emit flammable gases

2.4.0 Introductory note

In the introductory note, replace "additional subsidiary risk" with "additional subsidiary hazards".

2.4.2.3.2 Classification of self-reactive substances

2.4.2.3.2.2 In the second sentence, replace "subsidiary risks" with "subsidiary hazards".

2.4.2.3.2.3 At the end of the first paragraph, add a new sentence to read as follows:

"The formulations listed in packing instruction IBC520 of 4.1.4.2 and in portable tank instruction T23 of 4.2.5.2.6 may also be transported packed in accordance with packing method OP8 of packing instruction P520 of 4.1.4.1, with the same control and emergency temperatures, if applicable."

and in the table, insert a new entry to read as follows:

3227	PHOSPHOROTHIOIC ACID, O-[(CYANOPHENYL METHYLENE) AZANYL] O,O-DIETHYL ESTER	82-91 (Z isomer)	OP8		(10)
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Remarks

In remark (2) after the table, replace "risk" with "hazard".

After remark (9), add a new remark (10) to read as follows:

"(10) This entry applies to the technical mixture in n-butanol within the specified concentration limits of the (Z) isomer."

2.4.2.3.3 Principles for classification of self-reactive substances

2.4.2.3.3.2 In sub-paragraphs .2 and .3, replace "risk" with "hazard".

2.4.2.5 Class 4.1 – Polymerizing substances and mixtures (stabilized)

2.4.2.5.2 Add the following new note at the end:

Note: Substances meeting the criteria of a polymerizing substance and also for inclusion in classes 1 to 8 are subject to the requirements of special provision 386 of chapter 3.3."

Chapter 2.5

Class 5 – Oxidizing substances and organic peroxides

2.5.2 Class 5.1 – Oxidizing substances

Note Renumber the existing note as note 1, and add a new note 2 as follows:

Note 2: By exception, solid ammonium nitrate based fertilizers shall be classified in accordance with the procedure as set out in the Manual of Tests and Criteria, part III, section 39."

2.5.3 Class 5.2 – Organic peroxides

2.5.3.2 Classification of organic peroxides

2.5.3.2.3 In the second sentence, replace "risks" with "hazards".

2.5.3.2.4 At the end of the note, add a new sentence to read as follows:

"The formulations listed in packing instruction IBC520 of 4.1.4.2 and in portable tank instruction T23 of 4.2.5.2.6 may also be transported packed in accordance with packing method OP8 of packing instruction P520 of 4.1.4.1, with the same control and emergency temperatures, if applicable."

In the table header, last column, replace "risks" with "hazards". In the table, insert the following new entries:

3109	1-PHENYLETHYL HYDROPEROXIDE	≤ 38		≥ 62			OP8			
3116	DI-(4-tert- BUTYLCYCLOHEXYL) PEROXYDICARBONATE	≤ 42 (as a paste)					OP7	35	40	
3119	DIISOBUTYRYL PEROXIDE	≤ 42 (as a stable dispersion in water)					OP8	-20	-10	

After the table, in remarks (3), (13), (18) and (27), replace "risk" with "hazard".

2.5.3.3 Principles for classification of organic peroxides

2.5.3.3.2.2 In the first sentence, replace "risk" with "hazard".

2.5.3.3.2.3 Replace "risk" with "hazard".

Chapter 2.6

Class 6 – Toxic and infectious substances

2.6.2 Class 6.1 – Toxic substances

2.6.2.2 Assignment of packing groups to toxic substances

2.6.2.2.1 Replace "risk" with "hazard" three times.

2.6.2.2.4.1 In the note, at the end of the last sentence, replace the wording "(see 2.8.2.3)" with the words "(see 2.8.2.4)".

2.6.2.4 Classification of pesticides

2.6.2.4.1 In the second sentence, replace "risks" with "hazards".

2.6.2.4.3 Replace "risks" with "hazards".

2.6.3 Class 6.2 – Infectious substances

2.6.3.1 Definitions

2.6.3.1.4 In the definition of "Patient specimens", after "*Patient specimens* are" replace "human or animal materials," with "those".

2.6.3.6 Infected animals

2.6.3.6.2 Delete paragraph 2.6.3.6.2.

Chapter 2.8
Class 8 – Corrosive substances

Replace entire chapter 2.8 with the following:

"Chapter 2.8

Class 8 – Corrosive substances

2.8.1 Definition, general provisions and properties

2.8.1.1 Definition

2.8.1.1.1 *Corrosive substances* are substances which, by chemical action, will cause irreversible damage to the skin, or, in the case of leakage, will materially damage, or even destroy, other goods or the means of transport.

2.8.1.1.2 For substances and mixtures that are corrosive to skin, general classification provisions are provided in section 2.8.2. Skin corrosion refers to the production of irreversible damage to the skin, namely, visible necrosis through the epidermis and into the dermis occurring after exposure to a substance or mixture.

2.8.1.1.3 Liquids and solids which may become liquid during transport, which are judged not to be skin corrosive shall still be considered for their potential to cause corrosion to certain metal surfaces in accordance with the criteria in 2.8.3.3.3.2.

2.8.1.2 Properties

2.8.1.2.1 In cases where particularly severe personal damage is to be expected, a note to that effect is made in the Dangerous Goods List in chapter 3.2 in the wording "causes (severe) burns to skin, eyes and mucous membranes".

2.8.1.2.2 Many substances are sufficiently volatile to evolve vapour irritating to the nose and eyes. If so, this fact is mentioned in the Dangerous Goods List in chapter 3.2 in the wording "vapour irritates mucous membranes".

2.8.1.2.3 A few substances may produce toxic gases when decomposed by very high temperatures. In these cases the statement "when involved in a fire, evolves toxic gases" appears in the Dangerous Goods List in chapter 3.2.

2.8.1.2.4 In addition to direct destructive action in contact with skin or mucous membranes, some substances in this class are toxic or harmful. Poisoning may result if they are swallowed, or if their vapour is inhaled; some of them even may penetrate the skin. Where appropriate, a statement is made to that effect in the Dangerous Goods List in chapter 3.2.

2.8.1.2.5 All substances in this class have a more or less destructive effect on materials such as metals and textiles.

2.8.1.2.5.1 In the Dangerous Goods List, the term "corrosive to most metals" means that any metal likely to be present in a ship, or in its cargo, may be attacked by the substance or its vapour.

2.8.1.2.5.2 The term "corrosive to aluminium, zinc, and tin" implies that iron or steel is not damaged in contact with the substance.

2.8.1.2.5.3 A few substances in this class can corrode glass, earthenware and other siliceous materials. Where appropriate, this is stated in the Dangerous Goods List in chapter 3.2.

2.8.1.2.6 Many substances in this class only become corrosive after having reacted with water, or with moisture in the air. This fact is indicated in the Dangerous Goods List in chapter 3.2 by the words "in the presence of moisture...". The reaction of water with many substances is accompanied by the liberation of irritating and corrosive gases. Such gases usually become visible as fumes in the air.

2.8.1.2.7A few substances in this class generate heat in reaction with water or organic materials, including wood, paper, fibres, some cushioning materials and certain fats and oils. Where appropriate, this is indicated in the Dangerous Goods List in chapter 3.2.

2.8.2 General classification provisions

2.8.2.1 Substances and mixtures of class 8 are divided among the three packing groups according to their degree of danger in transport:

- .1 packing group I: very dangerous substances and mixtures;
- .2 packing group II: substances and mixtures presenting medium danger; and
- .3 packing group III: substances and mixtures that present minor danger.

2.8.2.2 Allocation of substances listed in the Dangerous Goods List in chapter 3.2 to the packing groups in class 8 has been made on the basis of experience taking into account such additional factors as inhalation risk (see 2.8.2.4) and reactivity with water (including the formation of dangerous decomposition products).

2.8.2.3 New substances and mixtures can be assigned to packing groups on the basis of the length of time of contact necessary to produce irreversible damage of intact skin tissue in accordance with the criteria in 2.8.3. Alternatively, for mixtures, the criteria in 2.8.4 can be used.

2.8.2.4 A substance or mixture meeting the criteria of class 8 having an inhalation toxicity of dusts and mists (LC₅₀) in the range of packing group I, but toxicity through oral ingestion or dermal contact only in the range of packing group III or less, shall be allocated to class 8 (see note under 2.6.2.2.4.1).

2.8.3 Packing group assignment for substances and mixtures

2.8.3.1 Existing human and animal data including information from single or repeated exposure shall be the first line of evaluation, as they give information directly relevant to effects on the skin.

2.8.3.2 In assigning the packing group in accordance with 2.8.2.3, account shall be taken of human experience in instances of accidental exposure. In the absence of human experience the grouping shall be based on data obtained from experiments in accordance with OECD Test Guideline 404¹ or 435.² A substance or mixture which is

¹ OECD Guideline for the testing of chemicals No. 404, Acute Dermal Irritation/Corrosion 2015.

² OECD Guideline for the testing of chemicals No. 435, *In Vitro* Membrane Barrier Test Method for Skin Corrosion 2015.

determined not to be corrosive in accordance with OECD Test Guideline 430³ or 431⁴ may be considered not to be corrosive to skin for the purposes of these regulations without further testing.

2.8.3.3 Packing groups are assigned to corrosive substances in accordance with the following criteria (see table 2.8.3.4):

- .1 Packing group I is assigned to substances that cause irreversible damage of intact skin tissue within an observation period of up to 60 minutes starting after the exposure time of 3 minutes or less.
- .2 Packing group II is assigned to substances that cause irreversible damage of intact skin tissue within an observation period of up to 14 days starting after the exposure time of more than 3 minutes but not more than 60 minutes.
- .3 Packing group III is assigned to substances that:
 - .1 cause irreversible damage of intact skin tissue within an observation period up to 14 days starting after the exposure time of more than 60 minutes but not more than 4 hours; or
 - .2 are judged not to cause irreversible damage of intact skin tissue but which exhibit a corrosion rate on either steel or aluminium surfaces exceeding 6.25 mm a year at a test temperature of 55°C when tested on both materials. For the purposes of testing steel, type S235JR+CR (1.0037 resp. St 37-2), S275J2G3+CR (1.0144 resp. St 44-3), ISO 3574 or Unified Numbering System (UNS) G10200 or a similar type or SAE 1020, and for testing aluminium, non-clad, types 7075-T6 or AZ5GU-T6 shall be used. An acceptable test is prescribed in the Manual of Tests and Criteria, part III, section 37.
Note: Where an initial test on either steel or aluminium indicates the substance being tested is corrosive, the follow-up test on the other metal is not required.

Table 2.8.3.4: Table summarizing the criteria in 2.8.3.3

Packing Group	Exposure Time	Observation Period	Effect
I	≤ 3 min	≤ 60 min	Irreversible damage of intact skin
II	> 3 min ≤ 1 h	≤ 14 d	Irreversible damage of intact skin
III	> 1 h ≤ 4 h	≤ 14 d	Irreversible damage of intact skin
III	-	-	Corrosion rate on either steel or aluminium surfaces exceeding 6.25 mm a year at a test temperature of 55°C when tested on both materials

³ OECD Guideline for the testing of chemicals No. 430, *In Vitro* Skin Corrosion: Transcutaneous Electrical Resistance Test (TER) 2015.

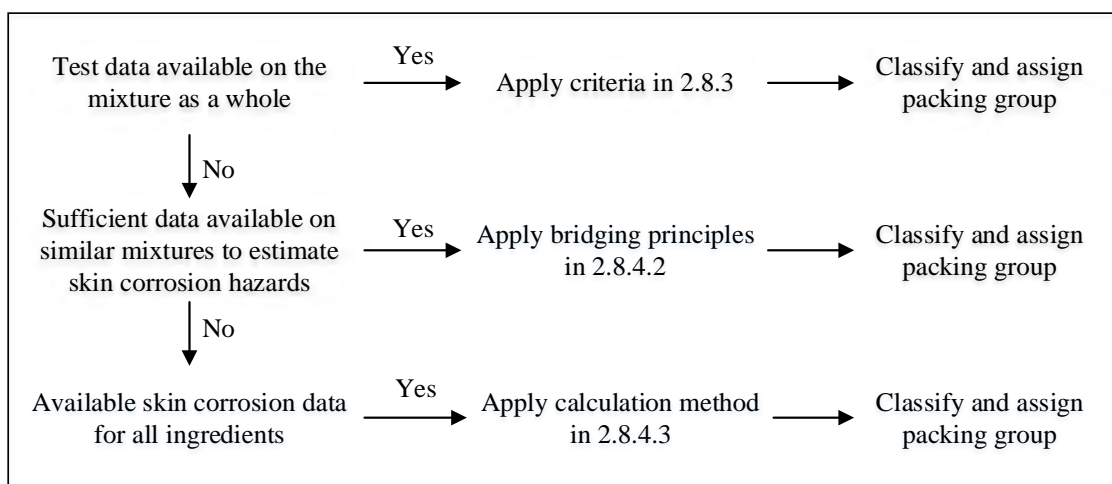
⁴ OECD Guideline for the testing of chemicals No. 431, *In Vitro* Skin Corrosion: Human Skin Model Test 2015.

2.8.4 Alternative packing group assignment methods for mixtures: stepwise approach

2.8.4.1 General provisions

2.8.4.1.1 For mixtures it is necessary to obtain or derive information that allows the criteria to be applied to the mixture for the purpose of classification and assignment of packing groups. The approach to classification and assignment of packing groups is tiered, and is dependent upon the amount of information available for the mixture itself, for similar mixtures and/or for its ingredients. The flow chart of figure 2.8.4.1 below outlines the process to be followed:

Figure 2.8.4.1: Stepwise approach to classify and assign packing group of corrosive mixtures



2.8.4.2 Bridging principles

2.8.4.2.1 Where a mixture has not been tested to determine its skin corrosion potential, but there are sufficient data on both the individual ingredients and similar tested mixtures to adequately classify and assign a packing group for the mixture, these data will be used in accordance with the following bridging principles. This ensures that the classification process uses the available data to the greatest extent possible in characterizing the hazards of the mixture.

- .1 **Dilution:** If a tested mixture is diluted with a diluent which does not meet the criteria for class 8 and does not affect the packing group of other ingredients, then the new diluted mixture may be assigned to the same packing group as the original tested mixture.

Note: in certain cases, diluting a mixture or substance may lead to an increase in the corrosive properties. If this is the case, this bridging principle cannot be used.

- .2 **Batching:** The skin corrosion potential of a tested production batch of a mixture can be assumed to be substantially equivalent to that of another untested production batch of the same commercial product when produced by or under the control of the same manufacturer, unless there is reason to believe there is significant variation such that the skin corrosion potential of the untested batch has changed. If the latter occurs, a new classification is necessary.

- .3 **Concentration of mixtures of packing group I:** If a tested mixture meeting the criteria for inclusion in packing group I is concentrated, the more concentrated untested mixture may be assigned to packing group I without additional testing.
- .4 **Interpolation within one packing group:** For three mixtures (A, B and C) with identical ingredients, where mixtures A and B have been tested and are in the same skin corrosion packing group, and where untested mixture C has the same class 8 ingredients as mixtures A and B but has concentrations of class 8 ingredients intermediate to the concentrations in mixtures A and B, then mixture C is assumed to be in the same skin corrosion packing group as A and B.
- .5 **Substantially similar mixtures:** Given the following:
- .1 two mixtures: (A+B) and (C+B);
 - .2 the concentration of ingredient B is the same in both mixtures;
 - .3 the concentration of ingredient A in mixture (A+B) equals the concentration of ingredient C in mixture (C+B); and
 - .4 data on skin corrosion for ingredients A and C are available and substantially equivalent, i.e. they are the same skin corrosion packing group and do not affect the skin corrosion potential of B.

if mixture (A+B) or (C+B) is already classified based on test data, then the other mixture may be assigned to the same packing group.

2.8.4.3 Calculation method based on the classification of the substances

2.8.4.3.1 Where a mixture has not been tested to determine its skin corrosion potential, nor is sufficient data available on similar mixtures, the corrosive properties of the substances in the mixture shall be considered to classify and assign a packing group.

Applying the calculation method is only allowed if there are no synergistic effects that make the mixture more corrosive than the sum of its substances. This restriction applies only if packing group II or III would be assigned to the mixture.

2.8.4.3.2 When using the calculation method, all class 8 ingredients present at a concentration of $\geq 1\%$ shall be taken into account, or $< 1\%$ if these ingredients are still relevant for classifying the mixture to be corrosive to skin.

2.8.4.3.3 To determine whether a mixture containing corrosive substances shall be considered a corrosive mixture and to assign a packing group, the calculation method in the flow chart in figure 2.8.4.3 shall be applied.

2.8.4.3.4 When a specific concentration limit (SCL) is assigned to a substance following its entry in the Dangerous Goods List or in a special provision, this limit shall be used instead of the generic concentration limits (GCL). This appears where 1% is used in the first step for the assessment of the packing group I substances, and where 5% is used for the other steps respectively in figure 2.8.4.3.

2.8.4.3.5 For this purpose, the summation formula for each step of the calculation method shall be adapted. This means that, where applicable, the generic concentration limit shall be substituted by the specific concentration limit assigned to the substance(s) (SCL_i), and the adapted formula is a weighted average of the different concentration limits assigned to the different substances in the mixture:

$$\frac{PGx_1}{GCL} + \frac{PGx_2}{SCL_2} + \dots + \frac{PGx_i}{SCL_i} \geq 1$$

Where:

PG_{x_i} = concentration of substance 1, 2 ...i in the mixture, assigned to packing group x (I, II or III)

GCL = generic concentration limit

SCL_i = specific concentration limit assigned to substance i

The criterion for a packing group is fulfilled when the result of the calculation is ≥ 1 . The generic concentration limits to be used for the evaluation in each step of the calculation method are those found in figure 2.8.4.3.

Examples for the application of the above formula can be found in the note below.

Note: *Examples for the application of the above formula*

Example 1: A mixture contains one corrosive substance in a concentration of 5% assigned to packing group I without a specific concentration limit:

Calculation for packing group I: $\frac{5}{5 (GCL)} = 1 \rightarrow$ assign to class 8, packing group I.

Example 2: A mixture contains three substances corrosive to skin; two of them (A and B) have specific concentration limits; for the third one (C) the generic concentration limits applies. The rest of the mixture needs not to be taken into consideration.

Substance X in the mixture and its packing group assignment within class 8	Concentration (conc) in the mixture in %	Specific concentration limit (SCL) for packing group I	Specific concentration limit (SCL) for packing group II	Specific concentration limit (SCL) for packing group III
A, assigned to packing group I	3	30%	none	none
B, assigned to packing group I	2	20%	10%	none
C, assigned to packing group III	10	none	none	none

Calculation for packing group I: $\frac{3 (conc A)}{30 (SCL PGI)} + \frac{2 (conc B)}{20 (SCL PGI)} = 0,2 < 1$

The criterion for packing group I is not fulfilled.

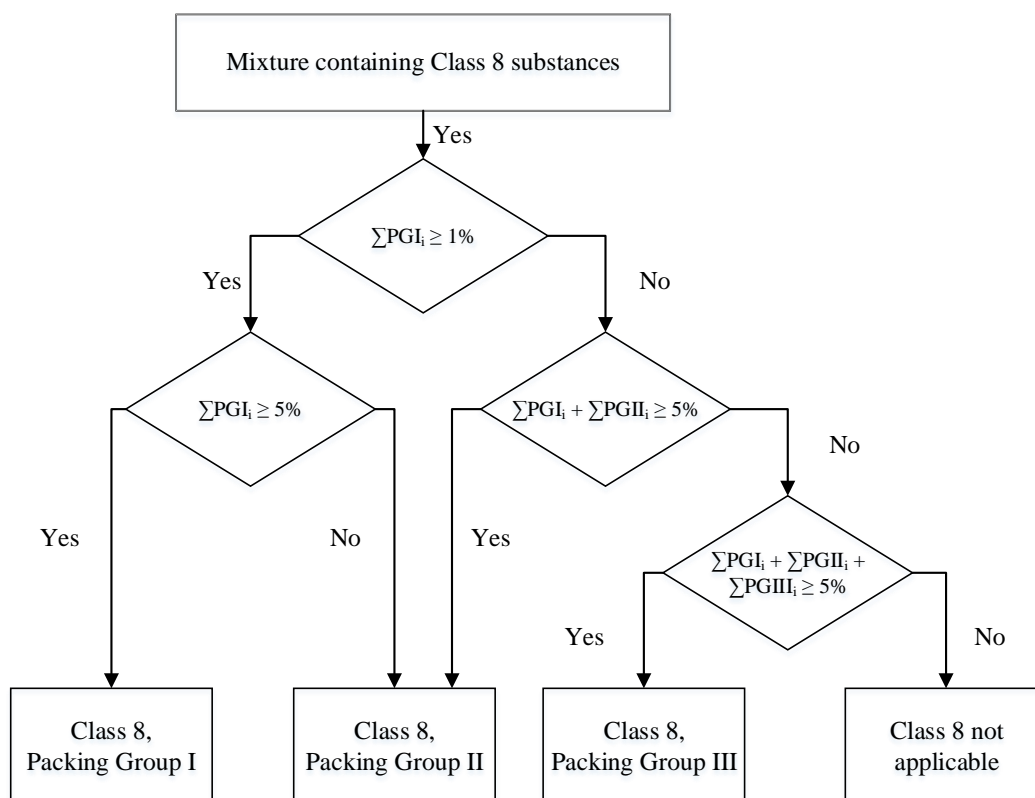
Calculation for packing group II: $\frac{3 (\text{conc A})}{5 (\text{GCL PG II})} + \frac{2 (\text{conc B})}{10 (\text{SCL PG II})} = 0,8 < 1$

The criterion for packing group II is not fulfilled.

Calculation for packing group III: $\frac{3 (\text{conc A})}{5 (\text{GCL PGIII})} + \frac{2 (\text{conc B})}{5 (\text{GCL PG III})} + \frac{10 (\text{conc C})}{5 \text{ GCL PG III}} = 3 \geq 1$

The criterion for packing group III is fulfilled, the mixture shall be assigned to class 8, packing group III.

Figure 2.8.4.3: Calculation method



2.8.5 Substances not accepted for transport

Chemically unstable substances of class 8 shall not be accepted for transport unless the necessary precautions have been taken to prevent the possibility of a dangerous decomposition or polymerization under normal conditions of transport. For the precautions necessary to prevent polymerization, see special provision 386 of chapter 3.3. To this end particular care shall be taken to ensure that receptacles and tanks do not contain any substances liable to promote these reactions.

..

Chapter 2.9

Miscellaneous dangerous substances and articles (class 9) and environmentally hazardous substances

2.9.2 Assignment to class 9

2.9.2.2 Under the heading "Lithium batteries", add the following new entry:

"3536 LITHIUM BATTERIES INSTALLED IN CARGO TRANSPORT UNIT".

Before the heading "Other substances or articles presenting a danger during transport, but not meeting the definitions of another class", insert the following new sub-division:

"Ammonium nitrate based fertilizers

2071 AMMONIUM NITRATE BASED FERTILIZER

Solid ammonium nitrate based fertilizers shall be classified in accordance with the procedure as set out in the Manual of Tests and Criteria, part III, section 39."

Under the heading "Other substances or articles presenting a danger during transport, but not meeting the definitions of another class", delete entry "2071 AMMONIUM NITRATE BASED FERTILIZER" and add the following new entry at the end of the list:

"3548 ARTICLES CONTAINING MISCELLANEOUS DANGEROUS GOODS N.O.S."

2.9.3 Environmentally hazardous substances (aquatic environment)

2.9.3.4.6.5 *Classification of mixtures with ingredients without any useable information*

2.9.3.4.6.5.1 At the end of the paragraph, delete the words "with the additional statement that: "x percent of the mixture consists of ingredient(s) of unknown hazards to the aquatic environment"".

2.9.4 Lithium batteries

Add the following new sub-paragraphs .6 and .7:

".6 Lithium batteries, containing both primary lithium metal cells and rechargeable lithium ion cells, that are not designed to be externally charged (see special provision 387 of chapter 3.3) shall meet the following conditions:

- .1 the rechargeable lithium ion cells can only be charged from the primary lithium metal cells;
- .2 overcharge of the rechargeable lithium ion cells is precluded by design;
- .3 the battery has been tested as a lithium primary battery; and
- .4 component cells of the battery shall be of a type proved to meet the respective testing requirements of the Manual of Tests and Criteria, part III, subsection 38.3.

- .7 Manufacturers and subsequent distributors of cells or batteries shall make available the test summary as specified in the Manual of Tests and Criteria, part III, subsection 38.3, paragraph 38.3.5."

PART 3 DANGEROUS GOODS LIST, SPECIAL PROVISIONS AND EXCEPTIONS

Chapter 3.1 General

3.1.1 Scope and general provisions

- 3.1.1.2 At the end of the last sentence, replace "risks" with "hazards".

3.1.2 Proper shipping names

- 3.1.2.2 In the paragraph, amend the first sentence to read as follows:

"When a combination of several distinct proper shipping names are listed under a single UN number, and these are separated by "and" or "or" in lower case or are punctuated by commas, only the most appropriate shall be shown in the transport document and package marks.",

and delete the second sentence.

- 3.1.2.6 Add a new sub-paragraph .2 as follows:

".2 Unless it is already included in capital letters in the name indicated in the Dangerous Goods List, the words "TEMPERATURE CONTROLLED" shall be added as part of the proper shipping name.",

and renumber the existing sub-paragraph .2 as .3.

3.1.2.8 Generic or "not otherwise specified" (N.O.S.) entries

- 3.1.2.8.1.2 Amend the first sentence to read as follows:

"When a mixture of dangerous goods or articles containing dangerous goods are described by one of the "N.O.S." or "generic" entries to which special provision 274 has been allocated in the Dangerous Goods List, not more than the two constituents which most predominantly contribute to the hazard or hazards of the mixture or of the articles need to be shown, excluding controlled substances when their disclosure is prohibited by national law or international convention.",

and in the second sentence, replace "risk" with "hazard" twice.

- 3.1.2.8.1.3 Add the following new example at the end of the paragraph:

"UN 3540 ARTICLES CONTAINING FLAMMABLE LIQUID, N.O.S. (pyrrolidine)".

3.1.3 Mixtures or solutions

- 3.1.3.2.3 Replace "risk(s)" with "hazard(s)".

3.1.3.4 Replace "subsidiary risk(s)" with "subsidiary hazard(s)".

3.1.4 Segregation groups

3.1.4.1 Amend the paragraph to read as follows:

"3.1.4.1 For the purpose of segregation, dangerous goods having certain similar chemical properties have been grouped together in segregation groups, see 7.2.5."

3.1.4.4 Amend the headings to read as follows:

- 1 Acids (SGG1 or SGG1a)
- 2 Ammonium compounds (SGG2)
- 3 Bromates (SGG3)
- 4 Chlorates (SGG4)
- 5 Chlorites (SGG5)
- 6 Cyanides (SGG6)
- 7 Heavy metals and their salts (including their organometallic compounds) (SGG7)
- 8 Hypochlorites (SGG8)
- 9 Lead and its compounds (SGG9)
- 10 Liquid halogenated hydrocarbons (SGG10)
- 11 Mercury and mercury compounds (SGG11)
- 12 Nitrites and their mixtures (SGG12)
- 13 Perchlorates (SGG13)
- 14 Permanganates (SGG14)
- 15 Powdered metals (SGG15)
- 16 Peroxides (SGG16)
- 17 Azides (SGG17)
- 18 Alkalis (SGG18)

3.1.4.4 Under "3 Bromates", delete the entry "3213 Ammonium bromate". Under "7 Heavy metals and their salts (including their organometallic compounds)", delete the entries "1366 Diethylzinc" and "1370 Dimethylzinc".

Chapter 3.2 Dangerous Goods List

3.2.1 Structure of the Dangerous Goods List

In the description of column 4, replace "subsidiary risk(s)" with "subsidiary hazard(s)" twice.

In the description of column 15, add "Revised" before the word "Emergency".

In the description of column 16b, insert "the segregation group codes as specified in 7.2.5.2 and" after "contains".

Dangerous Goods List

In the Dangerous Goods List, in the heading of column 4, replace "risk" with "hazard", and amend the following entries:

0004	in column 16b, insert "SGG2"
0005	in column 16a, amend "Category 05" to "Category 03"
0006	in column 16a, amend "Category 04" to "Category 03"
0007	in column 16a, amend "Category 05" to "Category 03"
0033	in column 16a, amend "Category 05" to "Category 03"
0034	in column 16a, amend "Category 04" to "Category 03"
0035	in column 16a, amend "Category 04" to "Category 03"
0037	in column 16a, amend "Category 05" to "Category 03"
0038	in column 16a, amend "Category 04" to "Category 03"
0042	in column 16a, amend "Category 04" to "Category 03"
0043	in column 16a, amend "Category 04" to "Category 03"
0048	in column 16a, amend "Category 04" to "Category 03"
0056	in column 16a, amend "Category 04" to "Category 03"
0059	in column 16a, amend "Category 04" to "Category 03"
0060	in column 16a, amend "Category 04" to "Category 03"
0065	in column 16a, amend "Category 04" to "Category 03"
0099	in column 16a, amend "Category 04" to "Category 03"
0102	in column 16a, amend "Category 04" to "Category 03"
0124	in column 16a, amend "Category 04" to "Category 03" and insert "SW30"
0129	in column 16b, insert "SGG7", "SGG9" and "SGG17"
0130	in column 16b, insert "SGG7" and "SGG9"
0135	in column 16b, insert "SGG7" and "SGG11"
0136	in column 16a, amend "Category 05" to "Category 03"
0137	in column 16a, amend "Category 04" to "Category 03"
0138	in column 16a, amend "Category 04" to "Category 03"
0167	in column 16a, amend "Category 05" to "Category 03"
0168	in column 16a, amend "Category 04" to "Category 03"
0169	in column 16a, amend "Category 04" to "Category 03"
0180	in column 16a, amend "Category 05" to "Category 03"
0181	in column 16a, amend "Category 04" to "Category 03"
0182	in column 16a, amend "Category 04" to "Category 03"
0183	in column 16a, amend "Category 04" to "Category 03"
0186	in column 16a, amend "Category 04" to "Category 03"
0204	in column 16a, amend "Category 05" to "Category 03"
0221	in column 16a, amend "Category 04" to "Category 03"
0222	in column 16b, insert "SGG2"
0224	in column 16b, insert "SGG17"
0242	in column 16a, amend "Category 04" to "Category 03"
0271	in column 16a, amend "Category 04" to "Category 03"
0272	in column 16a, amend "Category 04" to "Category 03"
0275	in column 16a, amend "Category 04" to "Category 03"
0277	in column 16a, amend "Category 04" to "Category 03"
0279	in column 16a, amend "Category 04" to "Category 03"
0280	in column 16a, amend "Category 04" to "Category 03"
0283	in column 16a, amend "Category 04" to "Category 03"
0284	in column 16a, amend "Category 04" to "Category 03"
0285	in column 16a, amend "Category 04" to "Category 03"

0286	in column 16a, amend "Category 04" to "Category 03"
0287	in column 16a, amend "Category 04" to "Category 03"
0290	in column 16a, amend "Category 04" to "Category 03"
0291	in column 16a, amend "Category 05" to "Category 03"
0292	in column 16a, amend "Category 05" to "Category 03"
0293	in column 16a, amend "Category 05" to "Category 03"
0294	in column 16a, amend "Category 05" to "Category 03"
0295	in column 16a, amend "Category 05" to "Category 03"
0296	in column 16a, amend "Category 05" to "Category 03"
0321	in column 16a, amend "Category 04" to "Category 03"
0324	in column 16a, amend "Category 05" to "Category 03"
0326	in column 16a, amend "Category 04" to "Category 03"
0327	in column 16a, amend "Category 04" to "Category 03"
0328	in column 16a, amend "Category 04" to "Category 03"
0329	in column 16a, amend "Category 04" to "Category 03"
0330	in column 16a, amend "Category 05" to "Category 03"
0346	in column 16a, amend "Category 04" to "Category 03"
0348	in column 16a, amend "Category 05" to "Category 03"
0349	in column 6, insert "347"
0367	in column 6, insert "347"
0369	in column 16a, amend "Category 05" to "Category 03"
0371	in column 16a, amend "Category 05" to "Category 03"
0374	in column 16a, amend "Category 04" to "Category 03"
0375	in column 16a, amend "Category 04" to "Category 03"
0381	in column 16a, amend "Category 04" to "Category 03"
0384	in column 6, insert "347"
0402	in column 16b, insert "SGG2"
0408	in column 16a, amend "Category 04" to "Category 03"
0409	in column 16a, amend "Category 04" to "Category 03"
0413	in column 16a, amend "Category 04" to "Category 03"
0414	in column 16a, amend "Category 04" to "Category 03"
0415	in column 16a, amend "Category 04" to "Category 03"
0417	in column 16a, amend "Category 04" to "Category 03"
0426	in column 16a, amend "Category 05" to "Category 03"
0427	in column 16a, amend "Category 05" to "Category 03"
0436	in column 16a, amend "Category 04" to "Category 03"
0437	in column 16a, amend "Category 04" to "Category 03"
0439	in column 16a, amend "Category 04" to "Category 03"
0442	in column 16a, amend "Category 04" to "Category 03"
0443	in column 16a, amend "Category 04" to "Category 03"
0447	in column 16a, amend "Category 04" to "Category 03"
0451	in column 16a, amend "Category 04" to "Category 03"
0457	in column 16a, amend "Category 04" to "Category 03"
0458	in column 16a, amend "Category 04" to "Category 03"
0462	in column 16a, amend "Category 04" to "Category 03"
0463	in column 16a, amend "Category 04" to "Category 03"
0464	in column 16a, amend "Category 04" to "Category 03"
0465	in column 16a, amend "Category 05" to "Category 03"
0466	in column 16a, amend "Category 04" to "Category 03"
0467	in column 16a, amend "Category 04" to "Category 03"
0468	in column 16a, amend "Category 04" to "Category 03"
0469	in column 16a, amend "Category 05" to "Category 03"

0470	in column 16a, amend "Category 04" to "Category 03"
0472	in column 16a, amend "Category 05" to "Category 03"
0481	in column 6, insert "347"
0494	in column 16a, insert "SW30"
0502	in column 16a, amend "Category 04" to "Category 03"
1005	in column 16b, insert "SGG18"
1011	in column 6, insert "392"
1016	in column 6, insert "974"
1032	in column 16b, insert "SG35"
1036	in column 16b, insert "SG35"
1046	in column 6, insert "974"
1049	in column 6, insert "392" and "974"
1052	in column 16b, insert "SGG1a", "SG36" and "SG49"
1061	in column 16b, insert "SG35"
1075	in column 6, insert "392"
1083	in column 16b, insert "SG35"
1099	in column 16b, insert "SGG10"
1100	in column 16b, insert "SGG10"
1106 PG II	in column 16b, insert "SG35"
1106 PG III	in column 16b, insert "SG35"
1107	in column 16b, insert "SGG10"
1125	in column 16b, insert "SG35"
1126	in column 16b, insert "SGG10"
1127	in column 16b, insert "SGG10"
1134	in column 16b, insert "SGG10"
1150	in column 16b, insert "SGG10"
1152	in column 16b, insert "SGG10"
1154	in column 16b, insert "SG35"
1158	in column 16b, insert "SG35"
1160	in column 16b, insert "SGG18"
1163	in column 16b, insert "SGG18"
1182	in column 16b, insert "SGG1", "SG36" and "SG49"
1183	in column 16b, insert "SGG1", "SG36" and "SG49"
1184	in column 16b, insert "SGG10"
1214	in column 16b, insert "SG35"
1221	in column 16b, insert "SG35"
1235	in column 16b, insert "SGG18"
1238	in column 16b, insert "SGG1", "SG36" and "SG49"
1242	in column 16b, insert "SGG1", "SG36" and "SG49"
1244	in column 16b, insert "SGG18"
1250	in column 16b, insert "SGG1", "SG36" and "SG49"
1277	in column 16b, insert "SG35"
1278	in column 16b, insert "SGG10"
1279	in column 16b, insert "SGG10"
1295	in column 16b, insert "SGG1", "SG36" and "SG49"
1296	in column 16b, insert "SG35"
1297 PG I	in column 16b, insert "SG35"
1297 PG II	in column 16b, insert "SG35"

1297 PG III	in column 16b, insert "SG35"
1298	in column 16b, insert "SGG1", "SG36" and "SG49"
1303	in column 16b, insert "SGG10"
1305	in column 16b, insert "SGG1", "SG36" and "SG49"
1309 PG II	in column 16b, insert "SGG15"
1309 PG III	in column 16b, insert "SGG15"
1310	in column 16b, insert "SGG2"
1325 PG II	in column 16b, insert "SG72"
1325 PG III	in column 16b, insert "SG72"
1326	in column 16b, insert "SGG15"
1327	in column 6, insert "973"
1347	in column 16b, insert "SGG7"
1352	in column 16b, insert "SGG15"
1358	in column 16b, insert "SGG15"
1363	in column 6, insert "973"
1364	in column 6, insert "973"
1365	in column 6, insert "973"
1382	in column 16b, insert "SGG18"
1383	in column 16b, insert "SGG15"
1385	in column 16b, insert "SGG18"
1386 (both entries)	in column 6, insert "973"
1389	in column 16b, insert "SGG7" and "SGG11"
1392	in column 16b, insert "SGG7" and "SGG11"
1396 PG II	in column 16b, insert "SGG15"
1396 PG III	in column 16b, insert "SGG15"
1398	in column 16b, insert "SGG15"
1418 PG I	in column 16b, insert "SGG15"
1418 PG II	in column 16b, insert "SGG15"
1418 PG III	in column 16b, insert "SGG15"
1435	in column 16b, insert "SGG7" and "SGG15"
1436 PG I	in column 16b, insert "SGG7" and "SGG15"
1436 PG II	in column 16b, insert "SGG7" and "SGG15"
1436 PG III	in column 16b, insert "SGG7" and "SGG15"
1439	in column 16b, insert "SGG2"
1442	in column 16b, insert "SGG2" and "SGG13"
1444	in column 16b, insert "SGG2"
1445	in column 16b, insert "SGG4"
1447	in column 16b, insert "SGG13"

1448	in column 16b, insert "SGG14"
1449	in column 16b, insert "SGG16"
1450	in column 16b, insert "SGG3"
1452	in column 16b, insert "SGG4"
1453	in column 16b, insert "SGG5"
1455	in column 16b, insert "SGG13"
1456	in column 16b, insert "SGG14"
1457	in column 16b, insert "SGG16"
1458 PG II	in column 16b, insert "SGG4"
1458 PG III	in column 16b, insert "SGG4"
1459 PG II	in column 16b, insert "SGG4"
1459 PG III	in column 16b, insert "SGG4"
1461	in column 16b, insert "SGG4"
1462	in column 16b, insert "SGG5"
1469	in column 16b, insert "SGG7", "SGG9"
1470	in column 16b, insert "SGG7", "SGG9" and "SGG13"
1471 PG II	in column 16b, insert "SGG8"
1471 PG III	in column 16b, insert "SGG8"
1472	in column 16b, insert "SGG16"
1473	in column 16b, insert "SGG3"
1475	in column 16b, insert "SGG13"
1476	in column 16b, insert "SGG16"
1481 PG II	in column 16b, insert "SGG13"
1481 PG III	in column 16b, insert "SGG13"
1482 PG II	in column 16b, insert "SGG14"
1482 PG III	in column 16b, insert "SGG14"
1483 PG II	in column 16b, insert "SGG16"
1483 PG III	in column 16b, insert "SGG16"
1484	in column 16b, insert "SGG3"
1485	in column 16b, insert "SGG4"
1487	in column 16b, insert "SGG12"
1488	in column 16b, insert "SGG12"
1489	in column 16b, insert "SGG13"
1490	in column 16b, insert "SGG14"
1491	in column 16b, insert "SGG16"
1493	in column 16b, insert "SGG7"
1494	in column 16b, insert "SGG3"
1495	in column 16b, insert "SGG4"
1496	in column 16b, insert "SGG5"
1500	in column 16b, insert "SGG12"

1502	in column 16b, insert "SGG13"
1503	in column 16b, insert "SGG14"
1504	in column 16b, insert "SGG16"
1506	in column 16b, insert "SGG4"
1508	in column 16b, insert "SGG13"
1509	in column 16b, insert "SGG16"
1512	in column 16b, insert "SGG2", "SGG7" and "SGG12"
1513	in column 16b, insert "SGG4" and "SGG7"
1514	in column 16b, insert "SGG7"
1515	in column 16b, insert "SGG7" and "SGG14"
1516	in column 16b, insert "SGG7" and "SGG16"
1541	in column 16b, insert "SGG6"
1546	in column 16b, insert "SGG2"
1565	in column 16b, insert "SGG6"
1571	in column 16b, insert "SGG17"
1572	in column 16b, insert "SGG1", "SG36" and "SG49"
1575	in column 16b, insert "SGG6"
1587	in column 16b, insert "SGG6" and "SGG7"
1588 PG I	in column 16b, insert "SGG6"
1588 PG II	in column 16b, insert "SGG6"
1588 PG III	in column 16b, insert "SGG6"
1591	in column 16b, insert "SGG10"
1593	in column 16b, insert "SGG10"
1595	in column 16b, insert "SGG1", "SG36" and "SG49"
1604	in column 16b, insert "SGG18"
1605	in column 16b, insert "SGG10"
1616	in column 16b, insert "SGG7" and "SGG9"
1617	in column 16b, insert "SGG7" and "SGG9"
1618	in column 16b, insert "SGG7" and "SGG9"
1620	in column 16b, insert "SGG6", "SGG7" and "SGG9"
1623	in column 16b, insert "SGG7" and "SGG11"
1624	in column 16b, insert "SGG7" and "SGG11"
1625	in column 16b, insert "SGG7" and "SGG11"
1626	in column 16b, insert "SGG6", "SGG7" and "SGG11"
1627	in column 16b, insert "SGG7" and "SGG11"
1629	in column 16b, insert "SGG7" and "SGG11"
1630	in column 16b, insert "SGG2", "SGG7" and "SGG11"
1631	in column 16b, insert "SGG7" and "SGG11"
1634	in column 16b, insert "SGG7" and "SGG11"
1636	in column 16b, insert "SGG6", "SGG7" and "SGG11"
1637	in column 16b, insert "SGG7" and "SGG11"
1638	in column 16b, insert "SGG7" and "SGG11"
1639	in column 16b, insert "SGG7" and "SGG11"
1640	in column 16b, insert "SGG7" and "SGG11"
1641	in column 16b, insert "SGG7" and "SGG11"
1642	in column 16b, insert "SGG6", "SGG7" and "SGG11"
1643	in column 16b, insert "SGG7" and "SGG11"
1644	in column 16b, insert "SGG7" and "SGG11"
1645	in column 16b, insert "SGG7" and "SGG11"

1646	in column 16b, insert "SGG7" and "SGG11"
1647	in column 16b, insert "SGG10"
1649	in column 16b, insert "SGG7" and "SGG9"
1653	in column 16b, insert "SGG6" and "SGG7"
1669	in column 16b, insert "SGG10"
1674	in column 16b, insert "SGG7"
1679	in column 16b, insert "SGG6"
1680	in column 16b, insert "SGG6"
1683	in column 16b, insert "SGG7"
1684	in column 16b, insert "SGG6" and "SGG7"
1687	in column 16b, insert "SGG17"
1689	in column 16b, insert "SGG6"
1694	in column 16b, insert "SGG6"
1701	in column 16b, insert "SGG10"
1702	in column 16b, insert "SGG10"
1710	in column 16b, insert "SGG10"
1712	in column 16b, insert "SGG7"
1713	in column 16b, insert "SGG6" and "SGG7"
1714	in column 16b, insert "SGG7"
1715	in column 16b, insert "SGG1", "SG36" and "SG49"
1716	in column 16b, insert "SGG1", "SG36" and "SG49"
1717	in column 16b, insert "SGG1", "SG36" and "SG49"
1718	in column 16b, insert "SGG1", "SG36" and "SG49"
1719 PGII	in column 16b, insert "SGG18"
1719 PGIII	in column 16b, insert "SGG18"
1722	in column 16b, insert "SGG1", "SG36" and "SG49"
1723	in column 16b, insert "SGG1", "SGG10", "SG36" and "SG49"
1724	in column 16b, insert "SGG1", "SG36" and "SG49"
1725	in column 16b, insert "SGG1", "SG36" and "SG49"
1726	in column 16b, insert "SGG1", "SG36" and "SG49"
1727	in column 16b, insert "SGG1", "SGG2", "SG36" and "SG49"
1728	in column 16b, insert "SGG1", "SG36" and "SG49"
1729	in column 16b, insert "SGG1", "SG36" and "SG49"
1730	in column 16b, insert "SGG1", "SG36" and "SG49"
1731 PG II	in column 16b, insert "SGG1", "SG36" and "SG49"
1731 PG III	in column 16b, insert "SGG1", "SG36" and "SG49"
1732	in column 16b, insert "SGG1", "SG36" and "SG49"
1733	in column 16b, insert "SGG1", "SG36" and "SG49"
1736	in column 16b, insert "SGG1", "SG36" and "SG49"
1737	in column 16b, insert "SGG1", "SGG10", "SG36" and "SG49"
1738	in column 16b, insert "SGG1", "SGG10", "SG36" and "SG49"
1739	in column 16b, insert "SGG1", "SG36" and "SG49"
1740 PG II	in column 16b, insert "SGG1", "SG36" and "SG49"
1740 PG III	in column 16b, insert "SGG1", "SG36" and "SG49"
1742	in column 16b, insert "SGG1", "SG36" and "SG49"
1743	in column 16b, insert "SGG1", "SG36" and "SG49"

1744	in column 16b, insert "SGG1", "SG36" and "SG49"
1745	in column 16b, insert "SGG1", "SG36" and "SG49"
1746	in column 16b, insert "SGG1", "SG36" and "SG49"
1747	in column 16b, insert "SGG1", "SG36" and "SG49"
1748	in column 16b, insert "SGG8"
1750	in column 16b, insert "SGG1", "SG36" and "SG49"
1751	in column 16b, insert "SGG1", "SG36" and "SG49"
1752	in column 16b, insert "SGG1", "SG36" and "SG49"
1753	in column 16b, insert "SGG1", "SG36" and "SG49"
1754	in column 16b, insert "SGG1", "SG36" and "SG49"
1755 PG II	in column 16b, insert "SGG1", "SG36" and "SG49"
1755 PG III	in column 16b, insert "SGG1", "SG36" and "SG49"
1756	in column 16b, insert "SGG1", "SG36" and "SG49"
1757 PG II	in column 16b, insert "SGG1", "SG36" and "SG49"
1757 PG III	in column 16b, insert "SGG1", "SG36" and "SG49"
1758	in column 16b, insert "SGG1", "SG36" and "SG49"
1761 PG II	in column 16b, insert "SG35"
1761 PG III	in column 16b, insert "SG35"
1762	in column 16b, insert "SGG1", "SG36" and "SG49"
1763	in column 16b, insert "SGG1", "SG36" and "SG49"
1764	in column 16b, insert "SGG1", "SG36" and "SG49"
1765	in column 16b, insert "SGG1", "SG36" and "SG49"
1766	in column 16b, insert "SGG1", "SG36" and "SG49"
1767	in column 16b, insert "SGG1", "SG36" and "SG49"
1768	in column 16b, insert "SGG1", "SG36" and "SG49"
1769	in column 16b, insert "SGG1", "SG36" and "SG49"
1770	in column 16b, insert "SGG1", "SG36" and "SG49"
1771	in column 16b, insert "SGG1", "SG36" and "SG49"
1773	in column 16b, insert "SGG1", "SG36" and "SG49"
1775	in column 16b, insert "SGG1", "SG36" and "SG49"
1776	in column 16b, insert "SGG1", "SG36" and "SG49"
1777	in column 16b, insert "SGG1a", "SG36" and "SG49"
1778	in column 16b, insert "SGG1", "SG36" and "SG49"
1779	in column 16b, insert "SGG1", "SG36" and "SG49"
1780	in column 16b, insert "SGG1", "SG36" and "SG49"
1781	in column 16b, insert "SGG1", "SG36" and "SG49"
1782	in column 16b, insert "SGG1", "SG36" and "SG49"
1783 PG II	in column 16b, insert "SG35"
1783 PG III	in column 16b, insert "SG35"
1784	in column 16b, insert "SGG1", "SG36" and "SG49"
1786	in column 16b, insert "SGG1a", "SG36" and "SG49"
1787 PG II	in column 16b, insert "SGG1a", "SG36" and "SG49"

1787 PG III	in column 16b, insert "SGG1a", "SG36" and "SG49"
1788 PG II	in column 16b, insert "SGG1a", "SG36" and "SG49"
1788 PG III	in column 16b, insert "SGG1a", "SG36" and "SG49"
1789 PG II	in column 16b, insert "SGG1a", "SG36" and "SG49"
1789 PG III	in column 16b, insert "SGG1a", "SG36" and "SG49"
1790 PG I	in column 16b, insert "SGG1a", "SG36" and "SG49"
1790 PG II	in column 16b, insert "SGG1a", "SG36" and "SG49"
1791 PG II	in column 6, insert "274" and "900"; in column 16b, insert "SGG8"
1791 PG III	in column 6, insert "274" and "900"; in column 16b, insert "SGG8"
1792	in column 16b, insert "SGG1", "SG36" and "SG49"
1793	in column 16b, insert "SGG1", "SG36" and "SG49"
1794	in column 16b, insert "SGG1", "SGG7", "SGG9", "SG36" and "SG49"
1796 PG I	in column 16b, insert "SGG1a", "SG36" and "SG49"
1796 PG II	in column 16b, insert "SGG1a", "SG36" and "SG49"
1798	in column 16b, insert "SGG1a", "SG36" and "SG49"
1799	in column 16b, insert "SGG1", "SG36" and "SG49"
1800	in column 16b, insert "SGG1", "SG36" and "SG49"
1801	in column 16b, insert "SGG1", "SG36" and "SG49"
1802	in column 16b, insert "SGG1a", "SG36" and "SG49"
1803	in column 16b, insert "SGG1", "SG36" and "SG49"
1804	in column 16b, insert "SGG1", "SG36" and "SG49"
1805	in column 16b, insert "SGG1", "SG36" and "SG49"
1806	in column 16b, insert "SGG1", "SG36" and "SG49"
1807	in column 16b, insert "SGG1", "SG36" and "SG49"
1808	in column 16b, insert "SGG1", "SG36" and "SG49"
1809	in column 16b, insert "SGG1", "SG36" and "SG49"
1810	in column 16b, insert "SGG1", "SG36" and "SG49"
1811	in column 16b, insert "SGG1", "SG36" and "SG49"
1813	in column 16b, insert "SGG18"
1814 PG II	in column 16b, insert "SGG18"
1814 PG III	in column 16b, insert "SGG18"
1815	in column 16b, insert "SGG1", "SG36" and "SG49"
1816	in column 16b, insert "SGG1", "SG36" and "SG49"
1817	in column 16b, insert "SGG1", "SG36" and "SG49"
1818	in column 16b, insert "SGG1", "SG36" and "SG49"
1819 PG II	in column 16b, insert "SGG18"
1819 PG III	in column 16b, insert "SGG18"

1823	in column 16b, insert "SGG18"
1824 PG II	in column 16b, insert "SGG18"
1824 PG III	in column 16b, insert "SGG18"
1825	in column 16b, insert "SGG18"
1826 PG I	in column 16b, insert "SGG1a", "SG36" and "SG49"
1826 PG II	in column 16b, insert "SGG1a", "SG36" and "SG49"
1827	in column 16b, insert "SGG1", "SG36" and "SG49"
1828	in column 16b, insert "SGG1", "SG36" and "SG49"
1829	in column 16b, insert "SGG1", "SG36" and "SG49"
1830	in column 16b, insert "SGG1a", "SG36" and "SG49"
1831	in column 16b, insert "SGG1a", "SG36" and "SG49"
1832	in column 16b, insert "SGG1a", "SG36" and "SG49"
1833	in column 16b, insert "SGG1", "SG36" and "SG49"
1834	in column 16b, insert "SGG1", "SG36" and "SG49"
1835 PG II	in column 16b, insert "SGG2" and "SGG18"
1835 PG III	in column 16b, insert "SGG2" and "SGG18"
1836	in column 16b, insert "SGG1", "SG36" and "SG49"
1837	in column 16b, insert "SGG1", "SG36" and "SG49"
1838	in column 16b, insert "SGG1", "SGG7", "SG36" and "SG49"
1839	in column 16b, insert "SGG1", "SG36" and "SG49"
1840	in column 16b, insert "SGG1", "SGG7", "SG36" and "SG49"
1843	in column 16b, insert "SGG2"
1846	in column 16b, insert "SGG10"
1847	in column 16b, insert "SGG18"
1848	in column 16b, insert "SGG1", "SG36" and "SG49"
1849	in column 16b, insert "SGG18"
1854	in column 16b, insert "SGG15"
1856	in column 6, insert "973"
1872	in column 16b, insert "SGG7" and "SGG9"
1873	in column 16b, insert "SGG1a", "SG36" and "SG49"
1887	in column 16b, insert "SGG10"
1888	in column 16b, insert "SGG10"
1889	in column 16b, insert "SGG6"
1891	in column 16b, insert "SGG10"
1894	in column 16b, insert "SGG7" and "SGG11"
1895	in column 16b, insert "SGG7" and "SGG11"
1897	in column 16b, insert "SGG10"
1898	in column 16b, insert "SGG1", "SG36" and "SG49"
1902	in column 16b, insert "SGG1", "SG36" and "SG49"
1905	in column 16b, insert "SGG1", "SG36" and "SG49"
1906	in column 16b, insert "SGG1a", "SG36" and "SG49"
1907	in column 16b, insert "SGG18"
1908 PGII	in column 6, insert "274" and "352"; in column 16b, insert "SGG5"
1908 PGIII	in column 6, insert "274" and "352"; in column 16b, insert "SGG5"

1922	in column 16b, insert "SGG18"
1931	in column 16b, insert "SGG7"
1935 PG I	in column 16b, insert "SGG6"
1935 PG II	in column 16b, insert "SGG6"
1935 PG III	in column 16b, insert "SGG6"
1938 PG II	in column 16b, insert "SGG1", "SG36" and "SG49"
1938 PG III	in column 16b, insert "SGG1", "SG36" and "SG49"
1939	in column 16b, insert "SGG1", "SG36" and "SG49"
1940	in column 16b, insert "SGG1", "SG36" and "SG49"
1942	in column 16b, insert "SGG2"
1945	in column 6, add "293"
1954	in column 6, insert "392"
1965	in column 6, insert "392"
1969	in column 6, insert "392"
1971	in column 6, insert "392" and "974"
1978	in column 6, insert "392"
1991	in column 16b, insert "SGG10"
2008 PG I	in column 16b, insert "SGG15"
2008 PG II	in column 16b, insert "SGG15"
2008 PG III	in column 16b, insert "SGG15"
2009	in column 16b, insert "SGG15"
2014	in column 16b, insert "SGG16"
2015	in column 16b, insert "SGG16"
2024 PG I	in column 16b, insert "SGG7" and "SGG11"
2024 PG II	in column 16b, insert "SGG7" and "SGG11"
2024 PG III	in column 16b, insert "SGG7" and "SGG11"
2025 PG I	in column 16b, insert "SGG7" and "SGG11"
2025 PG II	in column 16b, insert "SGG7" and "SGG11"
2025 PG III	in column 16b, insert "SGG7" and "SGG11"
2026 PG I	in column 16b, insert "SGG7" and "SGG11"
2026 PG II	in column 16b, insert "SGG7" and "SGG11"
2026 PG III	in column 16b, insert "SGG7" and "SGG11"
2029	in column 16b, insert "SGG18"
2030 PG I	in column 16b, insert "SGG18"

2030 PG II	in column 16b, insert "SGG18"
2030 PG III	in column 16b, insert "SGG18"
2031 PG I	in column 16b, insert "SGG1a", "SG36" and "SG49"
2031 PG II (both entries)	in column 16b, insert "SGG1a", "SG36" and "SG49"
2032	in column 16b, insert "SGG1a", "SG36" and "SG49"
2033	in column 16b, insert "SGG18"
2051	in column 16b, insert "SG35"
2067	in column 6, delete "186"; in column 16b, insert "SGG2"
2071	in column 6, delete "186"; in column 16b, insert "SGG2"
2073	in column 16b, insert "SGG2" and "SGG18"
2079	in column 16b, insert "SGG18"
2205	in column 16b, insert "SGG6"
2208	in column 16b, insert "SGG8"
2214	in column 16b, insert "SGG1", "SG36" and "SG49"
2215 (both entries)	in column 16b, insert "SGG1", "SG36" and "SG49"
2216	in column 6, insert "973"
2217	in column 6, remove "117" and insert "973"
2218	in column 16b, insert "SGG1", "SG36" and "SG49"
2225	in column 16b, insert "SGG1"
2226	in column 16b, insert "SGG1", "SG36" and "SG49"
2234	in column 16b, insert "SGG10"
2238	in column 16b, insert "SGG10"
2240	in column 16b, insert "SGG1a", "SG36" and "SG49"
2248	in column 16b, insert "SG35"
2258	in column 16b, insert "SG35"
2259	in column 16b, insert "SGG18"
2260	in column 16b, insert "SG35"
2262	in column 16b, insert "SGG1", "SG36" and "SG49"
2264	in column 16b, insert "SG35"
2266	in column 16b, insert "SG35"
2267	in column 16b, insert "SGG1", "SG36" and "SG49"
2269	in column 16b, insert "SG35"
2270	in column 16b, insert "SGG18"
2276	in column 16b, insert "SG35"
2279	in column 16b, insert "SGG10"
2280 (both entries)	in column 16b, insert "SG35"
2289	in column 16b, insert "SG35"
2291	in column 16b, insert "SGG7" and "SGG9"
2305	in column 16b, insert "SGG1", "SG36" and "SG49"
2308	in column 16b, insert "SGG1a", "SG36" and "SG49"
2316	in column 16b, insert "SGG6"
2317	in column 16b, insert "SGG6"
2318	in column 16b, insert "SGG18"
2320	in column 16b, insert "SGG18"
2321	in column 16b, insert "SGG10"

2322	in column 16b, insert "SGG10"
2326	in column 16b, insert "SG35"
2327	in column 16b, insert "SG35"
2331	in column 16b, insert "SGG1", "SGG7", "SG36" and "SG49"
2334	in column 16b, insert "SG35"
2339	in column 16b, insert "SGG10"
2341	in column 16b, insert "SGG10"
2342	in column 16b, insert "SGG10"
2343	in column 16b, insert "SGG10"
2344 PG II	in column 16b, insert "SGG10"
2344 PG III	in column 16b, insert "SGG10"
2353	in column 16b, insert "SGG1", "SG36" and "SG49"
2356	in column 16b, insert "SGG10"
2357	in column 16b, insert "SG35"
2359	in column 16b, insert "SG35"
2361	in column 16b, insert "SG35"
2362	in column 16b, insert "SGG10"
2379	in column 16b, insert "SGG18"
2382	in column 16b, insert "SGG18"
2383	in column 16b, insert "SG35"
2386	in column 16b, insert "SGG18"
2387	in column 16b, insert "SGG10"
2388	in column 16b, insert "SGG10"
2390	in column 16b, insert "SGG10"
2391	in column 16b, insert "SGG10"
2392	in column 16b, insert "SGG10"
2395	in column 16b, insert "SGG1", "SG36" and "SG49"
2399	in column 16b, insert "SGG18"
2401	in column 16b, insert "SGG18"
2407	in column 16b, insert "SGG1", "SG36" and "SG49"
2426	in column 16b, insert "SGG2"
2427 PG II	in column 16b, insert "SGG4"
2427 PG III	in column 16b, insert "SGG4"
2428 PG II	in column 16b, insert "SGG4"
2428 PG III	in column 16b, insert "SGG4"
2429 PG II	in column 16b, insert "SGG4"
2429 PG III	in column 16b, insert "SGG4"
2434	in column 16b, insert "SGG1", "SG36" and "SG49"
2435	in column 16b, insert "SGG1", "SG36" and "SG49"
2437	in column 16b, insert "SGG1", "SG36" and "SG49"
2438	in column 16b, insert "SGG1", "SG36" and "SG49"
2439	in column 2, remove the hyphen to read "SODIUM HYDROGENDIFLUORIDE"; in column 16b, insert "SGG1", "SG36" and "SG49"

2440	in column 16b, insert "SGG1", "SG36" and "SG49"
2441	in column 16b, insert "SGG7"
2442	in column 16b, insert "SGG1", "SG36" and "SG49"
2443	in column 16b, insert "SGG1", "SG36" and "SG49"
2444	in column 16b, insert "SGG1", "SG36" and "SG49"
2456	in column 16b, insert "SGG10"
2466	in column 16b, insert "SGG16"
2469	in column 16b, insert "SGG3" and "SGG7"
2475	in column 16b, insert "SGG1", "SG36" and "SG49"
2491	in column 16b, insert "SGG18"
2495	in column 16b, insert "SGG1", "SG36" and "SG49"
2496	in column 16b, insert "SGG1", "SG36" and "SG49"
2502	in column 16b, insert "SGG1", "SG36" and "SG49"
2503	in column 16b, insert "SGG1", "SG36" and "SG49"
2504	in column 16b, insert "SGG10"
2505	in column 16b, insert "SGG2"
2506	in column 16b, insert "SGG1", "SGG2", "SG36" and "SG49"
2507	in column 16b, insert "SGG1", "SG36" and "SG49"
2508	in column 16b, insert "SGG1", "SG36" and "SG49"
2509	in column 16b, insert "SGG1", "SG36" and "SG49"
2511	in column 16b, insert "SGG1", "SG36" and "SG49"
2513	in column 16b, insert "SGG1", "SG49"
2515	in column 16b, insert "SGG10"
2526	in column 16b, insert "SG35"
2531	in column 16b, insert "SGG1", "SG36" and "SG49"
2545	in column 16b, insert "SGG15"
2546 PG I	in column 16b, insert "SGG7" and "SGG15"
2546 PG II	in column 16b, insert "SGG7" and "SGG15"
2546 PG III	in column 16b, insert "SGG7" and "SGG15"
2547	in column 16b, insert "SGG16"
2554	in column 16b, insert "SGG10"
2556	in column 16a, add "SW1" and "H2"
2564 PG II	in column 16b, insert "SGG1", "SG36" and "SG49"
2564 PG III	in column 16b, insert "SGG1", "SG36" and "SG49"
2565	in column 16b, insert "SG35"
2571	in column 16b, insert "SGG1", "SG36" and "SG49"
2573	in column 16b, insert "SGG4"
2576	in column 16b, insert "SGG1", "SG36" and "SG49"
2577	in column 16b, insert "SGG1", "SG36" and "SG49"
2578	in column 16b, insert "SGG1", "SG36" and "SG49"
2579	in column 16b, insert "SGG18"
2580	in column 16b, insert "SGG1", "SG36" and "SG49"
2581	in column 16b, insert "SGG1", "SG36" and "SG49"
2582	in column 16b, insert "SGG1", "SG36" and "SG49"
2583	in column 16b, insert "SGG1", "SG36" and "SG49"
2584	in column 16b, insert "SGG1", "SG36" and "SG49"
2585	in column 16b, insert "SGG1", "SG36" and "SG49"

2586	in column 16b, insert "SGG1", "SG36" and "SG49"
2604	in column 16b, insert "SGG1", "SG36" and "SG49"
2610	in column 16b, insert "SG35"
2619	in column 16b, insert "SG35"
2626	in column 16b, insert "SGG1" and "SG36"
2627	in column 16b, insert "SGG12"
2642	in column 16b, insert "SGG1", "SG36" and "SG49"
2644	in column 16b, insert "SGG10"
2646	in column 16b, insert "SGG10"
2664	in column 16b, insert "SGG10"
2670	in column 16b, insert "SGG1", "SG36" and "SG49"
2671	in column 16b, insert "SGG18"
2672	in column 16b, insert "SGG18"
2677 PG II	in column 16b, insert "SGG18"
2677 PG III	in column 16b, insert "SGG18"
2678	in column 16b, insert "SGG18"
2679 PG II	in column 16b, insert "SGG18"
2679 PG III	in column 16b, insert "SGG18"
2680	in column 16b, insert "SGG18"
2681 PG II	in column 16b, insert "SGG18"
2681 PG III	in column 16b, insert "SGG18"
2682	in column 16b, insert "SGG18"
2683	in column 16b, insert "SGG2" and "SGG18"
2684	in column 16b, insert "SG35"
2685	in column 16b, insert "SG35"
2686	in column 16b, insert "SG35"
2687	in column 16b, insert "SGG2"
2688	in column 16b, insert "SGG10"
2691	in column 16b, insert "SGG1" and "SG49"
2692	in column 16b, insert "SGG1", "SG36" and "SG49"
2698	in column 16b, insert "SGG1", "SG36" and "SG49"; in column 6, insert "973"
2699	in column 16b, insert "SGG1", "SG36" and "SG49"
2714	in column 16b, insert "SGG7"
2719	in column 16b, insert "SGG3"
2721	in column 16b, insert "SGG4"
2723	in column 16b, insert "SGG4"
2726	in column 16b, insert "SGG12"
2733 PG I	in column 16b, insert "SGG18"
2733 PG II	in column 16b, insert "SGG18"
2733 PG III	in column 16b, insert "SGG18"
2734 PG I	in column 16b, insert "SGG18"

2734 PG II	in column 16b, insert "SGG18"
2735 PG I	in column 16b, insert "SGG18"
2735 PG II	in column 16b, insert "SGG18"
2735 PG III	in column 16b, insert "SGG18"
2739	in column 16b, insert "SGG1", "SG36" and "SG49"
2740	in column 16b, insert "SGG1", "SG36" and "SG49"
2741	in column 16b, insert "SGG8"
2742	in column 16b, insert "SGG1", "SG36" and "SG49"
2743	in column 16b, insert "SGG1", "SG36" and "SG49"
2744	in column 16b, insert "SGG1", "SG36" and "SG49"
2745	in column 16b, insert "SGG1", "SG36" and "SG49"
2746	in column 16b, insert "SGG1", "SG36" and "SG49"
2748	in column 16b, insert "SGG1", "SG36" and "SG49"
2751	in column 16b, insert "SGG1", "SG36" and "SG49"
2777 PG I	in column 16b, insert "SGG7" and "SGG11"
2777 PG II	in column 16b, insert "SGG7" and "SGG11"
2777 PG III	in column 16b, insert "SGG7" and "SGG11"
2778 PG I	in column 16b, insert "SGG7" and "SGG11"
2778 PG II	in column 16b, insert "SGG7" and "SGG11"
2789	in column 16b, insert "SGG1", "SG36" and "SG49"
2790 PG II	in column 16b, insert "SGG1", "SG36" and "SG49"
2790 PG III	in column 16b, insert "SGG1", "SG36" and "SG49"
2794	in column 16b, insert "SGG1", "SG36" and "SG49"
2795	in column 16b, insert "SGG18"
2796	in column 16b, insert "SGG1a", "SG36" and "SG49"
2797	in column 16b, insert "SGG18"
2798	in column 16b, insert "SGG1", "SG36" and "SG49"
2799	in column 16b, insert "SGG1", "SG36" and "SG49"
2800	in column 6, delete "29"
2802	in column 16b, insert "SGG1", "SG36" and "SG49"
2809	in column 16b, insert "SGG7" and "SGG11"
2815	in column 16b, insert "SG35"
2817 PG II	in column 16b, insert "SGG1", "SGG2", "SG36" and "SG49"
2817 PG III	in column 16b, insert "SGG1", "SGG2", "SG36" and "SG49"
2818 PG II	in column 16b, insert "SGG2" and "SGG18"
2818 PG III	in column 16b, insert "SGG2" and "SGG18"
2819	in column 16b, insert "SGG1", "SG36" and "SG49"

2820	in column 16b, insert "SGG1", "SG36" and "SG49"
2823	in column 16b, insert "SGG1", "SG36" and "SG49"
2826	in column 16b, insert "SGG1", "SG36" and "SG49"
2829	in column 16b, insert "SGG1", "SG36" and "SG49"
2831	in column 16b, insert "SGG10"
2834	in column 16b, insert "SGG1", "SG36" and "SG49"
2841	in column 16b, insert "SG35"
2850	in column 17, at the end, add "1-dodecene is not marine pollutant."
2851	in column 16b, insert "SGG1", "SG36" and "SG49"
2854	in column 16b, insert "SGG2"
2855	in column 16b, insert "SGG7"
2859	in column 16b, insert "SGG2"
2861	in column 16b, insert "SGG2"
2863	in column 16b, insert "SGG2"
2865	in column 16b, insert "SGG1", "SG35", "SG36" and "SG49"
2869 PG II	in column 16b, insert "SGG1", "SGG7", "SG36" and "SG49"
2869 PG III	in column 16b, insert "SGG1", "SGG7", "SG36" and "SG49"
2872 PG II	in column 16b, insert "SGG10"
2872 PG III	in column 16b, insert "SGG10"
2878	in column 16b, insert "SGG7" and "SGG15"
2879	in column 16b, insert "SGG1", "SG36" and "SG49"
2880 PG II	in column 16b, insert "SGG8"
2880 PG III	in column 16b, insert "SGG8"
2881 PG I	in column 16b, insert "SGG7" and "SGG15"
2881 PG II	in column 16b, insert "SGG7" and "SGG15"
2881 PG III	in column 16b, insert "SGG7" and "SGG15"
2945	in column 16b, insert "SG35"
2949	in column 16b, insert "SGG18"
2950	in column 16b, insert "SGG15"
2967	in column 16b, insert "SGG1", "SG36" and "SG49"
2977	in column 16b, insert "SG17", "SG76" and "SG78"
2978	in column 16b, insert "SG17", "SG76" and "SG78"
2985	in column 16b, insert "SGG1", "SG36" and "SG49"
2986	in column 16b, insert "SGG1", "SG36" and "SG49"
2987	in column 16b, insert "SGG1", "SG36" and "SG49"
2988	in column 16b, insert "SGG1", "SG36" and "SG49"
2989 PG II	in column 16b, insert "SGG7" and "SGG9"
2989 PG III	in column 16b, insert "SGG7" and "SGG9"
3011 PG I	in column 16b, insert "SGG7" and "SGG11"

3011 PG II	in column 16b, insert "SGG7" and "SGG11"
3011 PG III	in column 16b, insert "SGG7" and "SGG11"
3012 PG I	in column 16b, insert "SGG7" and "SGG11"
3012 PG II	in column 16b, insert "SGG7" and "SGG11"
3012 PG III	in column 16b, insert "SGG7" and "SGG11"
3028	in column 16b, insert "SGG18"
3055	in column 16b, insert "SG35"
3073	in column 16b, insert "SGG18"
3078	in column 16b, insert "SGG15"
3089 PG II	in column 16b, insert "SGG7" and "SGG15"
3089 PG III	in column 16b, insert "SGG7" and "SGG15"
3090	in column 6, insert "387"; in column 8, insert "P911", "LP905" and "LP906"
3091	in column 6, insert "387"; in column 8, insert "P911", "LP905" and "LP906"
3101	in column 16b, insert "SG72"
3102	in column 16b, insert "SG72"
3103	in column 16b, insert "SG72"
3104	in column 16b, insert "SG72"
3106	in column 16b, insert "SG72"
3108	in column 16b, insert "SG72"
3110	in column 16b, insert "SG72"
3111	in column 16b, insert "SG72"
3112	in column 16b, insert "SG72"
3113	in column 16b, insert "SG72"
3114	in column 16b, insert "SG72"
3115	in column 16b, insert "SG72"
3116	in column 16b, insert "SG72"
3117	in column 16b, insert "SG72"
3118	in column 16b, insert "SG72"
3119	in column 16b, insert "SG72"
3120	in column 16b, insert "SG72"
3149	in column 16b, insert "SGG16"
3166	in column 6, delete "312", delete "380", delete "385" and insert "388"
3170 PG II	in column 16b, insert "SGG15"
3170 PG III	in column 16b, insert "SGG15"
3171	in column 6, delete "240" and insert "388"
3174	in column 16b, insert "SGG7"
3181 PG II	in column 16b, insert "SGG7"
3181 PG III	in column 16b, insert "SGG7"
3189 PG II	in column 16b, insert "SGG7" and "SGG15"

3189 PG III	in column 16b, insert "SGG7" and "SGG15"
3211 PGII	in column 16b, insert "SGG13"
3211 PGIII	in column 16b, insert "SGG13"
3212	in column 16b, insert "SGG8"
3213 PG II	in column 16b, insert "SGG3"
3213 PG III	in column 16b, insert "SGG3"
3214	in column 16b, insert "SGG14"
3219 PG II	in column 16b, insert "SGG12"
3219 PG III	in column 16b, insert "SGG12"
3223	in column 9, add "PP94 PP95"
3224	in column 9, add "PP94 PP95"
3246	in column 16b, insert "SGG1", "SG36" and "SG49"
3250	in column 16b, insert "SGG1", "SG36" and "SG49"
3253	in column 16b, insert "SGG18"
3255	in column 16b, insert "SGG8"
3259 PG I	in column 16b, insert "SGG18"
3259 PG II	in column 16b, insert "SGG18"
3259 PG III	in column 16b, insert "SGG18"
3260 PG I	in column 16b, insert "SGG1", "SG36" and "SG49"
3260 PG II	in column 16b, insert "SGG1", "SG36" and "SG49"
3260 PG III	in column 16b, insert "SGG1", "SG36" and "SG49"
3261 PG I	in column 16b, insert "SGG1", "SG36" and "SG49"
3261 PG II	in column 16b, insert "SGG1", "SG36" and "SG49"
3261 PG III	in column 16b, insert "SGG1", "SG36" and "SG49"
3262 PG I	in column 16b, insert "SGG18"
3262 PG II	in column 16b, insert "SGG18"
3262 PG III	in column 16b, insert "SGG18"
3263 PG I	in column 16b, insert "SGG18"
3263 PG II	in column 16b, insert "SGG18"
3263 PG III	in column 16b, insert "SGG18"

3264 PG I	in column 16b, insert "SGG1", "SG36" and "SG49"
3264 PG II	in column 16b, insert "SGG1", "SG36" and "SG49"
3264 PG III	in column 16b, insert "SGG1", "SG36" and "SG49"
3265 PG I	in column 16b, insert "SGG1", "SG36" and "SG49"
3265 PG II	in column 16b, insert "SGG1", "SG36" and "SG49"
3265 PG III	in column 16b, insert "SGG1", "SG36" and "SG49"
3266 PG I	in column 16b, insert "SGG18"
3266 PG II	in column 16b, insert "SGG18"
3266 PG III	in column 16b, insert "SGG18"
3267 PG I	in column 16b, insert "SGG18"
3267 PG II	in column 16b, insert "SGG18"
3267 PG III	in column 16b, insert "SGG18"
3277	in column 16b, insert "SGG1", "SG36" and "SG49"
3293	in column 16b, insert "SGG18"
3302	in column 2, at the end of the designation, add ", STABILIZED"; in column 6, add "386"
3316 PG II	in column 5, delete "II"
3316 PG III	delete this entire entry
3318	in column 16b, insert "SGG18"
3320 PG II	in column 16b, insert "SGG18"
3320 PG III	in column 16b, insert "SGG18"
3332	in column 15, replace "S-S" with " <u>S-S</u> "
3333	in column 15, replace "S-S" with " <u>S-S</u> "
3360	in column 6, insert "973"
3361	in column 16b, insert "SGG1", "SG36" and "SG49"
3362	in column 16b, insert "SGG1", "SG36" and "SG49"
3375	in column 16b, insert "SGG2"
3377	in column 16b, insert "SGG16"
3378 PG II	in column 16b, insert "SGG16"
3378 PG III	in column 16b, insert "SGG16"
3401	in column 16b, insert "SGG7" and "SGG11"
3402	in column 16b, insert "SGG7" and "SGG11"
3405 PG II	in column 16b, insert "SGG4"

3405 PG III	in column 16b, insert "SGG4"
3406 PG II	in column 16b, insert "SGG13"
3406 PG III	in column 16b, insert "SGG13"
3407 PG II	in column 16b, insert "SGG4"
3407 PG III	in column 16b, insert "SGG4"
3408 PG II	in column 16b, insert "SGG7", "SGG9" and "SGG13"
3408 PG III	in column 16b, insert "SGG7", "SGG9" and "SGG13"
3412 PG II	in column 16b, insert "SGG1", "SG36" and "SG49"
3412 PG III	in column 16b, insert "SGG1", "SG36" and "SG49"
3413 PG I	in column 16b, insert "SGG6"
3413 PG II	in column 16b, insert "SGG6"
3413 PG III	in column 16b, insert "SGG6"
3414 PG I	in column 16b, insert "SGG6"
3414 PG II	in column 16b, insert "SGG6"
3414 PG III	in column 16b, insert "SGG6"
3419	in column 16b, insert "SGG1", "SG36" and "SG49"
3420	in column 16b, insert "SGG1", "SG36" and "SG49"
3421 PG II	in column 16b, insert "SGG1", "SG36" and "SG49"
3421 PG III	in column 16b, insert "SGG1", "SG36" and "SG49"
3423	in column 16b, insert "SGG2" and "SGG18"
3424 PG II	in column 16b, insert "SGG2"
3424 PG III	in column 16b, insert "SGG2"
3425	in column 16b, insert "SGG1", "SG36" and "SG49"
3449	in column 16b, insert "SGG6"
3453	in column 16b, insert "SGG1", "SG36" and "SG49"
3456	in column 16b, insert "SGG1", "SG36" and "SG49"
3463	in column 16b, insert "SGG1", "SG36" and "SG49"
3472	in column 16b, insert "SGG1", "SG36" and "SG49"
3480	in column 6, insert "387"; in column 8, insert "P911", "LP905" and "LP906"
3481	in column 6, insert "387"; in column 8, insert "P911", "LP905" and "LP906"
3483	in column 16b, insert "SGG7" and "SGG9"
3484	in column 16b, insert "SGG18"
3485	in column 16b, insert "SGG8"
3486	in column 16b, insert "SGG8"

3487 PG II	in column 16b, insert "SGG8"
3487 PG III	in column 16b, insert "SGG8"
3496	in column 17, replace the sentence by "Nickel-metal hydride cells or batteries packed with or contained in equipment and nickel-metal hydride button are not subject to the provisions of this Code."
3498	in column 16b, insert "SGG1", "SG36" and "SG49"
3507	in column 16b, insert "SG77"

Add the following new entries to the Dangerous Goods List:

(1)	(2)	(3)	(4)	(5)	(6)	(7a)	(7b)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16a)	(16b)	(17)
3535	TOXIC SOLID, FLAMMABLE, INORGANIC, N.O.S.	6.1	4.1	I	274	0	E5	P002	-	IBC99	-	-	T6	TP33	F-A, S-G	Category B	-	Toxic if swallowed, by skin contact or by dust inhalation.
3535	TOXIC SOLID, FLAMMABLE, INORGANIC, N.O.S.	6.1	4.1	II	274	500 g	E4	P002	-	IBC08	B4 B21	-	T3	TP33	F-A, S-G	Category B	-	See entry above.
3536	LITHIUM BATTERIES INSTALLED IN CARGO TRANSPORT UNIT lithium ion batteries or lithium metal batteries	9	-	-	389	0	E0	-	-	-	-	-	-	-	F-A, S-I	Category A	-	Cargo transport unit containing lithium metal or lithium ion batteries which is designed to serve as mobile power supply unit.
3537	ARTICLES CONTAINING FLAMMABLE GAS, N.O.S.	2.1	See 2.0.6.6	-	274 391	0	E0	P006 LP03	-	-	-	-	-	-	F-D, <u>S-U</u>	Category D SW2	-	-
3538	ARTICLES CONTAINING NON-FLAMMABLE, NON-TOXIC GAS, N.O.S.	2.2	See 2.0.6.6	-	274 391	0	E0	P006 LP03	-	-	-	-	-	-	F-C, <u>S-V</u>	Category A	-	-
3539	ARTICLES CONTAINING TOXIC GAS, N.O.S.	2.3	See 2.0.6.6	-	274 391	0	E0	-	-	-	-	-	-	-	F-C, <u>S-U</u>	-	-	-
3540	ARTICLES CONTAINING FLAMMABLE LIQUID, N.O.S.	3	See 2.0.6.6	-	274 391	0	E0	P006 LP03	-	-	-	-	-	-	F-E, <u>S-D</u>	Category B	-	-
3541	ARTICLES CONTAINING FLAMMABLE SOLID, N.O.S.	4.1	See 2.0.6.6	-	274 391	0	E0	P006 LP03	-	-	-	-	-	-	F-A, <u>S-G</u>	Category B	-	-
3542	ARTICLES CONTAINING A SUBSTANCE LIABLE TO SPONTANEOUS COMBUSTION, N.O.S.	4.2	See 2.0.6.6	-	274 391	0	E0	-	-	-	-	-	-	-	*	-	-	* F-G, <u>S-M</u> for pyrophoric substances, F-A, <u>S-J</u> for self-heating substances.
3543	ARTICLES CONTAINING A SUBSTANCE WHICH EMITS FLAMMABLE GAS IN CONTACT WITH WATER, N.O.S.	4.3	See 2.0.6.6	-	274 391	0	E0	-	-	-	-	-	-	-	F-G, <u>S-N</u>	-	-	-
3544	ARTICLES CONTAINING OXIDIZING SUBSTANCE, N.O.S.	5.1	See 2.0.6.6	-	274 391	0	E0	-	-	-	-	-	-	-	F-A, <u>S-Q</u>	-	-	-

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(1)	(2)	(3)	(4)	(5)	(6)	(7a)	(7b)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16a)	(16b)	(17)
3545	ARTICLES CONTAINING ORGANIC PEROXIDE, N.O.S.	5.2	See 2.0.6.6	-	274 391	0	E0	-	-	-	-	-	-	-	F-J, <u>S-R</u>	-	-	-
3546	ARTICLES CONTAINING TOXIC SUBSTANCE, N.O.S.	6.1	See 2.0.6.6	-	274 391	0	E0	P006 LP03	-	-	-	-	-	-	F-A, <u>S-A</u>	Category B SW2 *	-	Toxic if swallowed, by skin contact or by dust inhalation. *When competent authority approval is required by SP391, the stowage and handling will be specified by the competent authority.
3547	ARTICLES CONTAINING CORROSIVE SUBSTANCE, N.O.S.	8	See 2.0.6.6	-	274 391	0	E0	P006 LP03	-	-	-	-	-	-	F-A, <u>S-B</u>	Category B SW2	-	Causes burns to skin, eyes and mucous membranes.
3548	ARTICLES CONTAINING MISCELLANEOUS DANGEROUS GOODS, N.O.S.	9	See 2.0.6.6	-	274 391	0	E0	P006 LP03	-	-	-	-	-	-	F-A, <u>S-P</u>	Category A	-	-

Chapter 3.3 Special provisions applicable to certain substances, materials or articles

3.3.1 In the third sentence, replace "such as "Damaged Lithium Batteries"" with "such as "LITHIUM BATTERIES FOR DISPOSAL"".

SP 29 Amend to read as follows:

"29 The packages, including bales, are exempt from labelling provided that they are marked with the appropriate class (e.g. "class 4.2")."

SP 63 In the introductory text, replace "risks" with "hazard(s)". In .5 replace "risk" with "hazard". In .7 replace "risk" with "hazard" and replace "risk(s)" with "hazard(s)".

SP 122 Replace "risk(s)" with "hazard(s)".

SP 133 Replace "risk" with "hazard".

SP 172 Replace "risk(s)" with "hazard(s)". In .1 and .2, replace "risk" with "hazard". In .3, replace "risk(s)" with "hazard(s)".

SP 181 Replace "risk" with "hazard".

SP 186 is deleted.

SP 188 In sub-paragraph .3, replace "2.9.4.1 and 2.9.4.5" with "2.9.4.1, 2.9.4.5, 2.9.4.6 if applicable and 2.9.4.7"

In sub-paragraph .4, replace "protection against contact with conductive materials" with "protection against contact with electrically conductive material". At the end of .4, replace "." with ";".

In sub-paragraph .5, at the end, add the following two new sentences:

"When packages are placed in an overpack, the lithium battery mark shall either be clearly visible or be reproduced on the outside of the overpack and the overpack shall be marked with the word "OVERPACK". The lettering of the "OVERPACK" mark shall be at least 12 mm high;"

In sub-paragraph .6, rename the existing note as note 1 and add the following new note 2:

Note 2: Packages containing lithium batteries packed in conformity with the provisions of part 4, chapter 11, packing instructions 965 or 968, Section IB of the ICAO Technical Instructions for the Safe Transport of Dangerous Goods by Air that bear the mark as shown in 5.2.1.10 (lithium battery mark) and the label shown in 5.2.2.2.2, Model No. 9A shall be deemed to meet the provisions of this special provision."

In the first paragraph after sub-paragraph .8, at the end, add the following sentence:

"As used in this special provision "equipment" means apparatus for which the lithium cells or batteries will provide electrical power for its operation."

SP 193 Amend to read as follows:

"193 This entry may only be used for ammonium nitrate based compound fertilizers. They shall be classified in accordance with the procedure as set out in the Manual of Tests and Criteria, part III, section 39. "

SP 204 Replace "risk" with "hazard" twice and add the word "hazard" between "subsidiary" and "label" in the last sentence.

SP 240 is deleted.

SP 251 In the first paragraph, replace the last sentence with:

"Such kits shall only contain dangerous goods that are permitted as:

- .1 excepted quantities not exceeding the quantity indicated by the Code in column 7b of the Dangerous Goods List of chapter 3.2, provided that the net quantity per inner packaging and net quantity per package are as prescribed in 3.5.1.2 and 3.5.1.3; or
- .2 limited quantities as indicated in column 7a of the Dangerous Goods List of chapter 3.2, provided that the net quantity per inner packaging does not exceed 250 ml or 250 g."

In the second paragraph, delete the last sentence.

In the third paragraph, insert a new first sentence to read as follows:

"For the purposes of completion of the dangerous goods transport document as set out in 5.4.1.4.1, the packing group shown on the document shall be the most stringent packing group assigned to any individual substance in the kit."

SP 271 Replace "risk" with "hazard".

SP 290 In sub-paragraph .2, replace "risk" with "hazard".

SP 293 In sub-paragraph .2, after "Safety matches are", insert "matches that".

SP 296 Replace "risk" with "hazard".

SP 301 At the beginning, replace "substance" with "goods". Amend the fifth and sixth sentences to read as follows:

"If the machinery or apparatus contains more than one item of dangerous goods, the individual dangerous goods shall be enclosed to prevent them reacting dangerously with one another during transport (see 4.1.1.6). When it is required to ensure liquid dangerous goods remain in their intended orientation, orientation arrows shall be displayed on at least two opposite vertical sides with the arrows pointing in the correct direction in accordance with 5.2.1.7.1."

Delete the last sentence.

SP 307 Amend to read as follows:

"307 This entry may only be used for ammonium nitrate based fertilizers. They shall be classified in accordance with the procedure as set out in the Manual of Tests and Criteria, part III, section 39."

SP 308 Amend to read as follows:

"308* Stabilization of fish meal shall be achieved to prevent spontaneous combustion by effective application of ethoxyquin, BHT (butylated hydroxytoluene) or tocopherols (also used in a blend with rosemary extract) at the time of production. The said application shall occur within twelve months prior to shipment. Fish scrap or fish meal shall contain at least 50 ppm (mg/kg) of ethoxyquin, 100 ppm (mg/kg) of BHT or 250 ppm (mg/kg) of tocopherol based antioxidant at the time of shipment."

and add a corresponding footnote * as follows:

** For the transport of fish meal in bulk, see the IMSBC Code."

SP 310 In the first paragraph, replace "cells and batteries" with "cells or batteries", twice, and add "or LP905 of 4.1.4.3, as applicable" at the end.

SP 312 is deleted.

SP 362 In sub-paragraph .2 and .3, replace "risk" with "hazard".

SP 363 Add the following new introductory sentence:

"This entry may only be used when the conditions of this special provision are met. No other provisions of this Code apply, except for special provision 972, chapter 5.4, part 7 and columns 16a and 16b of the Dangerous Goods List."

Replace the existing sub-paragraph .7 with the following:

".7 The engine or machinery, including the means of containment containing dangerous goods, shall be in compliance with the construction requirements specified by the competent authority.

.8 Any valves or openings (e.g. venting devices) shall be closed during transport.

.9 The engines or machinery shall be oriented to prevent inadvertent leakage of dangerous goods and secured by means capable of restraining the engines or machinery to prevent any movement during transport which would change the orientation or cause them to be damaged.

.10 For UN 3528 and UN 3530:

- where the engine or machinery contains more than 60 L of liquid fuel and has a capacity of not more than 450 L, the labelling requirements of 5.2.2 shall apply;

- where the engine or machinery contains more than 60 L of liquid fuel and has a capacity of more than 450 L but not more than 3,000 L, it shall be labelled on two opposing sides in accordance with 5.2.2;
- where the engine or machinery contains more than 60 L of liquid fuel and has a capacity of more than 3,000 L, it shall be placarded on two opposing sides in accordance with 5.3.1.1.2; and
- in addition to the above requirements, for UN 3530, where the engine or machinery contains more than 60 L of liquid fuel and the capacity does not exceed 3,000 L, the marking requirements of 5.2.1.6 apply; and where the engine or machinery contains more than 60 L of liquid fuel and the capacity exceeds 3,000 L, the marking requirements of 5.3.2.3.2 apply.

.11 For UN 3529:

- where the fuel tank of the engine or machinery has a water capacity of not more than 450 L, the labelling requirements of 5.2.2 shall apply;
- where the fuel tank of the engine or machinery has a water capacity of more than 450 L but not more than 1,000 L, it shall be labelled on two opposing sides in accordance with 5.2.2; and
- where the fuel tank of the engine or machinery has a water capacity of more than 1,000 L, it shall be placarded on two opposing sides in accordance with 5.3.1.1.2.

.12 The transport document shall contain the following additional statement "Transport in accordance with special provision 363".

.13 The requirements specified in packing instruction P005 of 4.1.4.1 shall be met."

SP 369 In the first paragraph, replace "risks" with "hazards". In the third paragraph, replace "risk" with "hazard".

SP 376 Amend the text after the third paragraph to read as follows:

"Cells and batteries shall be packed in accordance with packing instructions P908 of 4.1.4.1 or LP904 of 4.1.4.3, as applicable.

Cells and batteries identified as damaged or defective and liable to rapidly disassemble, dangerously react, produce a flame or a dangerous evolution of heat or a dangerous emission of toxic, corrosive or flammable gases or vapours under normal conditions of transport shall be packed and transported in accordance with packing instruction P911 of 4.1.4.1 or LP906 of 4.1.4.3, as applicable. Alternative packing and/or transport conditions may be authorized by the competent authority.

Packages shall be marked "DAMAGED/DEFECTIVE" in addition to the proper shipping name, as stated in 5.2.1.

The transport document shall include the following statement "Transport in accordance with special provision 376".

If applicable, a copy of the competent authority approval shall accompany the transport."

SP 377 At the end, add a new paragraph as follows:

"The transport document shall include the following statement: "Transport in accordance with special provision 377"."

SP 380 is deleted.

SP 384 Delete the note.

SP 385 is deleted.

SP 907 Replace the terms "which must exceed 100 mg/kg" with "see special provision 308".

SP 943 Replace "subsidiary risk" with "subsidiary hazard".

SP 945 is deleted.

SP 959 Replace "subsidiary risk(s)" with "subsidiary hazard(s)".

SP 961 In sub-paragraph .1, replace "2.9.4.1 does" with "2.9.4.1 and 2.9.4.7 do".

SP 962 In sub-paragraph .4, replace "2.9.4.1 does" with "2.9.4.1 and 2.9.4.7 do".

SP 963 Replace the first sentence with the following:

"Nickel-metal hydride cells or batteries packed with or contained in equipment and nickel-metal hydride button cells are not subject to the provisions of this Code."

SP 972 Replace "2.9.4.1 does" with "2.9.4.1 and 2.9.4.7 do".

Add the following new special provisions:

"387 Lithium batteries in conformity with 2.9.4.6 containing both primary lithium metal cells and rechargeable lithium ion cells shall be assigned to UN 3090 or 3091 as appropriate. When such batteries are transported in accordance with special provision 188, the total lithium content of all lithium metal cells contained in the battery shall not exceed 1.5 g and the total capacity of all lithium ion cells contained in the battery shall not exceed 10 Wh."

"388 UN 3166 entries apply to vehicles powered by flammable liquid or gas internal combustion engines or fuel cells.

Vehicles powered by a fuel cell engine shall be assigned to the entries UN 3166 VEHICLE, FUEL CELL, FLAMMABLE GAS POWERED or UN 3166 VEHICLE, FUEL CELL, FLAMMABLE LIQUID POWERED, as appropriate. These entries include hybrid electric vehicles powered by both a fuel cell and an internal combustion engine with wet batteries, sodium batteries, lithium metal batteries or lithium ion batteries, transported with the battery(ies) installed.

Other vehicles which contain an internal combustion engine shall be assigned to the entries UN 3166 VEHICLE, FLAMMABLE GAS POWERED or UN 3166 VEHICLE, FLAMMABLE LIQUID POWERED, as appropriate. These entries include hybrid electric vehicles powered by both an internal combustion engine and wet batteries, sodium batteries, lithium metal batteries or lithium ion batteries, transported with the battery(ies) installed. If a vehicle is powered by a flammable liquid and a flammable gas internal combustion engine, it shall be assigned to UN 3166 VEHICLE, FLAMMABLE GAS POWERED.

Entry UN 3171 only applies to vehicles powered by wet batteries, sodium batteries, lithium metal batteries or lithium ion batteries and equipment powered by wet batteries or sodium batteries transported with these batteries installed.

For the purpose of this special provision, vehicles are self-propelled apparatus designed to carry one or more persons or goods. Examples of such vehicles are cars, motorcycles, scooters, three- and four-wheeled vehicles or motorcycles, trucks, locomotives, bicycles (pedal cycles with a motor) and other vehicles of this type (e.g. self-balancing vehicles or vehicles not equipped with at least one seating position), wheelchairs, lawn tractors, self-propelled farming and construction equipment, boats and aircraft. This includes vehicles transported in a packaging. In this case some parts of the vehicle may be detached from its frame to fit into the packaging.

Examples of equipment are lawnmowers, cleaning machines or model boats and model aircraft. Equipment powered by lithium metal batteries or lithium ion batteries shall be assigned to the entries UN 3091 LITHIUM METAL BATTERIES CONTAINED IN EQUIPMENT or UN 3091 LITHIUM METAL BATTERIES PACKED WITH EQUIPMENT or UN 3481 LITHIUM ION BATTERIES CONTAINED IN EQUIPMENT or UN 3481 LITHIUM ION BATTERIES PACKED WITH EQUIPMENT, as appropriate.

Dangerous goods, such as batteries, airbags, fire extinguishers, compressed gas accumulators, safety devices and other integral components of the vehicle that are necessary for the operation of the vehicle or for the safety of its operator or passengers, shall be securely installed in the vehicle and are not otherwise subject to this Code."

"389 This entry only applies to lithium ion batteries or lithium metal batteries installed in a cargo transport unit and designed only to provide power external to the cargo transport unit. The lithium batteries shall meet the requirements of 2.9.4.1 to .7 and contain the necessary systems to prevent overcharge and overdischarge between the batteries.

The batteries shall be securely attached to the interior structure of the cargo transport unit (e.g. by means of placement in racks, cabinets, etc.) in such a manner as to prevent short circuits, accidental operation, and significant movement relative to the cargo transport unit under the shocks, loadings and vibrations normally incident to transport. Dangerous goods necessary for the safe and proper operation of the cargo transport unit (e.g. fire-extinguishing systems and air-conditioning systems), shall be properly secured to or installed in the cargo transport unit and are not otherwise subject to this Code.

Dangerous goods not necessary for the safe and proper operation of the cargo transport unit shall not be transported within the cargo transport unit.

The batteries inside the cargo transport unit are not subject to marking or labelling requirements. The cargo transport unit shall display the UN number in accordance with 5.3.2.1.2 and be placarded on two opposing sides in accordance with 5.3.1.1.2."

"391 Articles containing dangerous goods of class 2.3, or class 4.2, or class 4.3, or class 5.1, or class 5.2 or class 6.1 for substances of inhalation toxicity requiring packing group I and articles containing more than one of the hazards listed in 2.0.3.4.2 to 2.0.3.4.4 shall be transported under conditions approved by the competent authority."

"392 For the transport of fuel gas containment systems designed and approved to be fitted in motor vehicles containing this gas, the provisions of subsection 4.1.4.1 and chapter 6.2 of this Code need not be applied when transported for disposal, recycling, repair, inspection, maintenance or from where they are manufactured to a vehicle assembly plant, provided the following conditions are met:

.1 the fuel gas containment systems shall meet the requirements of the standards or regulations for fuel tanks for vehicles, as applicable. Examples of applicable standards and regulations are:

LPG tanks	
ECE Regulation No. 67 Revision 2	Uniform provisions concerning: I. Approval of specific equipment of vehicles of category M and N using liquefied petroleum gases in their propulsion system; II. Approval of vehicles of category M and N fitted with specific equipment for the use of liquefied petroleum gases in their propulsion system with regard to the installation of such equipment
ECE Regulation No. 115	Uniform provisions concerning the approval of: I. Specific LPG (liquefied petroleum gases) retrofit systems to be installed in motor vehicles for the use of LPG in their propulsion systems; II. Specific CNG (compressed natural gas) retrofit systems to be installed in motor vehicles for the use of CNG in their propulsion system
CNG tanks	
ECE Regulation No. 110	Uniform provisions concerning: I. Specific components of motor vehicles using compressed natural gas (CNG) and/or liquefied natural gas (LNG) in their propulsion system; II. Vehicles with regard to the installation of specific components of an approved type for the use of compressed natural gas (CNG) and/or liquefied natural gas (LNG) in their propulsion system
ECE Regulation No. 115	(Uniform provisions concerning the approval of I. Specific LPG (liquefied petroleum gases) retrofit systems to be installed in motor vehicles for the use of LPG in their propulsion systems; II. Specific CNG (compressed natural gas) retrofit systems to be installed in motor vehicles for the use of CNG in their propulsion system)

ISO 11439:2013	Gas cylinders – High pressure cylinders for the onboard storage of natural gas as a fuel for automotive vehicles
ISO 15500-Series	ISO 15500: Road vehicles – Compressed natural gas (CNG) fuel system components – several parts as applicable
ANSI NGV 2	Compressed natural gas vehicle fuel containers
CSA B51 Part 2: 2014	Boiler, pressure vessel, and pressure piping code Part 2 Requirements for high-pressure cylinders for onboard storage of fuels for automotive vehicles
Hydrogen pressure tanks	
Global Technical Regulation (GTR) No. 13	Global technical regulation on hydrogen and fuel cell vehicles (ECE/TRANS/180/Add.13)
ISO/TS 15869:2009	Gaseous hydrogen and hydrogen blends – Land vehicle fuel tanks
Regulation (EC) No.79/2009	Regulation (EC) No. 79/2009 of the European Parliament and of the Council of 14 January 2009 on type approval of hydrogen-powered motor vehicles, and amending Directive 2007/46/EC
Regulation (EU) No. 406/2010	Commission Regulation (EU) No. 406/2010 of 26 April 2010 implementing Regulation (EC) No. 79/2009 of the European Parliament and of the Council on type-approval of hydrogen-powered motor vehicles
ECE Regulation No. 134	Hydrogen and fuel cell vehicles (HFCV)
CSA B51 Part 2: 2014	Boiler, pressure vessel, and pressure piping code Part 2 Requirements for high-pressure cylinders for onboard storage of fuels for automotive vehicles

Gas tanks designed and constructed in accordance with previous versions of relevant standards or regulations for gas tanks for motor vehicles, which were applicable at the time of the certification of the vehicles for which the gas tanks were designed and constructed may continue to be transported;

- .2 the fuel gas containment systems shall be leakproof and shall not exhibit any signs of external damage which may affect their safety;

Note 1: Criteria may be found in standard ISO 11623:2015 *Transportable gas cylinders – Periodic inspection and testing of composite gas cylinders* (or ISO 19078:2013 *Gas cylinders – Inspection of the cylinder installation, and requalification of high pressure cylinders for the onboard storage of natural gas as a fuel for automotive vehicles*).

Note 2: If the fuel gas containment systems are not leakproof or are overfilled or if they exhibit damage that could affect their safety (e.g. in case of a safety-related recall), they shall only be carried in salvage pressure receptacles in conformity with this Code.

- .3 if a fuel gas containment system is equipped with two valves or more integrated in line, the two valves shall be closed as to be gastight under normal conditions of transport. If only one valve exists or only one valve works, all openings with the exception of the opening of

the pressure relief device shall be closed as to be gastight under normal conditions of transport;

- .4 fuel gas containment systems shall be transported in such a way as to prevent obstruction of the pressure relief device or any damage to the valves and any other pressurised part of the fuel gas containment systems and unintentional release of the gas under normal conditions of transport. The fuel gas containment system shall be secured in order to prevent slipping, rolling or vertical movement;
- .5 valves shall be protected by one of the methods described in 4.1.6.1.8.1 to 4.1.6.1.8.5;
- .6 except for the case of fuel gas containment systems removed for disposal, recycling, repair, inspection or maintenance, they shall be filled with not more than 20% of their nominal filling ratio or nominal working pressure, as applicable;
- .7 notwithstanding the provisions of chapter 5.2, when fuel gas containment systems are consigned in a handling device, markings and labels may be affixed to the handling device; and
- .8 notwithstanding the provisions of 5.4.1.5, the information on the total quantity of dangerous goods may be replaced by the following information:
 - .1 the number of fuel gas containment systems; and
 - .2 in the case of liquefied gases the total net mass (kg) of gas of each fuel gas containment system and, in the case of compressed gases, the total water capacity (l) of each fuel gas containment system followed by the nominal working pressure.

Examples for information in the transport document:

Example 1: "UN 1971 natural gas, compressed, 2.1, 1 fuel gas containment system of 50 l in total, 200 bar".

Example 2: "UN 1965 hydrocarbon gas mixture, liquefied, n.o.s., 2.1, 3 fuel gas containment systems, each of 15 kg net mass of gas".

"973 Packages, with the exception of bales, shall also display the proper shipping name and the UN number of the substance that they contain in accordance with 5.2.1. In any case, the packages, including bales, are exempt from class marking provided that they are loaded in a cargo transport unit and that they contain goods to which only one UN number has been assigned. The cargo transport units in which the packages, including bales, are loaded shall display any relevant labels, placards and marks in accordance with chapter 5.3."

"974 These substances may be transported in IMO type 9 tanks."

Chapter 3.4
Dangerous goods packed in limited quantities

3.4.6 Documentation

3.4.6.1 Replace the words "dangerous goods declaration" with "dangerous goods transport document".

Chapter 3.5
Dangerous goods packed in excepted quantities

3.5.6 Documentation

3.5.6.1 Replace the words "dangerous goods declaration" with "dangerous goods transport document".

PART 4
PACKING AND TANK PROVISIONS

Chapter 4.1
Use of packagings, including intermediate bulk containers (IBCs)
and large packagings

4.1.4 List of packing instructions

4.1.4.1 Packing instructions concerning the use of packagings (except IBCs and large packagings)

P001 Under "Composite packagings", in the first line, replace "Plastics receptacle in steel or aluminium drum (6HA1, 6HB1)" with "Plastics receptacle in steel, aluminium or plastics drum (6HA1, 6HB1, 6HH1)". In the second line, replace "Plastics receptacle in fibre, plastics or plywood drum (6HG1, 6HH1, 6HD1)" with "Plastics receptacle in fibre or plywood drum (6HG1, 6HD1)".

P101 Replace "The State's distinguishing sign for motor vehicles in international traffic" with "The distinguishing sign used on vehicles in international road traffic*".

Table note * reads as follows:

** Distinguishing sign of the State of registration used on motor vehicles and trailers in international road traffic, e.g. in accordance with the Geneva Convention on Road Traffic of 1949 or the Vienna Convention on Road Traffic of 1968."

P200 In paragraph (3) (e), in the first paragraph, replace "liquid phase" with "liquefied gas". In sub-paragraph (i), replace "liquid component" with "liquefied gas". In sub-paragraph (iv), replace "liquid component" with "liquefied gas". In sub-paragraph (v), replace "liquid component" with "liquefied gas". In the last paragraph, replace "liquid component" with "liquid phase". In the header of column 4 of tables 1, 2 and 3, replace "risk" with "hazard".

P203 In paragraph (7), replace "risk" with "hazard".

P206 In paragraph (3), in the first paragraph, replace "liquid phase" with "liquefied gas". In sub-paragraph (a), replace "liquid component" with "liquefied gas". In sub-paragraph (d), replace "liquid component" with "liquefied gas". In sub-paragraph (e), replace "liquid component" with "liquefied gas". In the last paragraph, replace "liquid component" with "liquid phase".

P208 In the header of column 4 of table 1, replace "risk" with "hazard".

P403 In special packing provisions PP31, delete ", except for solid fused material".

P410 Replace the table note (4) with the following:

"For packing group II substances, these packagings may only be used when transported in a closed cargo transport unit."

P520 In additional provision 4, replace "risk" with "hazard". Furthermore, add the following new special packing provisions PP94 and PP95:

"PP94 Very small amounts of energetic samples of section 2.0.4.3 may be carried under UN 3223 or UN 3224, as appropriate, provided that:

- .1 only combination packaging with outer packaging comprising boxes (4A, 4B, 4N, 4C1, 4C2, 4D, 4F, 4G, 4H1 and 4H2) are used;
- .2 the samples are carried in microtiter plates or multi-titer plates made of plastics, glass, porcelain or stoneware as inner packaging;
- .3 the maximum amount per individual inner cavity does not exceed 0.01 g for solids or 0.01 ml for liquids;
- .4 the maximum net quantity per outer packaging is 20 g for solids or 20 ml for liquids, or in the case of mixed packing the sum of grams and millilitres does not exceed 20; and
- .5 when dry ice or liquid nitrogen is optionally used as a coolant for quality control measures, the requirements of 5.5.3 are complied with. Interior supports shall be provided to secure the inner packagings in their original position. The inner and outer packagings shall maintain their integrity at the temperature of the refrigerant used as well as the temperatures and the pressures which could result if refrigeration were lost.

PP95 Small amounts of energetic samples of section 2.0.4.3 may be carried under UN 3223 or UN 3224, as appropriate, provided that:

- .1 the outer packaging consist only of corrugated fibreboard of type 4G having minimum dimensions of 60 cm (length) by 40.5 cm (width) by 30 cm (height) and minimum wall thickness of 1.3 cm;
- .2 the individual substance is contained in an inner packaging of glass or plastics of maximum capacity 30 ml placed in an expandable polyethylene foam matrix of at least 130 mm thickness having a density of 18 ± 1 g/l;
- .3 within the foam carrier, inner packagings are segregated from each other by a minimum distance of 40 mm and from the wall of the outer packaging by a

- minimum distance of 70 mm. The package may contain up to two layers of such foam matrices, each carrying up to 28 inner packagings;
- .4 the maximum content of each inner packaging does not exceed 1 g for solids or 1 ml for liquids;
 - .5 the maximum net quantity per outer packaging is 56 g for solids or 56 ml for liquids, or in the case of mixed packing the sum of grams and millilitres does not exceed 56; and
 - .6 when dry ice or liquid nitrogen is optionally used as a coolant for quality control measures, the requirements of 5.5.3 are complied with. Interior supports shall be provided to secure the inner packagings in their original position. The inner and outer packagings shall maintain their integrity at the temperature of the refrigerant used as well as the temperatures and the pressures which could result if refrigeration were lost."

P620 In additional provision 3, at the end, delete "and temperatures in the range -40°C to +55°C" and add the following new sentence: "This primary receptacle or secondary packaging shall also be capable of withstanding temperatures in the range -40°C to +55°C."

P801 In additional provision 2, replace "non-conductive" with "electrically non-conductive".

P901 Under "Additional requirement", delete "not exceed either 250 ml or 250 g and shall".

P902 In the paragraph under "Unpackaged articles:", amend the end of the sentence to read "when moved to, from, or between where they are manufactured and an assembly plant including intermediate handling locations."

P903 Before the introductory sentence that starts with "The following packagings...", insert a new sentence to read "For the purpose of this packing instruction, "equipment" means apparatus for which the lithium cells or batteries will provide electrical power for its operation.". In paragraph (3), delete the last sentence.

P906 In paragraph (2), in the introductory sentence and in sub-paragraph (b), replace "devices" with "articles" three times.

P907 At the beginning, add a new box with the following sentence:

"This instruction applies to UN 3363."

P908 In paragraphs (2) and (4), replace "non-conductive" with "electrically non-conductive".

P909 In paragraphs (1)(c) and (2)(b), in the fourth indent of additional requirement 2 and in additional requirement 3, replace "non-conductive" with "electrically non-conductive".

P910 In the introductory sentence, replace "cells and batteries" with "cells or batteries" twice.

In paragraphs (1)(c), (1)(d), (2)(c), and fourth indent of the additional requirements, replace "non-conductive" with "electrically non-conductive".

Insert the following new packing instructions:

P006	PACKING INSTRUCTION	P006
This instruction applies to UN Nos. 3537, 3538, 3540, 3541, 3546, 3547 and 3548.		
<p>(1) The following packagings are authorized, provided that the general provisions of 4.1.1 and 4.1.3 are met: drums (1A2, 1B2, 1N2, 1H2, 1D, 1G); boxes (4A, 4B, 4N, 4C1, 4C2, 4D, 4F, 4G, 4H1, 4H2); and jerricans (3A2, 3B2, 3H2). Packagings shall conform to the packing group II performance level.</p> <p>(2) In addition, for robust articles the following packagings are authorized: Strong outer packagings constructed of suitable material and of adequate strength and design in relation to the packaging capacity and its intended use. The packagings shall meet the provisions of 4.1.1.1, 4.1.1.2, 4.1.1.8 and 4.1.3 in order to achieve a level of protection that is at least equivalent to that provided by chapter 6.1. Articles may be transported unpackaged or on pallets when the dangerous goods are afforded equivalent protection by the article in which they are contained.</p> <p>(3) Additionally, the following conditions shall be met:</p> <ul style="list-style-type: none"> (a) receptacles within articles containing liquids or solids shall be constructed of suitable materials and secured in the article in such a way that, under normal conditions of transport, they cannot break, be punctured or leak their contents into the article itself or the outer packaging; (b) receptacles containing liquids with closures shall be packed with their closures correctly oriented. The receptacles shall in addition conform to the internal pressure test provisions of 6.1.5.5; (c) receptacles that are liable to break or be punctured easily, such as those made of glass, porcelain or stoneware or of certain plastic materials, shall be properly secured. Any leakage of the contents shall not substantially impair the protective properties of the article or of the outer packaging; (d) receptacles within articles containing gases shall meet the requirements of section 4.1.6 and chapter 6.2 as appropriate or be capable of providing an equivalent level of protection to packing instructions P200 or P208; and (e) where there is no receptacle within the article, the article shall fully enclose the dangerous substances and prevent their release under normal conditions of transport. <p>(4) Articles shall be packed to prevent movement and inadvertent operation during normal conditions of transport.</p>		

P911	PACKING INSTRUCTION	P911
This instruction applies to damaged or defective cells and batteries of UN Nos. 3090, 3091, 3480 and 3481 liable to rapidly disassemble, dangerously react, produce a flame or a dangerous evolution of heat or a dangerous emission of toxic, corrosive or flammable gases or vapours under normal conditions of transport.		
<p>The following packagings are authorized, provided that the general provisions of 4.1.1 and 4.1.3 are met:</p> <p>For cells and batteries and equipment containing cells and batteries: drums (1A2, 1B2, 1N2, 1H2, 1D, 1G); boxes (4A, 4B, 4N, 4C1, 4C2, 4D, 4F, 4G, 4H1, 4H2); and jerricans (3A2, 3B2, 3H2).</p> <p>The packagings shall conform to the packing group I performance level.</p>		

P911	PACKING INSTRUCTION	P911
	<p>(1) The packaging shall be capable of meeting the following additional performance requirements in case of rapid disassembly, dangerous reaction, production of a flame or a dangerous evolution of heat or a dangerous emission of toxic, corrosive or flammable gases or vapours of the cells or batteries:</p> <ul style="list-style-type: none"> (a) the outside surface temperature of the completed package shall not have a temperature of more than 100°C. A momentary spike in temperature up to 200°C is acceptable; (b) no flame shall occur outside the package; (c) no projectiles shall exit the package; (d) the structural integrity of the package shall be maintained; and (e) the packagings shall have a gas management system (e.g. filter system, air circulation, containment for gas, gas tight packaging, etc.), as appropriate. <p>(2) The additional packaging performance requirements shall be verified by a test as specified by the competent authority.^a</p> <p>A verification report shall be available on request. As a minimum requirement, the cell or battery name, the cell or battery number, the mass, type, energy content of the cells or batteries, the packaging identification and the test data according to the verification method as specified by the competent authority shall be listed in the verification report.</p> <p>(3) When dry ice or liquid nitrogen is used as a coolant, the requirements of section 5.5.3 shall apply. The inner packaging and outer packaging shall maintain their integrity at the temperature of the refrigerant used as well as the temperatures and the pressures which could result if refrigeration were lost.</p>	
	<p>Additional requirement:</p> <p>Cells or batteries shall be protected against short circuit.</p>	
	<p>^a <i>The following criteria, as relevant, may be considered to assess the performance of the packaging:</i></p> <ul style="list-style-type: none"> <i>(a) the assessment shall be done under a quality management system (as described, e.g. in section 2.9.4.5) allowing for the traceability of tests results, reference data and characterization models used;</i> <i>(b) the list of hazards expected in case of thermal runaway for the cell or battery type, in the condition it is transported (e.g. usage of an inner packaging, state of charge (SOC), use of sufficient non-combustible, electrically non-conductive and absorbent cushioning material, etc.), shall be clearly identified and quantified; the reference list of possible hazards for lithium cells or batteries (rapidly disassemble, dangerously react, produce a flame or a dangerous evolution of heat or a dangerous emission of toxic, corrosive or flammable gases or vapours) can be used for this purpose. The quantification of these hazards shall rely on available scientific literature;</i> <i>(c) the mitigating effects of the packaging shall be identified and characterized, based on the nature of the protections provided and the construction material properties. A list of technical characteristics and drawings shall be used to support this assessment (Density [$\text{kg}\cdot\text{m}^{-3}$], specific heat capacity [$\text{J}\cdot\text{kg}^{-1}\cdot\text{K}^{-1}$], heating value [$\text{kJ}\cdot\text{kg}^{-1}$], thermal conductivity [$\text{W}\cdot\text{m}^{-1}\cdot\text{K}^{-1}$], melting temperature and flammability temperature [K], heat transfer coefficient of the outer packaging [$\text{W}\cdot\text{m}^{-2}\cdot\text{K}^{-1}$], ...);</i> <i>(d) the test and any supporting calculations shall assess the result of a thermal runaway of the cell or battery inside the packaging in the normal conditions of transport;</i> <i>(e) in case the SOC of the cell or battery is not known, the assessment used shall be done with the highest possible SOC corresponding to the cell or battery use conditions;</i> 	

P911	PACKING INSTRUCTION	P911
<p>(f) the surrounding conditions in which the packaging may be used and transported shall be described (including for possible consequences of gas or smoke emissions on the environment, such as ventilation or other methods) according to the gas management system of the packaging;</p> <p>(g) the tests or the model calculation shall consider the worst case scenario for the thermal runaway triggering and propagation inside the cell or battery: this scenario includes the worst possible failure in the normal transport condition, the maximum heat and flame emissions for the possible propagation of the reaction; and</p> <p>(h) these scenarios shall be assessed over a period long enough to allow all the possible consequences to occur (e.g. 24 hours).</p>		

4.1.4.2 Packing instructions concerning the use of IBCs

IBC 08 In the special packing provisions of B21, add a new substance of UN 3535 in the first sentence, to read "For substances, UN Nos. 1374, 2590 and 3535 in IBCs other than..."

IBC520 In the third line, after "4.1.7.2 are met.", insert a new sentence to read as follows:

"The formulations listed below may also be transported packed in accordance with packing method OP8 of packing instruction P520 of 4.1.4.1, with the same control and emergency temperatures, if applicable."

For UN 3109, in the entry "tert-Butyl hydroperoxide, not more than 72% with water", add a new line under the column "Type of IBC" and "quantity" to read:

"31HA1" "1000"

Add the following new entries to packing instruction IBC520:

UN No.	Organic peroxide	Type of IBC	Maximum quantity (litres)	Control temperature	Emergency Temperature
3109	2,5-Dimethyl-2,5-di(tert-butylperoxy)hexane, not more than 52% in diluent type A	31HA1	1000		
3109	3,6,9-Triethyl-3,6,9-trimethyl-1,4,7-triperoxonane, not more than 27% in diluent type A	31HA1	1000		
3119	tert-Amyl peroxy-2-ethylhexanoate, not more than 62% in diluent type A	31HA1	1000	+15°C	+20°C

4.1.4.3 Packing instructions concerning the use of large packagings

LP902 Under "Packaged articles", replace "Packagings conforming to the packing group III performance level." with:

"Rigid large packagings conforming to the packing group III performance level, made of:

steel (50A);
aluminium (50B);
metal other than steel or aluminium (50N);
rigid plastics (50H);
natural wood (50C);
plywood (50D);
reconstituted wood (50F); and
rigid fibreboard (50G)."

In the paragraph under "Unpackaged articles:", amend the end of the sentence to read "when moved to, from or between where they are manufactured and an assembly plant including intermediate handling locations."

LP903 Replace the second sentence with the following:

"The following large packagings are authorized for a single battery and for a single item of equipment containing cells or batteries, provided that the general provisions of 4.1.1 and 4.1.3 are met:"

LP904 Replace the first sentence with the following:

"This instruction applies to single damaged or defective batteries and to single items of equipment containing damaged or defective cells or batteries of UN Nos. 3090, 3091, 3480 and 3481."

Replace the second sentence with the following:

"The following large packagings are authorized for a single damaged or defective battery and for a single item of equipment containing damaged or defective cells or batteries, provided the general provisions of 4.1.1 and 4.1.3 are met."

In the third sentence, replace "containing batteries" with "containing cells and batteries". Before "steel (50A)", insert the following new line: "Rigid large packagings conforming to the packing group II performance level, made of:". After "plywood (50D)", delete "Packagings shall conform to the packing group II performance level."

Amend the beginning of the first sentence of paragraph .1 to read as follows:

"The damaged or defective battery or equipment containing such cells or batteries shall be ...".

In .2, amend the beginning of the sentence to read "The inner packaging". Replace "non-conductive" with "electrically non-conductive".

In .4, after "movement of the battery" add "or the equipment". Replace "non-conductive" with "electrically non-conductive". In the last sentence, after "For leaking batteries", add "and cells,"

In the additional requirement, after "Batteries", add "and cells".

Insert the following new packing instructions:

LP03	PACKING INSTRUCTION	LP03
This instruction applies to UN Nos. 3537, 3538, 3540, 3541, 3546, 3547 and 3548.		
<p>(1) The following large packagings are authorized, provided that the general provisions of 4.1.1 and 4.1.3 are met:</p> <p style="padding-left: 40px;">Rigid large packagings conforming to the packing group II performance level, made of:</p> <ul style="list-style-type: none"> steel (50A); aluminium (50B); metal other than steel or aluminium (50N); rigid plastics (50H); natural wood (50C); plywood (50D); reconstituted wood (50F); and rigid fibreboard (50G). <p>(2) Additionally, the following conditions shall be met:</p> <ul style="list-style-type: none"> (a) receptacles within articles containing liquids or solids shall be constructed of suitable materials and secured in the article in such a way that, under normal conditions of transport, they cannot break, be punctured or leak their contents into the article itself or the outer packaging; (b) receptacles containing liquids with closures shall be packed with their closures correctly oriented. The receptacles shall in addition conform to the internal pressure test provisions of 6.1.5.5; (c) receptacles that are liable to break or be punctured easily, such as those made of glass, porcelain or stoneware or of certain plastics materials shall be properly secured. Any leakage of the contents shall not substantially impair the protective properties of the article or of the outer packaging; (d) receptacles within articles containing gases shall meet the requirements of section 4.1.6 and chapter 6.2 as appropriate or be capable of providing an equivalent level of protection as packing instructions P200 or P208; and (e) where there is no receptacle within the article, the article shall fully enclose the dangerous substances and prevent their release under normal conditions of transport. <p>(3) Articles shall be packed to prevent movement and inadvertent operation during normal conditions of transport.</p>		

LP905	PACKING INSTRUCTION	LP905
This instruction applies to UN Nos. 3090, 3091, 3480 and 3481 production runs consisting of not more than 100 cells and batteries and to pre-production prototypes of cells and batteries when these prototypes are transported for testing.		
The following large packagings are authorized for a single battery and for a single item of equipment containing cells or batteries, provided that the general provisions of 4.1.1 and 4.1.3 are met:		
<p>(1) For a single battery:</p> <p style="padding-left: 40px;">rigid large packagings conforming to the packing group II performance level, made of:</p> <ul style="list-style-type: none"> steel (50A); aluminium (50B); 		

metal other than steel or aluminium (50N);
rigid plastics (50H);
natural wood (50C);
plywood (50D);
reconstituted wood (50F); and
rigid fibreboard (50G).

Large packagings shall also meet the following requirements:

- (a) a battery of different size, shape or mass may be packed in an outer packaging of a tested design type listed above provided the total gross mass of the package does not exceed the gross mass for which the design type has been tested;
 - (b) the battery shall be packed in an inner packaging and placed inside the outer packaging;
 - (c) the inner packaging shall be completely surrounded by sufficient non-combustible and electrically non-conductive thermal insulation material to protect against a dangerous evolution of heat;
 - (d) appropriate measures shall be taken to minimize the effects of vibration and shocks and prevent movement of the battery within the package that may lead to damage and a dangerous condition during transport. When cushioning material is used to meet this requirement it shall be non-combustible and electrically non-conductive; and
 - (e) non-combustibility shall be assessed according to a standard recognized in the country where the large packaging is designed or manufactured.
- (2) For a single item of equipment:
rigid large packagings conforming to the packing group II performance level, made of:
steel (50A);
aluminium (50B);
metal other than steel or aluminium (50N);
rigid plastics (50H);
natural wood (50C);
plywood (50D);
reconstituted wood (50F); and
rigid fibreboard (50G).

Large packagings shall also meet the following requirements:

- (a) a single item of equipment of different size, shape or mass may be packed in an outer packaging of a tested design type listed above provided the total gross mass of the package does not exceed the gross mass for which the design type has been tested;
- (b) the equipment shall be constructed or packed in such a manner as to prevent accidental operation during transport;
- (c) appropriate measures shall be taken to minimize the effects of vibration and shocks and prevent movement of the equipment within the package that may lead to damage and a dangerous condition during transport. When cushioning material is used to meet this requirement, it shall be non-combustible and electrically non-conductive; and
- (d) non-combustibility shall be assessed according to a standard recognized in the country where the large packaging is designed or manufactured.

Additional requirement:

Cells and batteries shall be protected against short circuit.

LP906	PACKING INSTRUCTION	LP906
<p>This instruction applies to damaged or defective batteries of UN Nos. 3090, 3091, 3480 and 3481 liable to rapidly disassemble, dangerously react, produce a flame or a dangerous evolution of heat or a dangerous emission of toxic, corrosive or flammable gases or vapours under normal conditions of transport.</p>		
<p>The following large packagings are authorized, provided that the general provisions of 4.1.1 and 4.1.3 are met:</p>		
<p>For a single battery and for a single item of equipment containing cells or batteries:</p>		
<p>Rigid large packagings conforming to the packing group I performance level, made of:</p>		
<ul style="list-style-type: none"> steel (50A); aluminium (50B); metal other than steel or aluminium (50N); rigid plastics (50H); plywood (50D); and rigid fibreboard (50G). 		
<p>(1) The large packaging shall be capable of meeting the following additional performance requirements in case of rapid disassembly, dangerous reaction, production of a flame or a dangerous evolution of heat or a dangerous emission of toxic, corrosive or flammable gases or vapours of the battery:</p>		
<ul style="list-style-type: none"> (a) the outside surface temperature of the completed package shall not have a temperature of more than 100 °C. A momentary spike in temperature up to 200°C is acceptable; (b) no flame shall occur outside the package; (c) no projectiles shall exit the package; (d) the structural integrity of the package shall be maintained; and (e) the large packagings shall have a gas management system (e.g. filter system, air circulation, containment for gas, gas tight packaging etc.), as appropriate. 		
<p>(2) The additional large packaging performance requirements shall be verified by a test as specified by the competent authority.^a</p>		
<p>A verification report shall be available on request. As a minimum requirement, the battery name, the battery number, the mass, type, energy content of the batteries, the large packaging identification and the test data according to the verification method as specified by the competent authority shall be listed in the verification report.</p>		
<p>(3) When dry ice or liquid nitrogen is used as a coolant, the requirements of section 5.5.3 shall apply. The inner packaging and outer packaging shall maintain their integrity at the temperature of the refrigerant used as well as the temperatures and the pressures which could result if refrigeration were lost.</p>		
<p>Additional requirement:</p>		
<p>Batteries shall be protected against short circuit.</p>		
<p>^a <i>The following criteria, as relevant, may be considered to assess the performance of the large packaging:</i></p>		
<p>(a) <i>the assessment shall be done under a quality management system (as described e.g. in section 2.9.4.5) allowing for the traceability of tests results, reference data and characterization models used;</i></p>		
<p>(b) <i>the list of hazards expected in case of thermal runaway for the battery type, in the condition it is transported (e.g. usage of an inner packaging, state of charge (SOC), use of sufficient non-combustible, electrically non-conductive and absorbent cushioning material etc.), shall be clearly identified and quantified; the reference list of possible hazards for lithium batteries</i></p>		

LP906	PACKING INSTRUCTION	LP906
<i>(rapidly disassemble, dangerously react, produce a flame or a dangerous evolution of heat or a dangerous emission of toxic, corrosive or flammable gases or vapours) can be used for this purpose. The quantification of these hazards shall rely on available scientific literature;</i>		
<i>(c) the mitigating effects of the large packaging shall be identified and characterized, based on the nature of the protections provided and the construction material properties. A list of technical characteristics and drawings shall be used to support this assessment (Density [kg m^3], specific heat capacity [$\text{J}\cdot\text{kg}^{-1}\cdot\text{K}^{-1}$], heating value [$\text{kJ}\cdot\text{kg}^{-1}$], thermal conductivity [$\text{W}\cdot\text{m}^{-1}\cdot\text{K}^{-1}$], melting temperature and flammability temperature [K], heat transfer coefficient of the outer packaging [$\text{W}\cdot\text{m}^{-2}\cdot\text{K}^{-1}$], ...);</i>		
<i>(d) the test and any supporting calculations shall assess the result of a thermal run-away of the battery inside the large packaging in the normal conditions of transport;</i>		
<i>(e) in case the SOC of the battery is not known, the assessment used shall be done with the highest possible SOC corresponding to the battery use conditions;</i>		
<i>(f) the surrounding conditions in which the large packaging may be used and transported shall be described (including for possible consequences of gas or smoke emissions on the environment, such as ventilation or other methods) according to the gas management system of the large packaging;</i>		
<i>(g) the tests or the model calculation shall consider the worst case scenario for the thermal runaway triggering and propagation inside the battery: this scenario includes the worst possible failure in the normal transport condition, the maximum heat and flame emissions for the possible propagation of the reaction; and</i>		
<i>(h) these scenarios shall be assessed over a period long enough to allow all the possible consequences to occur (e.g. 24 hours).</i>		

4.1.6 Special packing provisions for goods of class 2

4.1.6.1.4 In the third sentence, replace "risk" with "hazard".

4.1.9 Special packing provisions for radioactive material

4.1.9.1 General

4.1.9.1.5 Replace "risk" with "hazard" twice.

Chapter 4.2

Use of portable tanks and multiple-element gas containers (MEGCs)

4.2.0 Transitional provisions

4.2.0.1 In the note, after the definition for IMO type 8 tank, insert IMO type 9 tank definition as follows:

"IMO type 9 tank means a road gas elements vehicle for the transport of compressed gases of class 2 with elements linked to each other by a manifold, permanently attached to a chassis, which is fitted with items of service equipment and structural equipment necessary for the transport of gases. Elements are cylinders, tubes and bundles of cylinders, intended for the transport of gases as defined in 2.2.1.1."

4.2.1 General provisions for the use of portable tanks for the transport of substances of class 1 and classes 3 to 9

4.2.1.19 Additional provisions applicable to the transport of solid substances transported above their melting point

4.2.1.19.1 Replace "risk" with "hazard".

4.2.5.2 Portable tank instructions

T23 In the first box, at the end, add a new sentence to read as follows:

"The formulations listed below may also be transported packed in accordance with packing method OP8 of packing instruction P520 of 4.1.4.1, with the same control and emergency temperatures, if applicable."

In footnote [§], replace "risk" with "hazard".

4.2.5.3 Portable tank special provisions

TP10 Add the following new sentence at the end:

"A portable tank may be offered for transport after the date of expiry of the last lining inspection for a period not to exceed three months beyond the date of expiry of the last testing, after emptying but before cleaning, for purposes of performing the next required test or inspection prior to refilling."

4.2.6 Amend title of 4.2.6 to read "Additional provisions for the use of road tank vehicles and road gas elements vehicles"

4.2.6.1 Replace paragraph 4.2.6.1 with the following:

"4.2.6.1 The tank of a road tank vehicle or the elements of a road gas elements vehicle shall be attached to the vehicle during normal operations of filling, discharge and transport. IMO type 4 tanks shall be attached to the chassis when transported on board ships. Road tank vehicles and road gas elements vehicles shall not be filled or discharged while they remain on board. A road tank vehicle or road gas elements vehicle shall be driven on board on its own wheels and be fitted with permanent tie-down attachments for securing on board the ship."

4.2.6.2 Replace the words "Road tank vehicles shall comply" with "Road tank vehicles and road gas elements vehicles shall comply" and add the following new paragraph:

"4.2.6.3 Substances permitted to be transported in IMO type 9 tanks are assigned special provision 974."

PART 5 CONSIGNMENT PROCEDURES

Chapter 5.1 General provisions

5.1.1 Application and general provisions

At the end, add the following note:

Note: In accordance with the GHS, a GHS pictogram not required by this Code should only appear in transport as part of a complete GHS label and not independently (see GHS 1.4.10.4.4)."

5.1.4 Mixed packing

Replace "risk" with "hazard" twice.

5.1.5 General provisions for class 7

5.1.5.4.2 Replace the existing paragraph with the following:

"5.1.5.4.2 The documentation requirements of 5.4.1 and 5.4.5 do not apply to excepted packages of radioactive material of class 7, except that:

- .1 the UN number preceded by the letters "UN" and the name and address of the consignor and the consignee and, if relevant, the identification mark for each competent authority certificate of approval (see 5.4.1.5.7.1.7.) shall be shown on a special transport document such as a bill of lading, air waybill or other similar document complying with the requirements of 5.4.1.2.1 to 5.4.1.2.4; and
- .2 the requirements of 5.4.1.6.2 and, if relevant, those of 5.4.1.5.7.1.7, 5.4.1.5.7.3 and 5.4.1.5.7.4 shall apply."

Chapter 5.2 Marking and labelling of packages including IBCs

5.2.1 Marking of packages including IBCs

5.2.1.3 After "Salvage packagings", add "including large salvage packagings".

5.2.1.7.1 Replace the first four lines with the following:

"Except as provided in 5.2.1.7.2:

- combination packagings having inner packagings containing liquid dangerous goods;
- single packagings fitted with vents;
- cryogenic receptacles intended for the transport of refrigerated liquefied gases; and

- machinery or apparatus containing liquid dangerous goods when it is required to ensure the liquid dangerous goods remain in their intended orientation (see special provision 301 of chapter 3.3),"

5.2.2 Labelling of packages including IBCs

- 5.2.2.1.1 Replace "risks" with "hazards" and "risk" with "hazard".
- 5.2.2.1.2 Replace "risk" with "hazard" 6 times.
- 5.2.2.1.2.1 Delete the entry of "Batteries, wet, non-spillable 2800 8 Class 8⁺" and the corresponding footnote.
- 5.2.2.1.3 Replace "risk" with "hazard" 3 times.
- 5.2.2.1.3.1 Replace "risk" with "hazard" twice.
- 5.2.2.1.4 Replace "risk(s)" with "hazard(s)" 2 times and "risk" with "hazard" twice.
- 5.2.2.1.5 Replace "risks" with "hazards".
- 5.2.2.1.6.3 Replace "risk" with "hazard".
- 5.2.2.1.9 Replace "risk" with "hazard".
- 5.2.2.1.10 Replace "risk" with "hazard" four times.
- 5.2.2.1.11 Replace "risk" with "hazard".
- 5.2.2.1.13 Add a new subsection 5.2.2.1.13 as follows:
 - "5.2.2.1.13 Labels for articles containing dangerous goods transported as UN Nos. 3537, 3538, 3539, 3540, 3541, 3542, 3543, 3544, 3545, 3546, 3547 and 3548
 - .1 Packages containing articles or articles transported unpackaged shall bear labels according to 5.2.2.1.2 reflecting the hazards established according to 2.0.6. If the article contains one or more lithium battery with, for lithium metal batteries, an aggregate lithium content of 2 g or less, and for lithium ion batteries, a Watt-hour rating of 100Wh or less, the lithium battery mark (5.2.1.10.2) shall be affixed to the package or unpackaged article. If the article contains one or more lithium batteries with, for lithium metal batteries, an aggregate lithium content of more than 2 g and for lithium ion batteries, a Watt-hour rating of more than 100Wh, the lithium battery label (5.2.2.2.2 No. 9A) shall be affixed to the package or unpackaged article.
 - .2 When it is required to ensure articles containing liquid dangerous goods remain in their intended orientation, orientation marks meeting 5.2.1.7.1 shall be affixed and visible on at least two opposite vertical sides of the package or of the unpackaged article where possible, with the arrows pointing in the correct upright direction."

5.2.2.2 Provisions for labels

5.2.2.2.1.1.2 Replace the first three sentences with the following:

"The label shall be in the form of a square set at an angle of 45 degrees (diamond-shaped). The minimum dimensions shall be 100 mm x 100 mm. There shall be a line inside the edge forming the diamond which shall be parallel and approximately 5 mm from the outside of that line to the edge of the label."

5.2.2.2.1.1.3 In the first sentence, after "the dimensions may be reduced," add "proportionally". Delete the second and third sentences ("The line inside the edge shall remain 5 mm to the edge of the label. The minimum width of the line inside the edge shall remain 2 mm.").





5.2.2.2.1.2 In the first sentence, insert "*Gas cylinders – Precautionary labels*" after "ISO 7225:2005" and delete it in the second sentence.


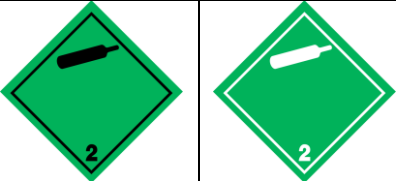

5.2.2.2.1.5 Replace "risk" with "hazard".




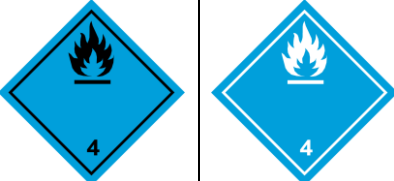
5.2.2.2.2 Replace existing 5.2.2.2.2 with the following:





"5.2.2.2.2 Specimen labels





Note: Labels shall satisfy the provisions below and conform, in terms of colour, symbols and general format, to the models shown in 5.2.2.2.2. Corresponding models required for other modes of transport, with minor variations which do not affect the obvious meaning of the label, are also acceptable.




Label model No.	Class, Division or Category	Symbol and symbol colour	Background	Figure in bottom corner (and figure colour)	Specimen labels	Note
Class 1: Explosive substances or articles						
1	Divisions 1.1, 1.2, 1.3	Exploding bomb: black	Orange	1 (black)		** Place for division – to be left blank if explosive is the subsidiary hazard * Place for compatibility group – to be left blank if explosive is the subsidiary hazard
1.4	Division 1.4	1.4: black Numerals shall be about 30 mm in height and be about 5 mm thick (for a label measuring 100 mm × 100 mm)	Orange	1 (black)		* Place for compatibility group
1.5	Division 1.5	1.5: black Numerals shall be about 30 mm in height and be about 5 mm thick (for a label measuring 100 mm × 100 mm)	Orange	1 (black)		* Place for compatibility group
1.6	Division 1.6	1.6: black Numerals shall be about 30 mm in height and be about 5 mm thick (for a label measuring 100 mm × 100 mm)	Orange	1 (black)		* Place for compatibility group

Label model No.	Class, Division or Category	Symbol and symbol colour	Background	Figure in bottom corner (and figure colour)	Specimen labels	Note
Class 2: Gases						
2.1	Class 2.1: Flammable gases (except as provided for in 5.2.2.2.1.6.4)	Flame: black or white	Red	2 (black or white)		-
2.2	Class 2.2: Non-flammable, non-toxic gases	Gas cylinder: black or white	Green	2 (black or white)		-
2.3	Class 2.3: Toxic gases	Skull and crossbones: black	White	2 (black)		-

Label model No.	Class, Division or Category	Symbol and symbol colour	Background	Figure in bottom corner (and figure colour)	Specimen labels	Note
Class 3: Flammable liquids						
3	-	Flame: black or white	Red	3 (black or white)		-
Class 4: Flammable solids; substances liable to spontaneous combustion; substances which, in contact with water, emit flammable gases						
4.1	Class 4.1: Flammable solids, self-reactive substances, solid desensitized explosives and polymerizing substances	Flame: black	White with 7 vertical red stripes	4 (black)		-
4.2	Class 4.2: Substances liable to spontaneous combustion	Flame: black	Upper half white, lower half red	4 (black)		-
4.3	Class 4.3: Substances which, in contact with water emit flammable gases	Flame: black or white	Blue	4 (black or white)		-

Label model No.	Class, Division or Category	Symbol and symbol colour	Background	Figure in bottom corner (and figure colour)	Specimen labels	Note
Class 5: Oxidizing substances and organic peroxides						
5.1	Class 5.1: Oxidizing substances	Flame over circle: black	Yellow	5.1 (black)		-
5.2	Class 5.2: Organic peroxides	Flame: black or white	Upper half red, lower half yellow	5.2 (black)		-
Class 6: Toxic substances and infectious substances						
6.1	Class 6.1: Toxic substances	Skull and crossbones: black	White	6 (black)		-
6.2	Class 6.2: Infectious substances	Three crescents superimposed on a circle: black	White	6 (black)		The lower half of the label may bear the inscriptions: "INFECTIOUS SUBSTANCE" and "In the case of damage or leakage immediately notify Public Health Authority" in black colour

Label model No.	Class, Division or Category	Symbol and symbol colour	Background	Figure in bottom corner (and figure colour)	Specimen labels	Note
Class 7: Radioactive material						
7A	Category I	Trefoil: black	White	7 (black)		Text (mandatory), black in lower half of label: "RADIOACTIVE" "CONTENTS ..." "ACTIVITY ..." One red vertical bar shall follow the word: "RADIOACTIVE"
7B	Category II	Trefoil: black	Upper half yellow with white border, lower half white	7 (black)		Text (mandatory), black in lower half of label: "RADIOACTIVE" "CONTENTS ..." "ACTIVITY ..." In a black outlined box: "TRANSPORT INDEX"; Two red vertical bars shall follow the word: "RADIOACTIVE"
7C	Category III	Trefoil: black	Upper half yellow with white border, lower half white	7 (black)		Text (mandatory), black in lower half of label: "RADIOACTIVE" "CONTENTS ..." "ACTIVITY ..." In a black outlined box: "TRANSPORT INDEX". Three red vertical bars shall follow the word: "RADIOACTIVE"
7E	Fissile material	-	White	7 (black)		Text (mandatory): black in upper half of label: "FISSILE"; In a black outlined box in the lower half of label: "CRITICALITY SAFETY INDEX"

Label model No.	Class, Division or Category	Symbol and symbol colour	Background	Figure in bottom corner (and figure colour)	Specimen labels	Note
Class 8: Corrosive substances						
8	-	Liquids, spilling from two glass vessels and attacking a hand and a metal: black	Upper half white, lower half black with white border	8 (white)		-
Class 9: Miscellaneous dangerous substances and articles, including environmentally hazardous substances						
9	-	7 vertical stripes in upper half: black	White	9 underlined (black)		-
9A	-	7 vertical stripes in upper half: black; battery group, one broken and emitting flame in lower half: black	White	9 underlined (black)		-

"

Chapter 5.3 Placarding and marking of cargo transport units

Amend the title of chapter 5.3 to read "Placarding and marking of cargo transport units and bulk containers".

5.3.1 Placarding

5.3.1.1.1 Replace sub-paragraphs .1 to .3 with the following:

- .1 Enlarged labels (placards) and marks and signs shall be affixed to the exterior surfaces of a cargo transport unit or bulk container to provide a warning that the contents of the unit or bulk container are dangerous goods and present hazards, unless the labels and/or marks affixed to the packages are clearly visible from the exterior of the cargo transport unit or bulk container.
- .2 The methods of placarding and marking as required in 5.3.1.1.4 and 5.3.2 on cargo transport units and bulk containers shall be such that this information will still be identifiable on cargo transport units and bulk containers surviving at least three months' immersion in the sea. In considering suitable marking methods, account shall be taken of the ease with which the surface of the cargo transport unit or bulk container can be marked.
- .3 All placards, orange panels, marks and signs shall be removed from cargo transport units and bulk containers or masked as soon as both the dangerous goods or their residues which led to the application of those placards, orange panels, marks or signs are discharged."

5.3.1.1.2 In the first sentence, replace "risks" with "hazards" and after "transport units" add "and bulk containers". In the second sentence, replace "risk" with "hazard" and after "transport unit" add "and bulk container". In sub-paragraph .2, replace "risk" with "hazard".

5.3.1.1.3 In the first sentence, replace "risks" with "hazards" and "risk" with "hazard". In the second sentence, replace "risk" with "hazard" twice, and after "transport units" add "and bulk containers".

5.3.1.1.4.1 Replace paragraph 5.3.1.1.4.1 with the following:

"5.3.1.1.4.1 A cargo transport unit or bulk container containing dangerous goods or residues of dangerous goods shall clearly display placards as follows:

- .1 *a freight container, semi-trailer, a closed or sheeted bulk container or portable tank*: one on each side and one on each end of the unit. Portable tanks having a capacity of not more than 3,000 L may be placarded or, alternatively, may be labelled instead, on only two opposite sides;
- .2 *a railway wagon*: at least on each side;
- .3 *a multiple-compartment tank containing more than one dangerous substance or their residues*: along each side at the positions of the relevant compartments. If all compartments are required to display the same placards, these placards need to be displayed only once along each side of the cargo transport unit;

- .4 *a flexible bulk container*: in at least two opposing positions; and
- .5 *any other cargo transport unit*: at least on both sides and on the back of the unit."

5.3.1.2.1 At the end, delete the note.

5.3.2 Marking of cargo transport units

Amend the title of chapter 5.3.2 to read "Marking".

5.3.2.3.1 After "transport units", add "or bulk containers".

5.3.2.3.2 After "cargo transport units", add "and bulk containers".

Chapter 5.4 Documentation

5.4.1 Dangerous goods transport information

5.4.1.4 Information required on the dangerous goods transport document

5.4.1.4.1.4 Replace "risk" with "hazard".

5.4.1.5 Information required in addition to the dangerous goods description

5.4.1.5.3 In the heading and the following sentence, after "salvage packagings", add "including large salvage packagings".

5.4.1.5.5 Replace the paragraph as follows:

"For self-reactive substances, organic peroxides and polymerizing substances which require temperature control during transport, the control and emergency temperatures (see 7.3.7.2) shall be indicated on the dangerous goods transport document, as follows:

"Control temperature: ... °C Emergency temperature: ... °C". "

5.4.1.5.5.1 Replace "risk" with "hazard".

5.4.1.5.9 Explosives

5.4.1.5.9.1 Replace "distinguishing sign for motor vehicles in international traffic" with "distinguishing sign used on vehicles in international road traffic*", and add the corresponding footnote * to read as follows:

"* Distinguishing sign of the State of registration used on motor vehicles and trailers in international road traffic, e.g. in accordance with the Geneva Convention on Road Traffic of 1949 or the Vienna Convention on Road Traffic of 1968.",

5.4.1.5.9.2 Replace "distinguishing sign for motor vehicles in international traffic" with "distinguishing sign used on vehicles in international road traffic*", and add the corresponding footnote * to read as follows:

- " Distinguishing sign of the State of registration used on motor vehicles and trailers in international road traffic, e.g. in accordance with the Geneva Convention on Road Traffic of 1949 or the Vienna Convention on Road Traffic of 1968.",

5.4.1.5.9.3 Replace "distinguishing sign for motor vehicles in international traffic" with "distinguishing sign used on vehicles in international road traffic*", and add the corresponding footnote * to read as follows:

- " Distinguishing sign of the State of registration used on motor vehicles and trailers in international road traffic, e.g. in accordance with the Geneva Convention on Road Traffic of 1949 or the Vienna Convention on Road Traffic of 1968.",

5.4.1.5.15 In the second paragraph, replace "the distinguishing sign for motor vehicles in international traffic" with "the distinguishing sign used on vehicles in international road traffic*", with footnote * reading as follows:

- " Distinguishing sign of the State of registration used on motor vehicles and trailers in international road traffic, e.g. in accordance with the Geneva Convention on Road Traffic of 1949 or the Vienna Convention on Road Traffic of 1968.",

and renumber subsequent footnotes accordingly.

5.4.3 Documentation required aboard the ship

Replace the provisions of 5.4.3 with the following:

"5.4.3 Documentation required aboard the ship

5.4.3.1 Each ship carrying dangerous goods and marine pollutants shall have a special list, manifest⁵ or stowage plan setting out, in accordance with regulation VII/ 4.2 of SOLAS, as amended, and with regulation 4.2 of Annex III of MARPOL, the dangerous goods (except dangerous goods in excepted packages of class 7) and marine pollutants and the location thereof. This special list or manifest shall be based on the documentation and certification required in this Code. It shall contain in addition to the information in 5.4.1.4, 5.4.1.5 and, for UN 3359, in 5.5.2.4.1.1, the stowage location and the total quantity of dangerous goods and marine pollutants. A detailed stowage plan, which identifies by class and sets out the location of all dangerous goods and marine pollutants, may be used in place of such special list or manifest.

5.4.3.2 Each ship carrying excepted packages of class 7 shall have a special list, manifest or stowage plan setting out these excepted packages and the location thereof. This special list or manifest shall be based upon the documents listed in 5.1.5.4.2.1.

5.4.3.3 A copy of the documents according to 5.4.3.1 and, if applicable, 5.4.3.2 shall be made available before departure to the person or organization designated by the port State authority.",

and add the corresponding footnote as follows:

⁵ Refer to Amendments to the Annex to the Convention on Facilitation of International Maritime Traffic, 1965 (resolution FAL.10(35), adopted on 16 January 2009)."

The existing 5.4.3.2 is renumbered to 5.4.3.4 and the existing 5.4.3.2.1 is renumbered to 5.4.3.4.1.

5.4.3.2.1.3 Add the word "*Revised*" before the words "*Emergency Response Procedures for Ships Carrying Dangerous Goods (EmS Guide)*".

5.4.5 Multimodal Dangerous Goods Form

5.4.5.1 Replace the existing text under 5.4.5.1 as follows:

"5.4.5.1 This form meets the requirements of SOLAS, chapter VII, regulation 4, MARPOL, Annex III, regulation 4 and the provisions of this chapter. The information required by the provisions of this chapter is mandatory; however, the layout of this form is not mandatory.

This form may be used as a combined dangerous goods transport document and container packing certificate for multimodal carriage of dangerous goods."

and delete the existing text under the title of "MULTIMODAL DANGEROUS GOODS FORM".

In the section for "Documentary Aspects of the International Transport of Dangerous Goods Container/Vehicle Packing Certificate", replace the existing sentence:

"If the consignments include goods of class 1, other than division 1.4, the container is structurally serviceable."

with the following:

"If the consignments include goods of class 1, other than division 1.4, the container/vehicle is structurally serviceable.";

replace the existing sentence:

"When solid carbon dioxide (CO₂ – dry ice) is used for cooling purposes, the vehicle or freight container is externally marked in accordance with 5.5.3.6."

with the following:

"When substances presenting a risk of asphyxiation are used for cooling or conditioning purposes (such as dry ice (UN 1845) or nitrogen, refrigerated liquid (UN 1977) or argon, refrigerated liquid (UN 1951)), the container/vehicle is externally marked in accordance with 5.5.3.6"; and

replace the existing sentence:

"When this Dangerous Goods Form is used as a container/vehicle packing certificate only, not a combined document, a dangerous goods Declaration signed by the shipper or supplier must have been issued/received to cover each dangerous goods consignment packed in the container."

with the following:

"When this Dangerous Goods Form is used as a container/vehicle packing certificate only, not a combined document, a dangerous goods Declaration signed by the shipper or supplier must have been issued/received to cover each dangerous goods consignment packed in the container/vehicle."

In the note, replace "The container" with "The container/vehicle".

Chapter 5.5 Special provisions

5.5.2 Special provisions applicable to fumigated cargo transport units (UN 3359)

Add a footnote "*" at the end of the heading, as follows:

- * *Refer to the Revised Recommendations on the safe use of pesticides in ships applicable to the fumigation of cargo transport units (MSC.1/Circ.1361)*

5.5.2.5 Additional provisions

Delete the paragraph 5.5.2.5.1 and renumber the remaining paragraphs accordingly.

PART 6 CONSTRUCTION AND TESTING OF PACKAGINGS, INTERMEDIATE BULK CONTAINERS (IBCs), LARGE PACKAGINGS, PORTABLE TANKS, MULTIPLE-ELEMENT GAS CONTAINERS (MEGCs) AND ROAD TANK VEHICLES

Chapter 6.1 Provisions for the construction and testing of packagings (other than for class 6.2 substances)

In the heading of the chapter, delete "(other than for class 6.2 substances)".

6.1.1 Applicability and general provisions

6.1.1.1 Applicability

6.1.1.1.2 (i) Replace "(subsidiary risks)" with "(subsidiary hazards)" and add a new sub-paragraph .5 to read as follows:

- ".5 Packagings for class 6.2 infectious substances of Category A."

6.1.3 Marking

6.1.3.1 (f) Replace the words "indicated by the distinguishing sign for motor vehicles in international traffic" with "indicated by the distinguishing sign used on vehicles in international road traffic".

6.1.3.8 (h) Replace the words "indicated by the distinguishing sign for motor vehicles in international traffic" with "indicated by the distinguishing sign used on vehicles in international road traffic", and add the corresponding footnote * to read as follows:

* Distinguishing sign of the State of registration used on motor vehicles and trailers in international road traffic, e.g. in accordance with the Geneva Convention on Road Traffic of 1949 or the Vienna Convention on Road Traffic of 1968."

6.1.5.7 Test report

6.1.5.7.1 Under sub-paragraph .8, add the following sentence at the end:

"For plastics packagings subject to the internal pressure test in 6.1.5.5, the temperature of the water used."

Chapter 6.2

Provisions for the construction and testing of pressure receptacles, aerosol dispensers, small receptacles containing gas (gas cartridges) and fuel cell cartridges containing liquefied flammable gas

6.2.1 General provisions

6.2.1.6 Periodic inspection and test

6.2.1.6.1.4 Replace the existing note 2 with the following:

Note 2: For seamless steel cylinders and tubes the check of 6.2.1.6.1.2 and hydraulic pressure test of 6.2.1.6.1.4 may be replaced by a procedure conforming to ISO 16148:2016 *Gas cylinders – Refillable seamless steel gas cylinders and tubes – Acoustic emission examination (AT) and follow-up ultrasonic examination (UT) for periodic inspection and testing*

In note 3, replace the words "The hydraulic pressure test may be replaced" with "The check of 6.2.1.6.1.2 and the hydraulic pressure test of 6.2.1.6.1.4 may be replaced".

6.2.2 Provisions for UN pressure receptacles

6.2.2.1 Design, construction and initial inspection and test

6.2.2.1.1 In the table, for "ISO 11118:1999", in the column "Applicable for manufacture", replace "Until further notice" with "Until 31 December 2020".

In the table, after "ISO 11118:1999", insert a new line to read as follows:

ISO 11118:2015	Gas cylinders – Non-refillable metallic gas cylinders – Specification and test methods	Until further notice
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6.2.2.1.2 In the table, for "ISO 11120:1999", in the column "Applicable for manufacture", replace "Until further notice" with "Until 31 December 2022".

In the table, after "ISO 11120:1999", insert a new line to read as follows:

ISO 11120:2015	Gas cylinders – Refillable seamless steel tubes of water capacity between 150 l and 3 000 l – Design, construction and testing	Until further notice
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Insert a new paragraph 6.2.2.1.8 to read as follows:

"6.2.2.1.8 The following standards apply for the design, construction and initial inspection and test of UN pressure drums, except that inspection requirements related to the conformity assessment system and approval shall be in accordance with 6.2.2.5:

Reference	Title	Applicable for Manufacture
ISO 21172-1:2015	Gas cylinders – Welded steel pressure drums up to 3,000 litres capacity for the transport of gases – Design and construction – Part 1: Capacities up to 1,000 litres <i>NOTE: Irrespective of section 6.3.3.4 of this standard, welded steel gas pressure drums with dished ends convex to pressure may be used for the transport of corrosive substances provided all applicable requirements of this Code are met.</i>	Until further notice
ISO 4706: 2008	Gas cylinders – Refillable welded steel cylinders – Test pressure 60 bar and below	Until further notice
ISO 18172-1:2007	Gas cylinders – Refillable welded stainless steel cylinders – Part 1: Test pressure 6 MPa and below	Until further notice

6.2.2.3 Service equipment

In the first table, for "ISO 13340:2001", in the column "Applicable for manufacture", replace "Until further notice" with "Until 31 December 2020".

In the first table, insert the following rows at the end:

ISO 14246:2014	Gas cylinders – Cylinder valves – Manufacturing tests and examination	Until further notice
ISO 17871:2015	Gas cylinders – Quick-release cylinders valves – Specification and type testing	Until further notice

6.2.2.4 Periodic inspection and test

Amend the end of the introductory sentence to read "...testing of UN cylinders and their closures:". Move the last row of the table into a new table, after the existing one, with the same headings and a new introductory sentence to read "The following standard applies to the periodic inspection and testing of UN metal hydride storage systems:"

In the table, for "ISO 11623:2002", in column "Applicable", replace "Until further notice" with "Until 31 December 2020". After the row for "ISO 11623:2002", insert the following new row:

ISO 11623:2015	Gas cylinders – Composite construction – Periodic inspection and testing	Until further notice
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At the end of the first table, insert the following row:

ISO 22434:2006	Transportable gas cylinders – Inspection and maintenance of cylinder valves <i>NOTE: These requirements may be met at times other than at the periodic inspection and test of UN cylinders.</i>	Until further notice
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6.2.2.7 Marking of refillable UN pressure receptacles

6.2.2.7.2 (c) Replace "indicated by the distinguishing signs of motor vehicles in international traffic" with "the distinguishing sign used on vehicles in international road traffic".

6.2.2.7.4 Under sub-paragraph (m), insert a new note to read as follows:

Note: Information on marks that may be used for identifying threads for cylinders is given in ISO/TR 11364, *Gas cylinders – Compilation of national and international valve stem/gas cylinder neck threads and their identification and marking system.*

6.2.2.7.4 (n) Replace "indicated by the distinguishing signs of motor vehicles in international traffic" with "the distinguishing sign used on vehicles in international road traffic".

6.2.2.7.7 (a) Replace "indicated by the distinguishing signs of motor vehicles in international traffic" with "the distinguishing sign used on vehicles in international road traffic", and add the corresponding footnote * to read as follows:

* Distinguishing sign of the State of registration used on motor vehicles and trailers in international road traffic, e.g. in accordance with the Geneva Convention on Road Traffic of 1949 or the Vienna Convention on Road Traffic of 1968."

6.2.2.9 Marking of UN metal hydride storage systems

6.2.2.9.2 In (c) and (h), replace "indicated by the distinguishing signs of motor vehicles in international traffic" with "the distinguishing sign used on vehicles in international road traffic"

6.2.2.9.4 (a) Replace "indicated by the distinguishing signs of motor vehicles in international traffic" with "the distinguishing sign used on vehicles in international road traffic*", and add the corresponding footnote * to read as follows:

- " Distinguishing sign of the State of registration used on motor vehicles and trailers in international road traffic, e.g. in accordance with the Geneva Convention on Road Traffic of 1949 or the Vienna Convention on Road Traffic of 1968."

Chapter 6.3

Provisions for the construction and testing of packagings for class 6.2 infectious substances of category A

6.3.4 Marking

6.3.4.2 (e) Replace "indicated by the distinguishing sign for motor vehicles in international traffic" with "the distinguishing sign used on vehicles in international road traffic*", and add the corresponding footnote * to read as follows:

- " Distinguishing sign of the State of registration used on motor vehicles and trailers in international road traffic, e.g. in accordance with the Geneva Convention on Road Traffic of 1949 or the Vienna Convention on Road Traffic of 1968."

Chapter 6.4

Provisions for the construction, testing and approval of packages and radioactive material

6.4.23 Applications for approval and approvals for radioactive material transport

6.4.23.11 In paragraph (a), replace "the international vehicle registration identification code*" with "the distinguishing sign used on vehicles in international road traffic*", and amend the footnote * to read as follows:

- " Distinguishing sign of the State of registration used on motor vehicles and trailers in international road traffic, e.g. in accordance with the Geneva Convention on Road Traffic of 1949 or the Vienna Convention on Road Traffic of 1968."

Chapter 6.5

Provisions for the construction and testing of intermediate bulk containers (IBCs)

6.5.2 Marking

6.5.2.1 Primary marking

6.5.2.1.1.5 Replace "indicated by the distinguishing sign for motor vehicles in international traffic" with "indicated by the distinguishing sign used on vehicles in international road traffic*", and add the corresponding footnote * to read as follows:

- " Distinguishing sign of the State of registration used on motor vehicles and trailers in international road traffic, e.g. in accordance with the Geneva Convention on Road Traffic of 1949 or the Vienna Convention on Road Traffic of 1968."

6.5.6.9 Drop test

6.5.6.9.3 Amend the last paragraph to read as follows:

"The same IBC or a different IBC of the same design may be used for each drop."

6.5.6.14 Test report

6.5.6.14.1.8 At the end of the sub-paragraph, add the following sentence: "For rigid plastics and composite IBCs subject to the hydraulic pressure test in 6.5.6.8, the temperature of the water used;"

Chapter 6.6 Provisions for the construction and testing of large packagings

6.6.3 Marking

6.6.3.1 Primary marking

6.6.3.1 (e) Replace indicated by the distinguishing sign for motor vehicles in international traffic" with "indicated by the distinguishing sign used on vehicles in international road traffic", and add the corresponding footnote * to read as follows:

"* Distinguishing sign of the State of registration used on motor vehicles and trailers in international road traffic, e.g. in accordance with the Geneva Convention on Road Traffic of 1949 or the Vienna Convention on Road Traffic of 1968."

Chapter 6.7 Provisions for the design, construction, inspection and testing of portable tanks and multiple-element gas containers (MEGCs)

6.7.2 Provisions for the design, construction, inspection and testing of portable tanks intended for the transport of substances of class 1 and classes 3 to 9

6.7.2.18.1 In the fifth sentence, replace "i.e. the distinguishing sign for use in international traffic as prescribed by the Convention on Road Traffic, Vienna 1968" with "indicated by the distinguishing sign used on vehicles in international road traffic".

6.7.3.14.1 In the fifth sentence, replace "i.e. the distinguishing sign for use in international traffic as prescribed by the Convention on Road Traffic, Vienna 1968" with "indicated by the distinguishing sign used on vehicles in international road traffic".

6.7.4.13.1 In the fifth sentence, replace "i.e. the distinguishing sign for use in international traffic as prescribed by the Convention on Road Traffic, Vienna 1968" with "indicated by the distinguishing sign used on vehicles in international road traffic".

6.7.5.11.1 In the fifth sentence, replace "i.e. the distinguishing sign for use in international traffic as prescribed by the Convention on Road Traffic, Vienna 1968" with "indicated by the distinguishing sign used on vehicles in international road traffic".

Add the following corresponding footnote*:

- "* Distinguishing sign of the State of registration used on motor vehicles and trailers in international road traffic, e.g. in accordance with the Geneva Convention on Road Traffic of 1949 or the Vienna Convention on Road Traffic of 1968."

Chapter 6.8 Provisions for road tank vehicles

Amend title of chapter 6.8 to read "Provisions for road tank vehicles and road gas elements vehicles".

6.8.1.1 Amend provision 6.8.1.1 to read as follows:

"6.8.1.1 Tank and elements support frameworks, fitting and tie-down attachments*

6.8.1.1.1 Road tank vehicles and road gas elements vehicles shall be designed and manufactured with supports to provide a secure base during transport and with suitable tie-down attachments. The tie-down attachments shall be located on the tank or elements support, or vehicle structure in such a manner that the suspension system is not left in free play."

6.8.3 Amend the title of 6.8.3 to read "Road tank vehicles and road gas elements vehicles for short international voyages"

6.8.3.4 Add a new provision 6.8.3.4 as follows:

"6.8.3.4 Road gas elements vehicles for compressed gases of class 2 (IMO Type 9)

6.8.3.4.1 General provisions

6.8.3.4.1.1 An IMO type 9 tank shall comply with the provisions of 6.8.3.4.2 and 6.8.3.4.3.

6.8.3.4.1.2 An IMO type 9 tank shall not be offered for transport by sea in a condition that would lead to venting during the voyage under normal conditions of transport.

6.8.3.4.2 Design and construction

6.8.3.4.2.1 An IMO type 9 tank shall comply with the provisions of 6.7.5 with the exception that the horizontal forces at right angles to the direction of travel shall be the MPM multiplied by the acceleration due to gravity (g)*; and that the inspection and testing shall be in accordance with the competent authority where the road gas elements vehicle is approved.

* For calculation purposes, $g = 9.81 \text{ m/s}^2$.

6.8.3.4.2.2 If the landing legs of an IMO type 9 tank are to be used as support structures, the loads specified in 6.7.5.2.8 shall be taken into account in their design and method of attachment. Any bending stress induced in the shell or the elements as a result of this manner of support shall also be included in the design calculations.

6.8.3.4.2.3 Securing arrangements (tie-down attachments) shall be fitted to the road gas elements vehicle support structure and the towing vehicle of an IMO type 9 tank. Semi-trailers unaccompanied by a towing vehicle shall be accepted for shipment only if the trailer supports and the securing arrangements and the position of stowage are agreed by the competent authority for sea transport, unless the approved Cargo Securing Manual includes this arrangement.

6.8.3.4.3 Approval, testing and marking

6.8.3.4.3.1 IMO type 9 tanks shall be approved for road transport by the competent authority for road transport.

6.8.3.4.3.2 The competent authority for sea transport shall issue additionally, in respect of an IMO type 9 tank, a certificate attesting compliance with the relevant design, construction and equipment provisions of this chapter and, where appropriate, the special provisions for the gases listed in the Dangerous Goods List. The certificate shall list the gases allowed to be transported.

6.8.3.4.3.3 An IMO type 9 tank shall be periodically tested and inspected in accordance with the provisions of the competent authority for road transport where the road gas elements vehicle is approved.

6.8.3.4.3.4 An IMO type 9 tank shall be marked in accordance with 6.7.5.13, as applicable. However, where the marking required by the competent authority for road transport is substantially in agreement with that of 6.7.5.13.1, it will be sufficient to endorse the metal plate attached to the IMO type 9 tank with "IMO 9".

"

Chapter 6.9 Provisions for the design, construction, inspection and testing of bulk containers

6.9.5 Requirements for the design, construction, inspection and testing of flexible bulk containers BK3

6.9.5.5 Marking

6.9.5.5.1 (e) Replace "indicated by the distinguishing signs for motor vehicles in international traffic" with "the distinguishing signs used on vehicles in international road traffic", and add the following corresponding footnote *:

" Distinguishing sign of the State of registration used on motor vehicles and trailers in international road traffic, e.g. in accordance with the Geneva Convention on Road Traffic of 1949 or the Vienna Convention on Road Traffic of 1968."

PART 7
PROVISIONS CONCERNING TRANSPORT OPERATIONS

Chapter 7.1
General stowage provisions

7.1.3 Stowage categories

7.1.3.1 Stowage categories for class 1

In the 3rd column for Stowage category 02, Stowage category 03, Stowage category 04 and Stowage category 05, replace "7.1.4.4.5" with "7.1.4.4.6", respectively.

7.1.4 Special stowage provisions

Renumber paragraphs 7.1.4.4.5 and 7.1.4.4.5.1 as 7.1.4.4.6 and 7.1.4.4.6.1, respectively. Renumber paragraph 7.1.4.4.6 as 7.1.4.4.7.

Add a new paragraph 7.1.4.4.5 as follows:

"7.1.4.4.5 Transport to or from offshore oil platforms, mobile offshore drilling units and other offshore installations

Notwithstanding the stowage category indicated in column 16a of the Dangerous Goods List, UN 0124 JET PERFORATING GUNS, CHARGED, and UN 0494 JET PERFORATING GUNS, CHARGED, transported to or from offshore oil platforms, mobile offshore drilling units and other offshore installations may be stowed on deck in offshore well tool pallets, cradles or baskets provided that:

- .1 initiation devices shall be segregated from each other and from any jet perforating guns in accordance with the provisions of 7.2.7, and from any other dangerous goods in accordance with the provisions of 7.2.4 and 7.6.3.2, unless otherwise approved by the competent authority;
- .2 jet perforating guns shall be securely held in place during transport;
- .3 each shaped charge affixed to any gun shall not contain more than 112 g of explosives;
- .4 each shaped charge, if not completely enclosed in glass or metal, shall be fully protected by a metal cover following installation in the gun;
- .5 both ends of jet perforating guns shall be protected by means of steel end caps allowing for pressure release in the event of fire;
- .6 the total explosive content shall not exceed 95 kg per well tool pallet, cradle or basket; and

- .7 where more than one well tool pallet, cradle or basket is stowed "on deck", a minimum horizontal distance of 3 m shall be observed between them."

7.1.4.6 After 7.1.4.6.1, insert a new provision of 7.1.4.7 as follows:

"7.1.4.7 Stowage of stabilized dangerous goods

Substances, for which the word "STABILIZED" is added as part of the proper shipping name of the substances in accordance with 3.1.2.6, Stowage Category D and SW1 shall apply."

7.1.5 Stowage codes

Add a new SW30 as follows:

"SW30 For special stowage provisions, see 7.1.4.4.5."

**Chapter 7.2
General segregation provisions**

7.2.2 Definitions

7.2.2.2 In sub-paragraph .2, replace "risk" with "hazard".

7.2.3 Segregation provisions

7.2.3.3 Replace "risk" with "hazard", twice.

7.2.3.4 Replace "risk" with "hazard", replace "risks" with "hazards", and replace the sentence "segregation as for class 5.1, but "separated from" class 7." with "SG6 (segregation as for class 5.1), and SG19 (stow "separated from" class 7).".

7.2.4 Segregation table

7.2.4 In the third paragraph, replace "risk" with "hazard".

7.2.5 Segregation groups

7.2.5.1 Amend existing paragraph 7.2.5.1 to read as follows:

"7.2.5.1 For the purpose of segregation, dangerous goods having certain similar chemical properties have been grouped together in segregation groups as listed in 7.2.5.2. The entries allocated to these segregation groups are listed in 3.1.4.4 and are identified by a segregation group code in column 16b of the Dangerous Goods List."

7.2.5.2 Replace paragraph 7.2.5.2 with the following:

"7.2.5.2 The segregation group codes given in column 16b of the Dangerous Goods List are as specified below:

Segregation Group Code	Segregation Group	Description
SGG1	1	acids
SGG1a	1, entries marked *	* identifies strong acids
SGG2	2	ammonium compounds
SGG3	3	bromates
SGG4	4	chlorates
SGG5	5	chlorites
SGG6	6	cyanides
SGG7	7	heavy metals and their salts (including their organometallic compounds)
SGG8	8	hypochlorites
SGG9	9	lead and its compounds
SGG10	10	liquid halogenated hydrocarbons
SGG11	11	mercury and mercury compounds
SGG12	12	nitrites and their mixtures
SGG13	13	perchlorates
SGG14	14	permanganates
SGG15	15	powdered metals
SGG16	16	peroxides
SGG17	17	azides
SGG18	18	alkalis

7.2.6 Special segregation provisions and exemptions

7.2.6.1 Replace "risk" with "hazard".

7.2.6.2 Under "For example", replace the sentence "segregation as for class 3, but "away from" classes 4.1 and 8." with "SG5 ("segregation as for class 3)", "SG8 (stow "away from" class 4.1)" and "SG13 (stow "away from class 8)"".

7.2.6.3 In provision .2, replace the last sentence to read "Substances within the same table 7.2.6.3.1, 7.2.6.3.2 or 7.2.6.3.3 are compatible with one another.". After .2, add a new provision .3 as follows:

".3 to substances within the table 7.2.6.3.4, except that due regard shall continue to be taken of the dangerous reactions specified in the provisions of 7.2.6.1.1 to 7.2.6.1.4."

In tables 7.2.6.3.1, 7.2.6.3.2 and 7.2.6.3.3, in the title of column 4, replace "subsidiary risk(s)" with "subsidiary hazard(s)", respectively.

7.2.6.3.3 After the existing table 7.2.6.3.3, insert a new table 7.2.6.3.4 as follows:

"Table 7.2.6.3.4

UN*	Proper Shipping Name	Class	Subsidiary Hazard(s)	Packing group
3101	ORGANIC PEROXIDE TYPE B, LIQUID	5.2	1 and/or 8	-
3102	ORGANIC PEROXIDE TYPE B, SOLID	5.2	1 and/or 8	-
3103	ORGANIC PEROXIDE TYPE C, LIQUID	5.2	None or 8	-
3104	ORGANIC PEROXIDE TYPE C, SOLID	5.2	None or 8	-
3105	ORGANIC PEROXIDE TYPE D, LIQUID	5.2	None or 8	-
3106	ORGANIC PEROXIDE TYPE D, SOLID	5.2	None or 8	-

UN*	Proper Shipping Name	Class	Subsidiary Hazard(s)	Packing group
3107	ORGANIC PEROXIDE TYPE E, LIQUID	5.2	None or 8	-
3108	ORGANIC PEROXIDE TYPE E, SOLID	5.2	None or 8	-
3109	ORGANIC PEROXIDE TYPE F, LIQUID	5.2	None or 8	-
3110	ORGANIC PEROXIDE TYPE F, SOLID	5.2	None or 8	-
3111	ORGANIC PEROXIDE TYPE B, LIQUID, TEMPERATURE CONTROLLED	5.2	1 and/or 8	-
3112	ORGANIC PEROXIDE TYPE B, SOLID, TEMPERATURE CONTROLLED	5.2	1 and/or 8	-
3113	ORGANIC PEROXIDE TYPE C, LIQUID, TEMPERATURE CONTROLLED	5.2	None or 8	-
3114	ORGANIC PEROXIDE TYPE C, SOLID, TEMPERATURE CONTROLLED	5.2	None or 8	-
3115	ORGANIC PEROXIDE TYPE D, LIQUID, TEMPERATURE CONTROLLED	5.2	None or 8	-
3116	ORGANIC PEROXIDE TYPE D, SOLID, TEMPERATURE CONTROLLED	5.2	None or 8	-
3117	ORGANIC PEROXIDE TYPE E, LIQUID, TEMPERATURE CONTROLLED	5.2	None or 8	-
3118	ORGANIC PEROXIDE TYPE E, SOLID, TEMPERATURE CONTROLLED	5.2	None or 8	-
3119	ORGANIC PEROXIDE TYPE F, LIQUID, TEMPERATURE CONTROLLED	5.2	None or 8	-
3120	ORGANIC PEROXIDE TYPE F, SOLID, TEMPERATURE CONTROLLED	5.2	None or 8	-
1325	FLAMMABLE SOLID, ORGANIC, N.O.S. with a technical name as listed in 2.5.3.2.4 under "exempt"	4.1	None	II, III

* Except for substances with the technical name PEROXYACETIC ACID

7.2.6.4 Renumber the exiting paragraph 7.2.6.4 as new paragraph 7.2.6.5. Insert a new paragraph 7.2.6.4 as follows:

"7.2.6.4 Notwithstanding table 7.2.6.3.2.4, due regard shall continue to be taken of the dangerous reactions specified in the provisions of 7.2.6.1.1 to 7.2.6.1.4."

7.2.8 Segregation codes

7.2.8 In the entry for SG1, replace the description as follows:

"For packages carrying a subsidiary hazard label of class 1, segregation as for class 1, division 1.3. However, in relation to goods of class 1, segregation as for the primary hazard."

and amend the description of the following SG codes in 7.2.8 to include the corresponding SGG code for the segregation groups as follows:

Segregation Code	Description
SG20	Stow "away from" SGG1 – acids.
SG21	Stow "away from" SGG18 – alkalis.
SG24	Stow "away from" SGG17 – azides.
SG28	Stow "away from" SGG2 – ammonium compounds and explosives containing ammonium compounds or salts.
SG30	Stow "away from" SGG7 – heavy metals and their salts.
SG31	Stow "away from" SGG9 – lead and its compounds.

Segregation Code	Description
SG32	Stow "away from" SGG10 – liquid halogenated hydrocarbons.
SG33	Stow "away from" SGG15 – powdered metals.
SG34	When containing ammonium compounds, "away from" SGG4 – chlorates or SGG13 – perchlorates and explosives containing chlorates or perchlorates.
SG35	Stow "separated from" SGG1 – acids.
SG36	Stow "separated from" SGG18 – alkalis.
SG38	Stow "separated from" SGG2 – ammonium compounds.
SG39	Stow "separated from" SGG2 – ammonium compounds other than AMMONIUM PERSULPHATE (UN 1444).
SG40	Stow "separated from" SGG2 – ammonium compounds other than mixtures of ammonium persulphates and/or potassium persulphates and/or sodium persulphates.
SG42	Stow "separated from" SGG3 – bromates.
SG45	Stow "separated from" SGG4 – chlorates.
SG47	Stow "separated from" SGG5 – chlorites.
SG49	Stow "separated from" SGG6 – cyanides.
SG51	Stow "separated from" SGG8 – hypochlorites.
SG54	Stow "separated from" SGG11 – mercury and mercury compounds.
SG56	Stow "separated from" SGG12 – nitrites.
SG58	Stow "separated from" SGG13 – perchlorates.
SG59	Stow "separated from" SGG14 – permanganates.
SG60	Stow "separated from" SGG16 – peroxides.
SG61	Stow "separated from" SGG15 – powdered metals.
SG70	For arsenic sulphides, "separated from" SGG1 – acids.
SG75	Stow "separated from" SGG1a – strong acids.

Add three new segregation codes as follows:

SG76	Segregation as for class 7.
SG77	Segregation as for class 8. However, in relation to class 7, no segregation needs to be applied.
SG78	Stow "separated longitudinally by an intervening complete compartment or hold from" division 1.1, 1.2, and 1.5.

Annex

In the examples of the Annex, paragraphs 1.1, 3.2 and 4.2, replace "risk" with "hazard".

Chapter 7.3 Consigning operations concerning the packing and use of cargo transport units (CTUs) and related provisions

7.3.4 Segregation provisions within cargo transport units

7.3.4.2.1 Replace "risk" with "hazard".

7.3.4.2.2.3 Replace "risk" with "hazard".

7.3.7 Cargo transport units under temperature control

Replace the existing provisions of 7.3.7 with the following:

"7.3.7 Cargo transport units under temperature control

7.3.7.1 Preamble

7.3.7.1.1 If the temperature of certain substances (such as organic peroxides and polymerizing or self-reactive substances) exceeds a value which is typical of the substance as packaged for transport, a self-accelerating decomposition or polymerization possibly of explosive violence, may result. To prevent such decomposition or polymerization, it is necessary to control the temperature of such substances during transport. Other substances not requiring temperature control for safety reasons may be transported under controlled temperature conditions for commercial reasons.

7.3.7.1.2 The provisions for the temperature control of certain specified substances are based on the assumption that the temperature in the immediate surroundings of the cargo does not exceed 55°C during transport and attains this value for a relatively short time only during each period of 24 h.

7.3.7.2 General provisions

7.3.7.2.1 Where a number of packages containing self-reactive substances, organic peroxides and polymerizing substances are loaded in a closed cargo transport unit, the total quantity of substance, the type and number of packages and the stacking arrangement shall not create an explosion hazard.

7.3.7.2.2 These provisions apply to certain self-reactive substances when required by 2.4.2.3.4, and certain organic peroxides when required by 2.5.3.4.1 and certain polymerizing substances when required by 2.4.2.5.2 or special provision 386 of chapter 3.3 which may only be transported under conditions where the temperature is controlled.

7.3.7.2.3 These provisions also apply to the transport of substances for which:

- .1 the proper shipping name as indicated in column 2 of the Dangerous Goods List of chapter 3.2 or according to 3.1.2.6 contains the word "STABILIZED"; and
- .2 the self-accelerating decomposition temperature (SADT) or the self-accelerating polymerization temperature (SAPT)⁵ determined for the substance (with or without chemical stabilization) as offered for transport is:
 - .1 50°C or less for single packagings and IBCs; or
 - .2 45°C or less for portable tanks.

⁵ The SAPT shall be determined in accordance with the test procedures established for the SADT for self reactive substances in accordance with part II, section 28 of the Manual of Tests and Criteria.

When chemical inhibition is not used to stabilize a reactive substance which may generate dangerous amounts of heat and gas, or vapour, under normal transport conditions, these substances need to be transported under temperature control. These provisions do not apply to substances which are stabilized by the addition of chemical inhibitors such that the SADT or the SAPT is greater than that prescribed in paragraphs 7.3.7.2.3.2.1 or 7.3.7.2.3.2.2.

7.3.7.2.4 In addition, if a self-reactive substance or organic peroxide or a substance the proper shipping name of which contains the word "STABILIZED" and which is not normally required to be transported under temperature control is transported under conditions where the temperature may exceed 55°C, it may require temperature control.

7.3.7.2.5 The "control temperature" is the maximum temperature at which the substance can be safely transported. In the event of loss of temperature control, it may be necessary to implement emergency procedures. The "emergency temperature" is the temperature at which such procedures shall be implemented.

7.3.7.2.6 Derivation of control and emergency temperatures

Type of receptacle	SADT ^a /SAPT ^a	Control temperature	Emergency temperature
Single packagings and IBCs	20°C or less over 20°C to 35°C over 35°C	20°C below SADT/SAPT 15°C below SADT/SAPT 10°C below SADT/SAPT	10°C below SADT/SAPT 10°C below SADT/SAPT 5°C below SADT/SAPT
Portable tanks	≤ 45°C	10°C below SADT/SAPT	5°C below SADT/SAPT

^a i.e. the SADT/SAPT of the substance as packed for transport.

7.3.7.2.7 The control and emergency temperatures are derived using the table in 7.3.7.2.6 from the self-accelerating decomposition temperature (SADT) or from the self-accelerating polymerization temperature (SAPT) which are defined as the lowest temperatures at which self-accelerating decomposition or self-accelerating polymerization may occur with a substance in the packaging, IBC or portable tank as used in transport. An SADT or SAPT shall be determined in order to decide if a substance shall be subjected to temperature control during transport. Provisions for the determination of the SADT and SAPT are given in 2.4.2.3.4, 2.5.3.4.2 and 2.4.2.5.2 for self-reactive substances, organic peroxides and polymerizing substances and mixtures, respectively.

7.3.7.2.8 Control and emergency temperatures, where appropriate, are provided for currently assigned self-reactive substances in 2.4.2.3.2.3 and for currently assigned organic peroxide formulations in 2.5.3.2.4.

7.3.7.2.9 The actual transport temperature may be lower than the control temperature but shall be selected so as to avoid dangerous separation of phases.

7.3.7.3 Transport under temperature control

7.3.7.3.1 Prior to the use of cargo transport unit, the refrigeration system shall be subjected to a thorough inspection and a test to ensure that all parts are functioning properly.

7.3.7.3.2 Refrigerant gas shall only be replaced in accordance with the manufacturer's operating instructions for the refrigeration system. Prior to filling replacement refrigerant gas, a certificate of analysis from the supplier shall be obtained and checked to confirm that the gas meets refrigeration system specifications. In addition, if concerns about the integrity of the supplier and/or the refrigerant gas supply chain give rise to suspicion of contamination of the gas, the replacement refrigerant gas shall be checked for possible contamination prior to use. If the refrigerant gas is found to be contaminated, it shall not be used, the cylinder shall be plainly marked "CONTAMINATED", the cylinder shall be sealed and sent for recycling or disposal, and notification shall be given to the refrigerant gas supplier and authorized distributor and competent authority(ies) of the countries in which the supplier and distributor reside, as appropriate. The date of last refrigerant replacement shall be included in the maintenance record of the refrigeration system.

Note: Contamination can be checked by using flame halide lamp tests, gas sniffer tube tests or gas chromatography. Replacement refrigerant gas cylinders may be marked with the test result and the date of testing.

7.3.7.3.3 When a cargo transport unit is to be filled with packages containing substances having different control temperatures, all packages shall be pre-cooled to avoid exceeding the lowest control temperature.

7.3.7.3.3.1 In the event that non-temperature-controlled substances are transported in the same cargo transport unit as temperature controlled substances, the package(s) containing substances that require refrigeration shall be stowed in such a way as to be readily accessible from the door(s) of the cargo transport unit.

7.3.7.3.3.2 If substances with different control temperatures are loaded in the cargo transport unit, the substances with the lowest control temperature shall be stowed in the most readily accessible position from the doors of the cargo transport unit.

7.3.7.3.3.3 The door(s) shall be capable of being opened readily in case of emergency so that the package(s) can be removed. The carrier shall be informed about the location of the different substances within the unit. The cargo shall be secured to prevent packages from falling when the door(s) is (are) opened. The packages shall be securely stowed so as to allow for adequate air circulation throughout the cargo.

7.3.7.3.4 The master shall be provided with operating instructions for the refrigeration system, procedures to be followed in the event of loss of control and instructions for regular monitoring of operating temperatures. Spare parts shall be carried for the systems described in 7.3.7.4.2.3, 7.3.7.4.2.4 and 7.3.7.4.2.5 so that they are available for emergency use should the refrigeration system malfunction during transport.

7.3.7.3.5 In cases where it may not be possible to carry specific substances according to the general provisions, full details of the proposed method of shipment shall be submitted to the competent authority concerned for approval.

7.3.7.4 Methods of temperature control

7.3.7.4.1 The suitability of a particular means of temperature control for transport depends on a number of factors. Among those to be considered are:

- .1 the control temperature(s) of the substance(s) to be transported;
- .2 the difference between the control temperature and the anticipated ambient temperature conditions;
- .3 the effectiveness of the thermal insulation of the cargo transport unit. The overall heat transfer coefficient shall not be more than 0.4 W/(m²·K) for cargo transport units and 0.6 W/(m²·K) for tanks; and
- .4 the duration of the voyage.

7.3.7.4.2 Suitable methods for preventing the control temperature being exceeded are, in order of increasing capability:

- .1 thermal insulation, provided that the initial temperature of the substance is sufficiently below the control temperature;
- .2 thermal insulation with a cooling method, provided that:
 - an adequate quantity of non-flammable coolant (such as liquid nitrogen or solid carbon dioxide), allowing a reasonable margin for delay, is carried;
 - liquid oxygen or air is not used as a coolant;
 - there is a uniform cooling effect even when most of the coolant has been consumed; and
 - the need to ventilate the cargo transport unit before entering is clearly indicated by a warning on the door(s) (see 5.5.3);
- .3 single mechanical refrigeration, provided that the unit is thermally insulated and, for substances with a flashpoint lower than the sum of the emergency temperature plus 5°C, explosion proof electrical fittings are used within the cooling compartment to prevent ignition of flammable vapours from the substances;
- .4 combined mechanical refrigeration system and cooling method, provided that:
 - the two systems are independent of one another; and
 - the provisions of 7.3.7.4.2.2 and 7.3.7.4.2.3 are met;

- .5 dual mechanical refrigeration system, provided that:
- apart from the integral power supply unit, the two systems are independent of one another;
 - each system alone is capable of maintaining adequate temperature control; and
 - for substances with a flashpoint lower than the sum of the emergency temperature plus 5°C, explosion proof electrical fittings are used within the coolant compartment to prevent ignition of flammable vapours from the substances.

7.3.7.4.3 The refrigeration equipment and its controls shall be readily and safely accessible and all electrical connections weatherproof. Inside the cargo transport unit, the temperature shall be measured continuously. The measurement shall be taken in the air space of the unit, using two measuring devices independent of each other. The type and place of the measuring devices shall be selected so that their results are representative of the actual temperature in the cargo. At least one of the two measurements shall be recorded in such a manner that temperature changes are easily detectable. The temperature shall be checked every four to six hours and logged.

7.3.7.4.4 If substances are transported with a control temperature less than +25°C, the cargo transport unit shall be equipped with a visible and audible alarm effectively set at no higher than the control temperature. The alarms shall work independently from the power supply of the refrigeration system.

7.3.7.4.5 If an electrical supply is necessary for the cargo transport unit to operate the refrigeration or heating equipment, it shall be ensured that the correct connecting plugs are fitted. For under deck stowage, plugs shall, as a minimum, be of an IP 55 enclosure in accordance with IEC Publication 60529,⁶ with the specification for electrical equipment of temperature class T4 and explosion group IIB. However, when stowed on deck, these plugs shall be of an IP 56 enclosure in accordance with IEC Publication 60529.⁶

7.3.7.5 Special provisions for self-reactive substances, organic peroxides and polymerizing substances

7.3.7.5.1 For self-reactive substances (class 4.1) identified by UN Nos. 3231 and 3232 and organic peroxides (class 5.2) identified by UN Nos. 3111 and 3112, one of the following methods of temperature control described in 7.3.7.4.2 shall be used:

- .1 the methods referred to under 7.3.7.4.2.4 or 7.3.7.4.2.5; or
- .2 the method referred to under 7.3.7.4.2.3 when the maximum ambient temperature to be expected during transport is at least 10°C below the control temperature.

7.3.7.5.2 For self-reactive substances (class 4.1) identified by UN Nos. 3233 to 3240, organic peroxides (class 5.2) identified by UN Nos. 3113 to 3120 and

⁶ Reference is made to the Recommendations published by the International Electrotechnical Commission (IEC) and, in particular, to publication 60529 Classification of Degrees of Protection provided by Enclosures.

polymerizing substances identified by UN Nos. 3533 and 3534 or for those substances where the words "TEMPERATURE CONTROLLED" are added as part of the proper shipping name in accordance with 3.1.2.6.2, one of the following methods shall be used:

- .1 the methods referred to under 7.3.7.4.2.4 or 7.3.7.4.2.5;
- .2 the method referred to under 7.3.7.4.2.3 when the maximum ambient temperature to be expected during transport does not exceed the control temperature by more than 10°C; or
- .3 for short international voyages only (see 1.2.1), the methods referred to under 7.3.7.4.2.1 and 7.3.7.4.2.2 when the maximum ambient temperature to be expected during transport is at least 10°C below the control temperature.

7.3.7.6 Special provisions for flammable gases or liquids having a flashpoint less than 23°C c.c. transported under temperature control

7.3.7.6.1 When flammable gases or liquids having a flashpoint less than 23°C c.c. are packed or loaded in a cargo transport unit equipped with a refrigerating or heating system, the cooling or heating equipment shall comply with 7.3.7.4.

7.3.7.6.2 When flammable liquids having a flashpoint less than 23°C c.c. and not requiring temperature control for safety reasons are transported under temperature control conditions for commercial reasons, explosion proof electrical fittings are required except when the substances are pre-cooled to and transported at a control temperature of at least 10°C below the flashpoint. In case of failure of a non-explosion proof refrigerating system, the system shall be disconnected from the power supply. It shall not be reconnected if the temperature has risen to a temperature less than 10°C below the flashpoint.

7.3.7.6.3 When flammable gases not requiring temperature control for safety reasons are transported under temperature control conditions for commercial reasons, explosion proof electrical fittings are required.

7.3.7.7 Special provisions for vehicles transported on ships

Insulated, refrigerated and mechanically refrigerated vehicles shall conform to the provisions of 7.3.7.4 and 7.3.7.5 as appropriate. In addition, the refrigerating appliance of a mechanically refrigerated vehicle shall be capable of operating independently of the engine used to propel the vehicle.

7.3.7.8 Approval

The competent authority may approve that less stringent means of temperature control may be used or that artificial refrigeration may be dispensed with under conditions of transport such as short international voyages or low ambient temperatures.

"

Chapter 7.4

Stowage and segregation on containerships

7.4.2 Stowage requirements

7.4.2.4.1 Replace "risk" with "hazard", twice.

7.4.2.3.2 Replace the existing paragraph with the following:

"7.4.2.3.2 A container with flammable gases or flammable liquids having a flashpoint of less than 23°C c.c. transported on deck shall be stowed at least 2.4 m horizontally and projected vertically away from any potential source of ignition."

Chapter 7.6

Stowage and segregation on general cargo ships

7.6.2 Stowage and handling provisions

7.6.2.3.1 Replace "risk" with "hazard", twice.

7.6.3 Segregation provisions

7.6.3.1.2 Replace "risk" with "hazard".

Chapter 7.7

Shipborne barges on barge-carrying ships

7.7.3 Barge loading

7.7.3.6 Replace "risk" with "hazard".

7.7.3.7.3 Replace "risk" with "hazard".

Chapter 7.8

Special requirements in the event of an incident and fire precautions involving dangerous goods

7.8.1 General

7.8.1.1 Add "Revised" before "*Emergency Response Procedures for Ships Carrying Dangerous Goods (EmS Guide)*".

7.8.4 Special provisions for incidents involving radioactive material

7.8.4.4 Add "Revised" before "*Emergency Response Procedures for Ships Carrying Dangerous Goods (EmS Guide)*".

Chapter 7.9

Exemptions, approvals and certificates

7.9.3 Contact information for the main designated national competent authorities

Updated the following contact information for national competent authority regarding the IMDG Code:

AZERBAIJAN	<p>Ministry of Emergency Situations of the Republic of Azerbaijan State Agency for Safe Working in Industry and Mountain-Mine Control 26 Najafgulu Rafiyev Street Baku Khatai Region AZ 1025 Azerbaijan Telephone: +994 12 512 1501 Telefax: +994 12 512 2501 Email: dag-meden@fhn.gov.az</p>
CHILE	<p>Dirección General del Territorio Marítimo y de Marina Mercante Empcontra Milton Pizarro Barrella Dirección de Seguridad y Operaciones Marítimas Departamento Policía Marítima y Prevención de Riesgos División Cargas Peligrosas Subida Cementerio No.300, Playa Ancha Valparaíso 2520000 Chile Telephone: +56 32 220 8607 +56 32 220 8656 Email: mpizarrob@directemar.cl mmunoza@directemar.cl gsage@directemar.cl Website: http://www.directemar.cl</p>
ECUADOR	<p>SUBSECRETARIA DE PUERTOS Y TRANSPORTE MARITIMO Y FLUVIAL ING. IVAN SOLORZANO VILLACIS EXPERTO EN INFRAESTRUCTURA PORTUARIA CDLA. LOS CEIBOS - AV. DEL BOMBERO Y LEPOLDO CARRERA - EDIF. "GRACE" EP-PETROECUADOR - 1ER PISO GUAYAQUIL GUAYAS Ecuador Telephone: +593 4259 2080 Email: isolorzano@mtop.gob.ec Website: http://www.obraspublicas.gob.ec</p> <p>SUBSECRETARIA DE PUERTOS Y TRANSPORTE MARITIMO Y FLUVIAL (SPTMF) Ing. Richard Villacís Jefe de Contaminación Av. del Bombero y Leopoldo Carrera – Cdl. Ceibos. Edif. EP-Petroecuador. 1er piso Guayaquil Ecuador Telephone: +593 6272 3008 Email: rvillacis@mtop.gob.ec Website: https://www.obraspublicas.gob.ec</p>

	<p>Superintendencia del Terminal Petrolero de "El Salitral" (SUINSA) CPNV(SP) Raúl Aguirre Baldeón Superintendente Terminal Petrolero de el Salitral Guayaquil Ecuador Telephone: +593 4550 4901 Telefax: +593 4250 4901 Ext. 102/109 Email: suinsa_operaciones@mtop.gob.ec suinsa_radio@mtop.gob.ec raguirreb2000@hotmail.com</p> <p>Superintendencia del Terminal Petrolero de la Libertad (SUINLI) CPNV(SP) Roberto Ruiz Johns Superintendente Terminal Petrolero de la Libertad La Libertad Ecuador Telephone: +593 4278 5785 Telefax: +593 4278 5781 Email: suinli_operaciones@mtop.gob.ec suinli_radio@mtop.gob.ec r Ruiz@mtop.gob.ec</p>
FAROES (THE)	<p>Sjóvinnustýrið Faroese Maritime Authority P.O. Box 26 Á Hálsi 1, P.O. Box 26 Sørvágur FO-380 Faroes, DenmarkInni á Støð, P. O. Box 26 FO-375 Miðvágur, Faroe Islands Telephone: +298 35 5600 Telefax: +298 35 5601 Email: fma@fma.fo Website: https://www.fma.fo</p>
FRANCE	<p>Ministère de la Transition Ecologique et Solidaire Adjoint au Chef de la mission transport de matières dangereuses Mr Pierre DUFOUR MTES – DGPR – Mission Transport de matières dangereuses (MTMD) Tour Séquoia - Pièce 23-39 92055 Paris La Défense Cedex France Telephone: +33 1 4081 1496 Telefax: +33 1 4081 8641 Email: pierre.dufour@developpement-durable.gouv.fr</p> <p><i>Organizations authorized for packagings, large packagings and intermediate bulk containers (IBCs)⁷</i></p>

	<ol style="list-style-type: none">1 Association des Contrôleurs Indépendants (ACI) 22, rue de l'Est 92100 Boulogne-Billancourt France2 APAVE 191, rue de Vaugirard 75738 Paris Cedex 15 France3 Association pour la Sécurité des Appareils à Pression (ASAP) Continental Square – BP 16757 95727 Roissy-Charles de Gaulle Cedex France4 Bureau de Vérifications Techniques (BVT) ZAC de la Cerisaie – 31, rue de Montjean 94266 Fresnes Cedex France5 Bureau Veritas 67-71, rue du Château 92200 Neuilly-sur-Seine France6 Centre Français de l'Emballage Agréé (CeFEA) 5, rue Janssen 75019 Paris France7 Laboratoire d'Études et de Recherches des Emballages Métalliques (LEREM) Marches de l'Oise – 100, rue Louis-Blanc 60160 Montataire France8 Laboratoire National de métrologie et d'Essais (LNE) 1, rue Gaston-Boissier 75724 Paris Cedex 15 France <p><i>Organizations authorized for pressure receptacles⁷</i></p> <ol style="list-style-type: none">1 Association des Contrôleurs Indépendants (ACI) (Voir coordonnées ci-dessus)2 APAVE (Voir coordonnées ci-dessus)3 Association pour la Sécurité des Appareils à Pression (ASAP) (Voir coordonnées ci-dessus)4 Bureau Veritas (Voir coordonnées ci-dessus)
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	<p><i>Organizations authorized for tanks and multiple-element gas containers (MEGCs)⁷</i></p> <p>1 Association des Contrôleurs Indépendants (ACI) (Voir coordonnées ci-dessus)</p> <p>2 APAVE (Voir coordonnées ci-dessus)</p> <p>3 Bureau Veritas (Voir coordonnées ci-dessus)</p>
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IRAN (ISLAMIC REPUBLIC OF)	<p>Ports and Maritime Organization PMO. No.1. Shahidi St. Haghani Exp'way Vanak Sq. Tehran 1518663111 Iran (Islamic Republic of)</p> <p>Telephone: +98 21 8493 2081/2 Email: info@pmo.ir</p>
ITALY	<p>Comando Generale del Corpo delle Capitanerie di Porto Lt. Cdr. (IT.C.G.) Giuseppe Notte Ufficio II - Merci Pericolose Via dell'Arte, 16 Roma 00144 Italy</p> <p>Telephone: +39 06 5908 4267 +39 06 5908 4652 Telefax: +39 06 5908 4630 Email: cgcp@pec.mit.gov.it segreteria.reparto6@mit.gov.it Website: http://www.guardiacostiera.gov.it</p>

⁷ Contact competent authority for further details of areas of authorization.

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<p>MEXICO</p>	<p><i>Stowage, segregation, labelling and documentation of goods</i> Coordinación General de Puertos y Marina Mercante Secretaría de Comunicación y Transportes Boulevard Adolfo López Mateos No. 1990 Col. Los Alpes Tlacopac, Del. Álvaro Obregón, C.P. 01010 México, Distrito Federal Telephone: +52 55 5723 9300 Email: coordgral.cgpmmm@sct.gob.mx Coordinador General: Ruiz de Teresa Guillermo Raúl</p> <p><i>Receipt and processing of notifications in the event of a package falling overboard</i> Secretaría de Marina Eje 2 Oriente, Tramo Heroica Escuela Naval Militar No. 861 Colonia Los Cipreses, C.P. 04830 México, Distrito Federal Telephone: +52 55 5624 6500 (extention: 6388) Email: ayjemg@semar.gob.mx Jefe del Estado Mayor General de la Armada de México: Vicealmirante C.G. DEM Joaquín Zetina Angulo</p> <p><i>Laboratory testing of packagings containing dangerous goods</i> Entidad Mexicana de Acreditación, A.C. Mariano Escobedo, No.564 Col. Nueva Anzures, Delegación Miguel Hidalgo C.P. 11590, Ciudad de México México Telephone: +52 55 9148 4300 Email: Maribel.lopez@ema.org.mx Directora Ejecutiva: Mtra. María Isabel López Martínez</p>

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SINGAPORE	<p>Maritime and Port Authority of Singapore Operations Divison, Assistant Director (Marine Environment & Safety) Capt Charles Alexandar De Souza #19-00 Tanjong Pagar Complex 7B Keppel Road, Singapore 089055 Telephone: +65 6325 2420 Telefax: +65 6325 2454 Email: Charles_Alexandar_De_Souza@mpa.gov.sg</p>
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	<p>Packing, Testing and Certification Turkish Standards Institution (TSE) 100. Yıl Bulvarı No:99 Kat:2 Ostim/Ankara Turkey Telephone: +90 312 592 5000/5039 Fax: +90 312 592 5005 Email: oolper@tse.org.tr</p> <p>Türk Loydu Vakfı İktisadi İşletmesi Tersaneler Caddesi 26, 34944 Turkey Telephone: +90 216 581 3700 Fax: +90 216 581 3800 Email: info@turkloydu.org</p>
<p>UNITED KINGDOM (Isle of Man)</p>	<p>Department of Economic Development Mr David Morter Isle of Man Ship Registry St Georges Court Upper Church Street Douglas Douglas IM1 1EE Isle of Man (United Kingdom) Telephone: +44 1624 688500 Email: marine.survey@gov.im Website: http://www.iomshipregistry.com</p>
<p>UNITED STATES</p>	<p>US Department of Transportation Pipeline and Hazardous Materials Safety Administration International Program Coordinator 1200 New Jersey Ave S.E. Washington, D.C. 20590 United States Telephone: +1 202 366 8553 Telefax: +1 202 366 7435 Email: infocntr@dot.gov</p> <p>United States Coast Guard – Commandant (CG-ENG-5) U.S. Coast Guard, Stop 7509 Attn: Chief, Hazardous Materials Division 2703 Martin Luther King Jr. Ave. SE Washington, D.C. 20593-7509 United States Telephone: +1 202 372 1420 Email: hazmatstandards@uscg.mil</p>

Appendix A
List of generic and N.O.S. proper shipping names

In the List of generic and N.O.S. proper shipping names, header, column 2, replace "risk" with "hazard".

In the table, for class 2.1, under "General entries", after 3510, add the following new entry:

2.1	See 2.0.6.6	3537	ARTICLES CONTAINING FLAMMABLE GAS, N.O.S.
-----	-------------	------	---

In the table, for class 2.2, under "General entries", after 3511, add the following new entry:

2.2	See 2.0.6.6	3538	ARTICLES CONTAINING NON-FLAMMABLE, NON-TOXIC GAS, N.O.S.
-----	-------------	------	--

In the table, for class 2.3, under "General entries", after 3512, add the following new entry:

2.3	See 2.0.6.6	3539	ARTICLES CONTAINING TOXIC GAS, N.O.S.
-----	-------------	------	---------------------------------------

In the table, for class 3, under "General entries", after 3526, add the following new entry:

3	See 2.0.6.6	3540	ARTICLES CONTAINING FLAMMABLE LIQUID, N.O.S.
---	-------------	------	--

In the table, for class 4.1, under "General entries", after 3534, add the following new entry:

4.1	See 2.0.6.6	3541	ARTICLES CONTAINING FLAMMABLE SOLID, N.O.S.
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In the table, for class 4.2, under "General entries", after 3200, add the following new entry:

4.2	See 2.0.6.6	3542	ARTICLES CONTAINING A SUBSTANCE LIABLE TO SPONTANEOUS COMBUSTION, N.O.S.
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In the table, for class 4.3, under "General entries", after 2813, add the following new entry:

4.3	See 2.0.6.6	3543	ARTICLES CONTAINING A SUBSTANCE WHICH EMITS FLAMMABLE GAS IN CONTACT WITH WATER, N.O.S.
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In the table, for class 5.1, under "General entries", after 3139, add the following new entry:

5.1	See 2.0.6.6	3544	ARTICLES CONTAINING OXIDIZING SUBSTANCE, N.O.S.
-----	-------------	------	---

In the table, for class 5.2, after "Specific entries", add a new section "General entries" with the following new entry:

5.2	See 2.0.6.6	3545	ARTICLES CONTAINING ORGANIC PEROXIDE, N.O.S.
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In the table, for class 6.1, under "General entries", after 3489, add the following new entry:

6.1	4.1	3535	TOXIC SOLID, FLAMMABLE, INORGANIC, N.O.S.
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In the table, for class 6.1, under "General entries", after 3462, add the following new entry:

6.1	See 2.0.6.6	3546	ARTICLES CONTAINING TOXIC SUBSTANCE, N.O.S.
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In the table, for class 8, under "General entries", after 3267, add the following new entry:

8	See 2.0.6.6	3547	ARTICLES CONTAINING CORROSIVE SUBSTANCE, N.O.S.
---	-------------	------	---

In the table, for class 9, under "General entries", after 3335, add the following new entry:

9	See 2.0.6.6	3548	ARTICLES CONTAINING MISCELLANEOUS DANGEROUS GOODS, N.O.S
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For the entry "2-DIMETHYLAMINOETHYL ACRYLATE", in the column "Substance, material or article", add ", STABILIZED" at the end.

Insert the following new entries in alphabetical order:

<i>Substance, material or article</i>	<i>MP</i>	<i>Class</i>	<i>UN No.</i>
ARTICLES CONTAINING FLAMMABLE GAS, N.O.S.	-	2.1	3537
ARTICLES CONTAINING NON-FLAMMABLE, NON-TOXIC GAS, N.O.S.	-	2.2	3538
ARTICLES CONTAINING TOXIC GAS, N.O.S.	-	2.3	3539
ARTICLES CONTAINING FLAMMABLE LIQUID, N.O.S.	-	3	3540
ARTICLES CONTAINING FLAMMABLE SOLID, N.O.S.	-	4.1	3541
ARTICLES CONTAINING A SUBSTANCE LIABLE TO SPONTANEOUS COMBUSTION, N.O.S.	-	4.2	3542
ARTICLES CONTAINING A SUBSTANCE WHICH EMITS FLAMMABLE GAS IN CONTACT WITH WATER, N.O.S.	-	4.3	3543
ARTICLES CONTAINING OXIDIZING SUBSTANCE, N.O.S.	-	5.1	3544
ARTICLES CONTAINING ORGANIC PEROXIDE, N.O.S.	-	5.2	3545
ARTICLES CONTAINING TOXIC SUBSTANCE, N.O.S.	-	6.1	3546
ARTICLES CONTAINING CORROSIVE SUBSTANCE, N.O.S.	-	8	3547
ARTICLES CONTAINING MISCELLANEOUS DANGEROUS GOODS, N.O.S.	-	9	3548
DI-(4-tert-butylcyclohexyl) peroxydicarbonate, see	-	5.2	3116
Diisobutyl peroxide, see	-	5.2	3119
1-dodecene, see	-	3	2850
LITHIUM BATTERIES INSTALLED IN CARGO TRANSPORT UNIT lithium ion batteries or lithium metal batteries	-	9	3536
1-Phenylethyl hydroperoxide, see	-	5.2	3109
Phosphorothioic acid, o-[(cyanophenyl methylene) azanyl] o,o-diethyl ester, see	-	4.1	3227
TOXIC SOLID, FLAMMABLE, INORGANIC, N.O.S.	-	6.1	3535

RESOLUTION MSC.406(96)
(adopted on 13 May 2016)

**AMENDMENTS TO THE INTERNATIONAL MARITIME
DANGEROUS GOODS (IMDG) CODE**

THE MARITIME SAFETY COMMITTEE,

RECALLING Article 28(b) of the Convention on the International Maritime Organization concerning the functions of the Committee,

NOTING resolution MSC.122(75) by which it adopted the International Maritime Dangerous Goods Code ("the IMDG Code"), which has become mandatory under chapter VII of the International Convention for the Safety of Life at Sea, 1974, ("the Convention"),

NOTING ALSO article VIII(b) and regulation VII/1.1 of the Convention concerning amendment procedure for amending the IMDG Code,

HAVING CONSIDERED, at its ninety-sixth session, amendments to the IMDG Code, proposed and circulated in accordance with article VIII(b)(i) of the Convention,

1 ADOPTS, in accordance with article VIII(b)(iv) of the Convention, amendments to the IMDG Code, the text of which is set out in the annex to the present resolution;

2 DETERMINES, in accordance with article VIII(b)(vi)(2)(bb) of the Convention, that the said amendments shall be deemed to have been accepted on 1 July 2017, unless prior to that date, more than one third of the Contracting Governments to the Convention or Contracting Governments the combined merchant fleets of which constitute not less than 50% of the gross tonnage of the world's merchant fleet, have notified their objections to the amendments;

3 INVITES Contracting Governments to the Convention to note that, in accordance with article VIII(b)(vii)(2) of the Convention, the amendments shall enter into force on 1 January 2018 upon their acceptance in accordance with paragraph 2 above;

4 AGREES that Contracting Governments to the Convention may apply the aforementioned amendments in whole or in part on a voluntary basis as from 1 January 2017;

5 REQUESTS the Secretary-General, for the purposes of article VIII(b)(v) of the Convention, to transmit certified copies of the present resolution and the consolidated text of the amendments contained in the annex to all Contracting Governments to the Convention;

6 REQUESTS ALSO the Secretary-General to transmit copies of this resolution and its annex to Members of the Organization, which are not Contracting Governments to the Convention.

ANNEX

**AMENDMENTS TO THE INTERNATIONAL MARITIME
DANGEROUS GOODS (IMDG) CODE
AMENDMENT 38-16**

The complete text of the IMDG Code is replaced with the following:

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PART 1

**GENERAL PROVISIONS,
DEFINITIONS AND TRAINING**

Chapter 1.1

General provisions

1.1.0 Introductory note

It should be noted that other international and national modal regulations exist and that those regulations may recognize all or part of the provisions of this Code. In addition, port authorities and other bodies and organizations should recognize the Code and may use it as a basis for their storage and handling bye-laws within loading and discharge areas.

1.1.1 Application and implementation of the Code

1.1.1.1 The provisions contained in this Code are applicable to all ships to which the International Convention for the Safety of Life at Sea, 1974 (SOLAS), as amended, applies and which are carrying dangerous goods as defined in regulation 1 of part A of chapter VII of that Convention.

1.1.1.2 The provisions of regulation II-2/19 of that Convention apply to passenger ships and to cargo ships constructed on or after 1 July 2002.

For:

- .1 a passenger ship constructed on or after 1 September 1984 but before 1 July 2002; or
- .2 a cargo ship of 500 gross tons or over constructed on or after 1 September 1984 but before 1 July 2002; or
- .3 a cargo ship of less than 500 gross tons constructed on or after 1 February 1992 but before 1 July 2002, the requirements of regulation II-2/54 of SOLAS, as amended by resolutions MSC.1(XLV), MSC.6(48), MSC.13(57), MSC.22(59), MSC.24(60), MSC.27(61), MSC.31(63) and MSC.57(67), apply (see II-2/1.2).

For cargo ships of less than 500 gross tons constructed on or after 1 September 1984 and before 1 February 1992, it is recommended that Contracting Governments extend such application to these cargo ships as far as possible.

1.1.1.3 All ships, irrespective of type and size, carrying substances, materials or articles identified in this Code as marine pollutants are subject to the provisions of this Code.

1.1.1.4 In certain parts of this Code, a particular action is prescribed, but the responsibility for carrying out the action is not specifically assigned to any particular person. Such responsibility may vary according to the laws and customs of different countries and the international conventions into which these countries have entered. For the purpose of this Code, it is not necessary to make this assignment, but only to identify the action itself. It remains the prerogative of each Government to assign this responsibility.

1.1.1.5 Although this Code is legally treated as a mandatory instrument under chapter VII of SOLAS, as amended, the following provisions of the Code remain recommendatory:

- .1 paragraph 1.1.1.8 (Notification of infringements);
- .2 paragraphs 1.3.1.4 to 1.3.1.7 (Training);
- .3 chapter 1.4 (Security provisions) except 1.4.1.1, which is mandatory;
- .4 section 2.1.0 of chapter 2.1 (Class 1 – Explosives, Introductory notes);
- .5 section 2.3.3 of chapter 2.3 (Determination of flashpoint);
- .6 columns 15 and 17 of the Dangerous Goods List in chapter 3.2;
- .7 the segregation flow chart and example in the annex to chapter 7.2;
- .8 section 5.4.5 of chapter 5.4 (Multimodal Dangerous Goods Form), insofar as the layout of the form is concerned;

- .9 chapter 7.8 (Special requirements in the event of an incident and fire precautions involving dangerous goods);
- .10 section 7.9.3 (Contact information for the main designated national competent authorities); and
- .11 appendix B.

1.1.1.6 Application of standards

Where the application of a standard is required and there is any conflict between the standard and the provisions of this Code, the provisions of this Code take precedence. The requirements of the standard that do not conflict with the provisions of this Code shall be applied as specified, including the requirements of any other standard, or part of a standard, referenced within that standard as normative.

1.1.1.7 Transport of dangerous goods used as a coolant or conditioner

Dangerous goods, that are only asphyxiant (which dilute or replace the oxygen normally in the atmosphere), when used in cargo transport units for cooling or conditioning purposes are only subject to the provisions of section 5.5.3.

Note: When carried on board as ship's stores or equipment, these coolants and conditioners are not subject to the provisions of this Code.

1.1.1.8 Notification of infringements

When a competent authority has reasons to believe that the safety of the transport of dangerous goods is compromised as a result of serious or repeated infringements of this Code by an enterprise which has its headquarters on the territory of another competent authority, it should if necessary notify that competent authority of such infringements.

1.1.1.9 Lamps containing dangerous goods

The following lamps are not subject to this Code provided that they do not contain radioactive material and do not contain mercury in quantities above those specified in special provision 366 of chapter 3.3:

- .1 lamps that are collected directly from individuals and households when transported to a collection or recycling facility;
- .2 lamps each containing not more than 1 g of dangerous goods and packaged so that there is not more than 30 g of dangerous goods per package, provided that:
 - (i) the lamps are manufactured according to a certified quality management system;

Note: The application of ISO 9001:2008 may be considered acceptable for this purpose.

and

 - (ii) each lamp is either individually packed in inner packagings, separated by dividers, or surrounded with cushioning material to protect the lamps and packed into strong outer packagings meeting the general provisions of 4.1.1.1 and capable of passing a 1.2 m drop test.
- .3 used, damaged or defective lamps each containing not more than 1 g of dangerous goods with not more than 30 g of dangerous goods per package when transported from a collection or recycling facility. The lamps shall be packed in strong outer packagings sufficient for preventing release of the contents under normal conditions of transport meeting the general provisions of 4.1.1.1 and that are capable of passing a drop test of not less than 1.2 m.

Note: Lamps containing radioactive material are addressed in 2.7.2.2.2.2.

- .4 lamps containing only gases of class 2.2 (according to 2.2.2.2) provided they are packaged so that the projectile effects of any rupture of the bulb will be contained within the package.

1.1.2 Conventions

1.1.2.1 International Convention for the Safety of Life at Sea, 1974

Part A of chapter VII of the International Convention for the Safety of Life at Sea, 1974 (SOLAS), as amended, deals with the carriage of dangerous goods in packaged form, and is reproduced in full:

Chapter VII Carriage of dangerous goods

Part A Carriage of dangerous goods in packaged form

Regulation 1

Definitions

For the purpose of this chapter, unless expressly provided otherwise:

- 1** *IMDG Code* means the International Maritime Dangerous Goods (IMDG) Code adopted by the Maritime Safety Committee of the Organization by resolution MSC.122(75), as may be amended by the Organization, provided that such amendments are adopted, brought into force and take effect in accordance with the provisions of article VIII of the present Convention concerning the amendment procedures applicable to the annex other than chapter I.
- 2** *Dangerous goods* mean the substances, materials and articles covered by the IMDG Code.
- 3** *Packaged form* means the form of containment specified in the IMDG Code.

Regulation 2

Application

- 1** Unless expressly provided otherwise, this part applies to the carriage of dangerous goods in packaged form in all ships to which the present regulations apply and in cargo ships of less than 500 gross tonnage.
- 2** The provisions of this part do not apply to ships' stores and equipment.
- 3** The carriage of dangerous goods in packaged form is prohibited except in accordance with the provisions of this chapter.
- 4** To supplement the provisions of this part, each Contracting Government shall issue, or cause to be issued, detailed instructions on emergency response and medical first aid relevant to incidents involving dangerous goods in packaged form, taking into account the guidelines developed by the Organization.

Regulation 3

Requirements for the carriage of dangerous goods

The carriage of dangerous goods in packaged form shall be in compliance with the relevant provisions of the IMDG Code.

Regulation 4

Documents

- 1** Transport information relating to the carriage of dangerous goods in packaged form and the container/vehicle packing certificate shall be in accordance with the relevant provisions of the IMDG Code and shall be made available to the person or organization designated by the port State authority.
- 2** Each ship carrying dangerous goods in packaged form shall have a special list, manifest or stowage plan setting forth, in accordance with the relevant provisions of the IMDG Code, the dangerous goods on board and the location thereof. A copy of one of these documents shall be made available before departure to the person or organization designated by the port State authority.

Regulation 5

Cargo Securing Manual

Cargo, cargo units and cargo transport units shall be loaded, stowed and secured throughout the voyage in accordance with the Cargo Securing Manual approved by the Administration. The Cargo Securing Manual shall be drawn up to a standard at least equivalent to the guidelines developed by the Organization.

Regulation 6

Reporting of incidents involving dangerous goods

1 When an incident takes place involving the loss or likely loss overboard of dangerous goods in packaged form into the sea, the master, or other person having charge of the ship, shall report the particulars of such an incident without delay and to the fullest extent possible to the nearest coastal State. The report shall be drawn up based on general principles and guidelines developed by the Organization.

2 In the event of the ship referred to in paragraph 1 being abandoned, or in the event of a report from such a ship being incomplete or unobtainable, the company, as defined in regulation IX/1.2, shall, to the fullest extent possible, assume the obligations placed upon the master by this regulation.

1.1.2.2 International Convention for the Prevention of Pollution from Ships (MARPOL)

1.1.2.2.1 Annex III of the International Convention for the Prevention of Pollution from Ships, 1973, as modified by the Protocol of 1978 relating thereto (MARPOL), deals with the prevention of pollution by harmful substances carried by sea in packaged form and is reproduced in full, as revised by the Marine Environment Protection Committee.

Annex III

Regulations for the prevention of pollution by harmful substances carried by sea in packaged form

Regulation 1

Application

1 Unless expressly provided otherwise, the regulations of this Annex apply to all ships carrying harmful substances in packaged form.

- .1 For the purpose of this Annex, "harmful substances" are those substances which are identified as marine pollutants in the International Maritime Dangerous Goods Code (IMDG Code)¹ or which meet the criteria in the Appendix of this Annex.
- .2 For the purposes of this Annex, "packaged form" is defined as the forms of containment specified for harmful substances in the IMDG Code.

2 The carriage of harmful substances is prohibited, except in accordance with the provisions of this Annex.

3 To supplement the provisions of this Annex, the Government of each Party to the Convention shall issue, or cause to be issued, detailed requirements on packing, marking, labelling, documentation, stowage, quantity limitations and exceptions for preventing or minimizing pollution of the marine environment by harmful substances.

4 For the purposes of this Annex, empty packagings which have been used previously for the carriage of harmful substances shall themselves be treated as harmful substances unless adequate precautions have been taken to ensure that they contain no residue that is harmful to the marine environment.

5 The requirements of this Annex do not apply to ship's stores and equipment.

Regulation 2

Packing

Packages shall be adequate to minimize the hazard to the marine environment, having regard to their specific contents.

Regulation 3

Marking and labelling

1 Packages containing a harmful substance shall be durably marked or labelled to indicate that the substance is a harmful substance in accordance with the relevant provisions of the IMDG Code.

2 The method of affixing marks or labels on packages containing a harmful substance shall be in accordance with the relevant provisions of the IMDG Code.

Regulation 4

Documentation

1 Transport information relating to the carriage of harmful substances shall be in accordance with the relevant provisions of the IMDG Code and shall be made available to the person or organization designated by the port State authority.

2 Each ship carrying harmful substances shall have a special list, manifest or stowage plan setting forth, in accordance with the relevant provisions of the IMDG Code, the harmful substances on board and the location thereof. A copy of one of these documents shall be made available before departure to the person or organization designated by the port State authority.

Regulation 5

Stowage

Harmful substances shall be properly stowed and secured so as to minimize the hazards to the marine environment without impairing the safety of the ship and persons on board.

Regulation 6

Quantity limitations

Certain harmful substances may, for sound scientific and technical reasons, need to be prohibited for carriage or be limited as to the quantity which may be carried aboard any one ship. In limiting the quantity, due consideration shall be given to size, construction and equipment of the ship, as well as the packaging and the inherent nature of the substances.

Regulation 7

Exceptions

1 Jettisoning of harmful substances carried in packaged form shall be prohibited, except where necessary for the purpose of securing the safety of the ship or saving life at sea.

2 Subject to the provisions of the present Convention, appropriate measures based on the physical, chemical and biological properties of harmful substances shall be taken to regulate the washing of leakages overboard, provided that compliance with such measures would not impair the safety of the ship and persons on board.

Regulation 8

Port State control on operational requirements

1 A ship when in a port or an offshore terminal of another Party is subject to inspection by officers duly authorized by such Party concerning operational requirements under this Annex.

2 Where there are clear grounds for believing that the master or crew are not familiar with essential shipboard procedures relating to the prevention of pollution by harmful substances, the Party shall take such steps, including carrying out detailed inspection and, if required, will ensure that the ship shall not sail until the situation has been brought to order in accordance with the requirements of this Annex.

3 Procedures relating to the port State control prescribed in article 5 of the present Convention shall apply to this regulation.

4 Nothing in this regulation shall be construed to limit the rights and obligations of a Party carrying out control over operational requirements specifically provided for in the present Convention.

Appendix to Annex III Criteria for the identification of harmful substances in packaged form

For the purposes of this Annex, substances identified by any one of the following criteria are harmful substances:

(a) Acute (short-term) aquatic hazard

Category: Acute 1	
96 hr LC ₅₀ (for fish)	≤ 1 mg/l and/or
48 hr EC ₅₀ (for crustacea)	≤ 1 mg/l and/or
72 or 96 hr ErC ₅₀ (for algae or other aquatic plants)	≤ 1 mg/l

(b) Long-term aquatic hazard

(i) Non-rapidly degradable substances for which there are adequate chronic toxicity data available

Category: Chronic 1	
Chronic NOEC or EC _x (for fish)	≤ 0.1 mg/l and/or
Chronic NOEC or EC _x (for crustacea)	≤ 0.1 mg/l and/or
Chronic NOEC or EC _x (for algae or other aquatic plants)	≤ 0.1 mg/l

Category: Chronic 2	
Chronic NOEC or EC _x (for fish)	≤ 1 mg/l and/or
Chronic NOEC or EC _x (for crustacea)	≤ 1 mg/l and/or
Chronic NOEC or EC _x (for algae or other aquatic plants)	≤ 1 mg/l

(ii) Rapidly degradable substances for which there are adequate chronic toxicity data available

Category: Chronic 1	
Chronic NOEC or EC _x (for fish)	≤ 0.01 mg/l and/or
Chronic NOEC or EC _x (for crustacea)	≤ 0.01 mg/l and/or
Chronic NOEC or EC _x (for algae or other aquatic plants)	≤ 0.01 mg/l

Category: Chronic 2	
Chronic NOEC or EC _x (for fish)	≤ 0.1 mg/l and/or
Chronic NOEC or EC _x (for crustacea)	≤ 0.1 mg/l and/or
Chronic NOEC or EC _x (for algae or other aquatic plants)	≤ 0.1 mg/l

(iii) Substances for which adequate chronic toxicity data are not available

Category: Chronic 1

96 hr LC₅₀ (for fish) ≤ 1 mg/ℓ and/or

48 hr EC₅₀ (for crustacea) ≤ 1 mg/ℓ and/or

72 or 96 hr ErC₅₀ (for algae or other aquatic plants) ≤ 1 mg/ℓ

and the substance is not rapidly degradable and/or the experimentally determined BCF is ≥ 500 (or, if absent, the log K_{ow} ≥ 4).

Category: Chronic 2

96 hr LC₅₀ (for fish) > 1 mg/ℓ but ≤ 10 mg/ℓ and/or

48 hr EC₅₀ (for crustacea) > 1 mg/ℓ but ≤ 10 mg/ℓ and/or

72 or 96 hr ErC₅₀ (for algae or other aquatic plants) > 1 mg/ℓ but ≤ 10 mg/ℓ

and the substance is not rapidly degradable and/or the experimentally determined BCF is ≥ 500 (or, if absent, the log K_{ow} ≥ 4).

Additional guidance on the classification process for substances and mixtures is included in the IMDG Code.

1.1.2.3 International Convention for Safe Containers, 1972, as amended

1.1.2.3.1 Regulations 1 and 2 of annex I to the International Convention for Safe Containers (CSC), 1972, as amended, deal with safety approval plates and maintenance and examination of containers, and are reproduced in full.

Annex I

Regulations for the testing, inspection, approval and maintenance of containers

Chapter I

Regulations common to all systems of approval

General provisions

The following definitions shall be applied for the purpose of this annex:

The letter *g* means the standard acceleration of gravity; *g* equals 9.8 m/s².

The word *load*, when used to describe a physical quantity to which units may be ascribed, signifies mass.

Maximum operating gross mass or Rating or R means the maximum allowable sum of the mass of the container and its cargo. The letter *R* is expressed in units of mass. Where the annexes are based on gravitational forces derived from this value, that force, which is an inertial force, is indicated as *Rg*.

Maximum permissible payload or P means the difference between maximum operating gross mass or rating and tare. The letter *P* is expressed in units of mass. Where the annexes are based on the gravitational forces derived from this value, that force, which is an inertial force, is indicated as *Pg*.

Tare means the mass of the empty container, including permanently affixed ancillary equipment.

Regulation 1

Safety Approval Plate

- 1 (a)** A Safety Approval Plate conforming to the specifications set out in the appendix to this annex shall be permanently affixed to every approved container at a readily visible place, adjacent to any other approval plate issued for official purposes, where it would not be easily damaged.
- (b)** On each container, all maximum operating gross mass markings shall be consistent with the maximum operating gross mass information on the Safety Approval Plate.

- (c) The owner of the container shall remove the Safety Approval Plate on the container if:
- (i) the container has been modified in a manner which would void the original approval and the information found on the Safety Approval Plate, or
 - (ii) the container is removed from service and is not being maintained in accordance with the Convention, or
 - (iii) the approval has been withdrawn by the Administration.
- 2 (a) The plate shall contain the following information in at least the English or French language:
- CSC SAFETY APPROVAL**
- Country of approval and approval reference
- Date (month and year) of manufacture
- Manufacturer's identification number of the container or, in the case of existing containers for which that number is unknown, the number allotted by the Administration
- Maximum operating gross mass (kg and lb)
- Allowable stacking load for 1.8g (kg and lb)
- Transverse racking test force (newtons).
- (b) A blank space should be reserved on the plate for insertion of end-wall and/or side-wall strength values (factors) in accordance with paragraph 3 of this regulation and annex II, tests 6 and 7. A blank space should also be reserved on the plate for the first and subsequent maintenance examination dates (month and year) when used.
- 3 Where the Administration considers that a new container satisfies the requirements of the present Convention in respect of safety and if, for such container, the end-wall and/or side-wall strength values (factors) are designed to be greater or less than those stipulated in annex II, such values shall be indicated on the Safety Approval Plate. Where the stacking or racking values are less than 192,000 kg or 150 kN, respectively, the container shall be considered as having limited stacking or racking capacity and shall be conspicuously marked, as required under the relevant standards, at or before their next scheduled examination or before any other date approved by the Administration, provided this is not later than 1 July 2015.
- 4 The presence of the Safety Approval Plate does not remove the necessity of displaying such labels or other information as may be required by other regulations which may be in force.
- 5 A container, the construction of which was completed prior to 1 July 2014, may retain the Safety Approval Plate as permitted by the Convention prior to that date as long as no structural modifications occur to that container.

Regulation 2

Maintenance and examination

- 1 The owner of the container shall be responsible for maintaining it in safe condition.
- 2 (a) The owner of an approved container shall examine the container or have it examined in accordance with the procedure either prescribed or approved by the Contracting Party concerned, at intervals appropriate to operating conditions.
- (b) The date (month and year) before which a new container shall undergo its first examination shall be marked on the Safety Approval Plate.
- (c) The date (month and year) before which the container shall be re-examined shall be clearly marked on the container on or as close as practicable to the Safety Approval Plate and in a manner acceptable to that Contracting Party which prescribed or approved the particular examination procedure involved.
- (d) The interval from the date of manufacture to the date of the first examination shall not exceed five years. Subsequent examination of new containers and re-examination of existing containers shall be at intervals of not more than 30 months. All examinations shall determine whether the container has any defects which could place any person in danger.
- 3 (a) As an alternative to paragraph 2, the Contracting Party concerned may approve a continuous examination programme if satisfied, on evidence submitted by the owner, that such a programme provides a standard of safety not inferior to the one set out in paragraph 2 above.
- (b) To indicate that the container is operated under an approved continuous examination programme, a mark showing the letters **ACEP** and the identification of the Contracting Party which has granted approval of the programme shall be displayed on the container on or as close as practicable to the Safety Approval Plate.

- (c) All examinations performed under such a programme shall determine whether a container has any defects which could place any person in danger. They shall be performed in connection with a major repair, refurbishment, or on-hire/off-hire interchange and in no case less than once every 30 months.

4 As a minimum, approved programmes should be reviewed once every 10 years to ensure their continued viability. In order to ensure uniformity by all involved in the inspection of containers and their ongoing operational safety, the Contracting Party concerned shall ensure the following elements are covered in each prescribed periodic or approved continuous examination programme:

- (a) methods, scope and criteria to be used during examinations;
- (b) frequency of examinations;
- (c) qualifications of personnel to carry out examinations;
- (d) system of keeping records and documents that will capture:
 - (i) the owner's unique serial number of the container;
 - (ii) the date on which the examination was carried out;
 - (iii) identification of the competent person who carried out the examination;
 - (iv) the name and location of the organization where the examination was carried out;
 - (v) the results of the examination; and
 - (vi) in the case of a periodic examination scheme (PES), the next examination date (NED);
- (e) a system for recording and updating the identification numbers of all containers covered by the appropriate examination scheme;
- (f) methods and systems for maintenance criteria that addresses the design characteristics of the specific containers;
- (g) provisions for maintaining leased containers if different than those used for owned containers; and
- (h) conditions and procedures for adding containers into an already approved programme.

5 The Contracting Party shall carry out periodic audits of approved programmes to ensure compliance with the provisions approved by the Contracting Party. The Contracting Party shall withdraw any approval when the conditions of approval are no longer complied with.

6 For the purpose of this regulation, *the Contracting Party concerned* is the Contracting Party of the territory in which the owner is domiciled or has his head office. However, in the event that the owner is domiciled or has his head office in a country the government of which has not yet made arrangements for prescribing or approving an examination scheme and until such time as the arrangements have been made, the owner may use the procedure prescribed or approved by the Administration of a Contracting Party which is prepared to act as the Contracting Party concerned. The owner shall comply with the conditions for the use of such procedures set by the Administration in question.

7 Administrations shall make information on approved continuous examination programmes publicly available.

1.1.3 Dangerous goods forbidden from transport

1.1.3.1 Unless provided otherwise by this Code, the following are forbidden from transport:

Any substance or article which, as presented for transport, is liable to explode, dangerously react, produce a flame or dangerous evolution of heat or dangerous emission of toxic, corrosive or flammable gases or vapours under normal conditions of transport.

In chapter 3.3, special provisions 349, 350, 351, 352, 353 and 900 list certain substances, which are forbidden for transport.

Chapter 1.2

Definitions, units of measurement and abbreviations

1.2.1 Definitions

The following is a list of definitions of general applicability that are used throughout this Code. Additional definitions of a highly specific nature are presented in the relevant chapters.

For the purposes of this Code:

Aerosols or aerosol dispensers means an article consisting of non-refillable receptacles meeting the provisions of 6.2.4, made of metal, glass or plastics and containing a gas compressed, liquefied or dissolved under pressure, with or without a liquid, paste or powder, and fitted with a release device allowing the contents to be ejected as solid or liquid particles in suspension in a gas, as a foam, paste or powder or in a liquid state or in a gaseous state.

Alternative arrangement means an approval granted by the competent authority for a portable tank or MEGC that has been designed, constructed or tested to technical requirements or testing methods other than those specified in this Code (see, for instance, 6.7.5.11.1).

Animal material means animal carcasses, animal body parts, or animal foodstuffs.

Approval

Multilateral approval, for the transport of radioactive material, means approval by the relevant competent authority of the country of origin of the design or shipment, as applicable, and also, where the consignment is to be transported through or into any other country, approval by the competent authority of that country.

Unilateral approval, for the transport of radioactive material, means an approval of a design which is required to be given by the competent authority of the country of origin of the design only.

Bags means flexible packagings made of paper, plastic film, textiles, woven material, or other suitable materials.

Barge-carrying ship means a ship specially designed and equipped to transport shipborne barges.

Barge feeder vessel means a vessel specially designed and equipped to transport shipborne barges to or from a barge-carrying ship.

Boxes means packagings with complete rectangular or polygonal faces, made of metal, wood, plywood, reconstituted wood, fibreboard, plastics, or other suitable material. Small holes for purposes such as ease of the handling or opening of the box or to meet classification provisions are permitted as long as they do not compromise the integrity of the packaging during transport.

Bulk containers are containment systems (including any liner or coating) intended for the transport of solid substances which are in direct contact with the containment system. Packagings, intermediate bulk containers (IBCs), large packagings and portable tanks are not included.

Bulk containers:

- are of a permanent character and accordingly strong enough to be suitable for repeated use;
- are specially designed to facilitate the transport of goods by one or more means of transport without intermediate reloading;
- are fitted with devices permitting ready handling; and
- have a capacity of not less than 1 cubic metre.

Examples of bulk containers are freight containers, offshore bulk containers, skips, bulk bins, swap bodies, trough-shaped containers, roller containers, load compartments of vehicles or flexible bulk containers.

Bundles of cylinders are assemblies of cylinders that are fastened together and which are interconnected by a manifold and transported as a unit. The total water capacity shall not exceed 3,000 litres except that bundles intended for the transport of gases of class 2.3 shall be limited to 1,000 litres water capacity.

Cargo transport unit means a road transport tank or freight vehicle, a railway transport tank or freight wagon, a multimodal freight container or portable tank, or an MEGC.

Carrier means any person, organization or Government undertaking the transport of dangerous goods by any means of transport. The term includes both carriers for hire or reward (known as *common* or *contract carriers* in some countries) and carriers on own account (known as *private carriers* in some countries).

Cellular ship means a ship in which containers are loaded under deck into specially designed slots giving a permanent stowage of the container during sea transport. Containers loaded on deck in such a ship are specially stacked and secured on fittings.

Closed cargo transport unit, with the exception of class 1, means a cargo transport unit which totally encloses the contents by permanent structures with complete and rigid surfaces. Cargo transport units with fabric sides or tops are not considered closed cargo transport units; for definition of closed cargo transport unit for class 1, see 7.1.2.

Closed ro-ro cargo space means a ro-ro cargo space which is neither an open ro-ro cargo space nor a weather deck.

Closure means a device which closes an opening in a receptacle.

Combination packagings means a combination of packagings for transport purposes, consisting of one or more inner packagings secured in an outer packaging in accordance with 4.1.1.5.

Competent authority means any body or authority designated or otherwise recognized as such for any purpose in connection with this Code.

Compliance assurance means a systematic programme of measures applied by a competent authority which is aimed at ensuring that the provisions of this Code are met in practice.

Composite packagings means packagings consisting of an outer packaging and an inner receptacle so constructed that the inner receptacle and the outer packaging form an integral packaging. Once assembled, it remains thereafter an integrated single unit; it is filled, stored, transported and emptied as such.

Confinement system, for the transport of radioactive material, means the assembly of fissile material and packaging components specified by the designer and agreed to by the competent authority as intended to preserve criticality safety.

Consignee means any person, organization or Government which is entitled to take delivery of a consignment.

Consignment means any package or packages, or load of dangerous goods, presented by a consignor for transport.

Consignor means any person, organization or Government which prepares a consignment for transport.

Containment system, for the transport of radioactive material, means the assembly of components of the packaging specified by the designer as intended to retain the radioactive material during transport.

Control temperature means the maximum temperature at which certain substances (such as organic peroxides and self-reactive and related substances) can be safely transported during a prolonged period of time.

Conveyance means:

- .1 for transport by road or rail: any vehicle,
- .2 for transport by water: any ship, or any cargo space or defined deck area of a ship,
- .3 for transport by air: any aircraft.

Crates are outer packagings with incomplete surfaces.

Criticality safety index (CSI) assigned to a package, overpack or freight container containing fissile material, for the transport of radioactive material, means a number which is used to provide control over the accumulation of packages, overpacks or freight containers containing fissile material.

Critical temperature is the temperature above which the substance cannot exist in the liquid state.

Cryogenic receptacles are transportable thermally insulated receptacles for refrigerated liquefied gases, of a water capacity of not more than 1,000 litres.

CTU Code means the IMO/ILO/UNECE Code of Practice for Packing of Cargo Transport Units (MSC.1/Circ.1497).

Cylinders are transportable pressure receptacles of a water capacity not exceeding 150 litres.

Defined deck area means the area, of the weather deck of a ship, or of a vehicle deck of a roll-on/roll-off ship, which is allocated for the stowage of dangerous goods.

Design, for the transport of radioactive material, means the description of fissile material excepted under 2.7.2.3.5.6, special form radioactive material, low dispersible radioactive material, package or packaging which enables such an item to be fully identified. The description may include specifications, engineering drawings, reports demonstrating compliance with regulatory requirements, and other relevant documentation.

Design life, for composite cylinders and tubes, means the maximum life (in number of years) to which the cylinder or tube is designed and approved in accordance with the applicable standard.

Drums means flat-ended or convex-ended cylindrical packagings made of metal, fibreboard, plastics, plywood or other suitable materials. This definition also includes packagings of other shapes, such as round taper-necked packagings, or pail-shaped packagings. Wooden barrels and jerricans are not covered by this definition.

Elevated temperature substance means a substance which is transported or offered for transport:

- in the liquid state at a temperature at or above 100°C
- in the liquid state with a flashpoint above 60°C that is intentionally heated to a temperature above its flashpoint; or
- in the solid state at a temperature at or above 240°C.

Emergency temperature means the temperature at which emergency procedures shall be implemented.

Exclusive use, for the transport of radioactive material, means the sole use, by a single consignor, of a conveyance or of a large freight container, in respect of which all initial, intermediate and final loading and unloading and shipment are carried out in accordance with the directions of the consignor or consignee, where so required by the provisions of this Code.

Filling ratio means the ratio of the mass of gas to the mass of water at 15°C that would fill completely a pressure receptacle fitted ready for use.

Flashpoint means the lowest temperature of a liquid at which its vapour forms an ignitable mixture with air.

Foodstuff includes foodstuffs, feeds or other edible substances intended for consumption by humans or animals.

Freight container means an article of transport equipment that is of a permanent character and accordingly strong enough to be suitable for repeated use; specially designed to facilitate the transport of goods, by one or more modes of transport, without intermediate reloading; designed to be secured and/or readily handled, having fittings for these purposes, and approved in accordance with the International Convention for Safe Containers (CSC), 1972, as amended. In addition: *Small freight container* means a freight container that has an internal volume of not more than 3 m³. *Large freight container* means a freight container that has an internal volume of more than 3 m³.

For freight containers for the transport of radioactive material, a freight container may be used as a packaging. A small freight container is that which has either any overall outer dimension less than 1.5 m, or an internal volume of not more than 3 m³. Any other freight container is considered to be a large freight container.

Fuel cell means an electrochemical device that converts the chemical energy of a fuel to electrical energy, heat and reaction products.

Fuel cell engine means a device used to power equipment and which consists of a fuel cell and its fuel supply, whether integrated with or separate from the fuel cell, and includes all appurtenances necessary to fulfil its function.

GHS means the sixth revised edition of the *Globally Harmonized System of Classification and Labelling of Chemicals*, published by the United Nations as document ST/SG/AC.10/30/Rev.6.

IMO type 4 tank means a road tank vehicle for the transport of dangerous goods of classes 3 to 9 and includes a semi-trailer with a permanently attached tank or a tank attached to a chassis, with at least four twist locks that take account of ISO standards (e.g. ISO 1161:1984).

IMO type 6 tank means a road tank vehicle for the transport of non-refrigerated liquefied gases of class 2 and includes a semi-trailer with a permanently attached tank or a tank attached to a chassis which is fitted with items of service equipment and structural equipment necessary for the transport of gases.

IMO type 8 tank means a road tank vehicle for the transport of refrigerated liquefied gases of class 2 and includes a semi-trailer with a permanently attached thermally insulated tank fitted with items of service equipment and structural equipment necessary for the transport of refrigerated liquefied gases.

Inner packagings means packagings for which an outer packaging is required for transport.

Inner receptacles means receptacles which require an outer packaging in order to perform their containment function.

Inspection body means an independent inspection and testing body approved by the competent authority.

Intermediate bulk containers (IBCs) means rigid or flexible portable packagings, other than specified in chapter 6.1, that:

- .1 have a capacity of:
 - .1 not more than 3.0 m³ (3,000 litres) for solids and liquids of packing groups II and III;
 - .2 not more than 1.5 m³ for solids of packing group I when packed in flexible, rigid plastics, composite, fibreboard or wooden IBCs;
 - .3 not more than 3.0 m³ for solids of packing group I when packed in metal IBCs;
 - .4 not more than 3.0 m³ for radioactive material of class 7;
- .2 are designed for mechanical handling; and
- .3 are resistant to the stresses produced in handling and transport, as determined by tests.

Remanufactured IBCs are metal, rigid plastics or composite IBCs that:

- .1 are produced as a UN type from a non-UN type; or
- .2 are converted from one UN design type to another UN design type.

Remanufactured IBCs are subject to the same provisions of this Code that apply to new IBCs of the same type (see also design type definition in 6.5.6.1.1).

Repaired IBCs are metal, rigid plastics or composite IBCs that, as a result of impact or for any other cause (e.g. corrosion, embrittlement or other evidence of reduced strength as compared to the design type) are restored so as to conform to the design type and to be able to withstand the design type tests. For the purposes of this Code, the replacement of the rigid inner receptacle of a composite IBC with a receptacle conforming to the original design type from the same manufacturer is considered repair. However, routine maintenance of rigid IBCs (see definition below) is not considered repair. The bodies of rigid plastics IBCs and the inner receptacles of composite IBCs are not repairable. Flexible IBCs are not repairable, unless approved by the competent authority.

Routine maintenance of flexible IBCs is the routine performance on plastics or textile flexible IBCs of operations, such as:

- .1 cleaning; or
- .2 replacement of non-integral components, such as non-integral liners and closure ties, with components conforming to the original manufacturer's specification;

provided that these operations do not adversely affect the containment function of the flexible IBC or alter the design type.

Note: For rigid IBCs, see "Routine maintenance of rigid IBCs".

Routine maintenance of rigid IBCs is the routine performance on metal, rigid plastics or composite IBCs of operations such as:

- .1 cleaning;
- .2 removal and reinstallation or replacement of body closures (including associated gaskets), or of service equipment, conforming to the original manufacturer's specifications, provided that the leaktightness of the IBC is verified; or
- .3 restoration of structural equipment not directly performing a dangerous goods containment or discharge pressure retention function so as to conform to the design type (e.g. the straightening of legs or lifting attachments) provided that the containment function of the IBC is not affected.

Note: For flexible IBCs, see "Routine maintenance of flexible IBCs".

Intermediate packagings means packagings placed between inner packagings, or articles, and an outer packaging.

Jerricans means metal or plastics packagings of rectangular or polygonal cross-section.

Large packagings means packagings consisting of an outer packaging which contains articles or inner packagings and which:

- .1 are designed for mechanical handling; and
- .2 exceed 400 kg net mass or 450 litre capacity but have a volume of not more than 3 m³.

Large salvage packaging means a special packaging which:

- .1 is designed for mechanical handling; and
- .2 exceeds 400 kg net mass or 450 litre capacity but has a volume of not more than 3 m³;

into which damaged, defective, leaking or non-conforming dangerous goods packages, or dangerous goods that have spilled or leaked are placed for purposes of transport for recovery or disposal.

Liner means a separate tube or bag inserted into a packaging (including IBCs and large packagings) but not forming an integral part of it, including the closures of its openings.

Liquids are dangerous goods which at 50°C have a vapour pressure of not more than 300 kPa (3 bar), which are not completely gaseous at 20°C and at a pressure of 101.3 kPa, and which have a melting point or initial melting point of 20°C or less at a pressure of 101.3 kPa. A viscous substance for which a specific melting point cannot be determined shall be subjected to the ASTM D 4359-90 test; or to the test for determining fluidity (penetrometer test) prescribed in section 2.3.4 of Annex A of the European Agreement concerning the International Carriage of Dangerous Goods by Road (ADR).

Long international voyage means an international voyage that is not a short international voyage.

Management system, for the transport of radioactive material, means a set of interrelated or interacting elements (system) for establishing policies and objectives and enabling the objectives to be achieved in an efficient and effective manner.

Manual of Tests and Criteria means the sixth revised edition of the United Nations publication entitled *Recommendations on the Transport of Dangerous Goods, Manual of Tests and Criteria* (ST/SG/AC.10/11/Rev.6).

Maximum capacity as used in 6.1.4 means the maximum inner volume of receptacles or packagings expressed in litres.

Maximum net mass as used in 6.1.4 means the maximum net mass of contents in a single packaging or maximum combined mass of inner packagings and the contents thereof and is expressed in kilograms.

Maximum normal operating pressure, for the transport of radioactive material, means the maximum pressure above atmospheric pressure at mean sea-level that would develop in the containment system in a period of one year under the conditions of temperature and solar radiation corresponding to environmental conditions in the absence of venting, external cooling by an ancillary system, or operational controls during transport.

Metal hydride storage system means a single complete hydrogen storage system, including a receptacle, metal hydride, pressure relief device, shut-off valve, service equipment and internal components used for the transport of hydrogen only.

Multiple-element gas containers (MEGCs) are multimodal assemblies of cylinders, tubes or bundles of cylinders which are interconnected by a manifold and which are assembled within a framework. The MEGC includes service equipment and structural equipment necessary for the transport of gases.

Net explosive mass (NEM) means the total mass of the explosive substances, without the packagings, casings, etc. (*Net explosive quantity (NEQ)*, *net explosive contents (NEC)*, or *net explosive weight (NEW)* are often used to convey the same meaning.)

Neutron radiation detector is a device that detects neutron radiation. In such a device, a gas may be contained in a hermetically-sealed electron tube transducer that converts neutron radiation into a measurable electric signal.

Offshore bulk container means a bulk container specially designed for repeated use for the transport of dangerous goods to, from and between offshore facilities. An offshore bulk container is designed and constructed in accordance with Guidelines for the approval of offshore containers handled in open seas (MSC/Circ.860).

Open cargo transport unit means a unit which is not a closed cargo transport unit.

Open cryogenic receptacle means a transportable thermally insulated receptacle for refrigerated liquefied gases maintained at atmospheric pressure by continuous venting of the refrigerated liquefied gas.

Open ro-ro cargo space means a ro-ro cargo space either open at both ends, or open at one end and provided with adequate natural ventilation effective over its entire length through permanent openings in the side plating or deckhead to the satisfaction of the Administration.

Outer packaging means the outer protection of a composite or combination packaging together with any absorbent materials, cushioning and any other components necessary to contain and protect inner receptacles or inner packagings.

Overpack means an enclosure used by a single consignor to contain one or more packages and to form one unit for the convenience of handling and stowage during transport. Examples of overpacks are a number of packages either:

- .1 placed or stacked on to a load board, such as a pallet, and secured by strapping, shrink-wrapping, stretch-wrapping, or other suitable means; or
- .2 placed in a protective outer packaging such as a box or crate.

Overstowed means that a package or container is directly stowed on top of another.

Package means the complete product of the packing operation, consisting of the packaging and its contents prepared for transport.

Packaging means one or more receptacles and any other components or materials necessary for the receptacles to perform their containment and other safety functions.

Pressure drums are welded transportable pressure receptacles of a water capacity exceeding 150 litres and of not more than 1,000 litres (e.g. cylindrical receptacles equipped with rolling hoops, spheres on skids).

Pressure receptacles is a collective term that includes cylinders, tubes, pressure drums, closed cryogenic receptacles, metal hydride storage systems, bundles of cylinders and salvage pressure receptacles.

Quality assurance means a systematic programme of controls and inspections applied by any organization or body which is aimed at providing adequate confidence that the standard of safety prescribed in this Code is achieved in practice.

Radiation detection system is an apparatus that contains radiation detectors as components.

Radiation level, for the transport of radioactive material, means the corresponding dose rate expressed in millisieverts per hour or microsieverts per hour.

Radioactive contents, for the transport of radioactive material, mean the radioactive material together with any contaminated or activated solids, liquids, and gases within the packaging.

Receptacles means containment vessels for receiving and holding substances or articles, including any means of closing.

Reconditioned packagings include:

- .1 metal drums that:
 - .1 are cleaned to original materials of construction, with all former contents, internal and external corrosion, and external coatings and labels removed;
 - .2 are restored to original shape and contour, with chimes (if any) straightened and sealed, and all non-integral gaskets replaced; and
 - .3 are inspected after cleaning, but before painting, with rejection of packagings with visible pitting, significant reduction in material thickness, metal fatigue, damaged threads or closures, or other significant defects;
- .2 plastic drums and jerricans that:
 - .1 are cleaned to original materials of construction, with all former contents, external coatings and labels removed;
 - .2 have all non-integral gaskets replaced; and
 - .3 are inspected after cleaning, with rejection of packagings with visible damage such as tears, creases or cracks, or damaged threads or closures, or other significant defects.

Recycled plastics material means material recovered from used industrial packagings that has been cleaned and prepared for processing into new packagings. The specific properties of the recycled material used for production of new packagings shall be assured and documented regularly as part of a quality assurance programme recognized by the competent authority. The quality assurance programme shall include a record of proper pre-sorting and verification that each batch of recycled plastics material has the proper melt flow rate, density, and tensile yield strength, consistent with that of the design type manufactured from such recycled material. This necessarily includes knowledge about the packaging material from which the recycled plastics have been derived, as well as awareness of the prior contents of those packagings if those prior contents might reduce the capability of new packagings produced using that material. In addition, the packaging manufacturer's quality assurance programme under 6.1.1.3 shall include performance of the mechanical design type test in 6.1.5 on packagings manufactured from each batch of recycled plastics

material. In this testing, stacking performance may be verified by appropriate dynamic compression testing rather than static load testing.

Note: ISO 16103:2005, *Packaging – Transport packages for dangerous goods – Recycled plastics material*, provides additional guidance on procedures to be followed in approving the use of recycled plastics material.

Remanufactured IBCs (see *Intermediate bulk containers (IBCs)*).

Remanufactured large packaging means a metal or rigid plastics large packaging that:

- .1 is produced as a UN type from a non-UN type; or
- .2 is converted from one UN design type to another UN design type.

Remanufactured large packagings are subject to the same provisions of this Code that apply to new large packagings of the same type (see also design type definition in 6.6.5.1.2).

Remanufactured packagings include:

- .1 metal drums that:
 - .1 are produced as a UN type from a non-UN type;
 - .2 are converted from one UN type to another UN type; or
 - .3 undergo the replacement of integral structural components (such as non-removable heads); or
- .2 plastic drums that:
 - .1 are converted from one UN type to another UN type (such as 1H1 to 1H2); or
 - .2 undergo the replacement of integral structural components.

Remanufactured drums are subject to the same provisions of this Code that apply to a new drum of the same type.

Repaired IBCs (see *Intermediate bulk containers (IBCs)*).

Re-used large packaging means a large packaging to be refilled which has been examined and found free of defects affecting the ability to withstand the performance tests: the term includes those which are refilled with the same or similar compatible contents and are transported within distribution chains controlled by the consignor of the product.

Re-used packagings means packagings to be refilled which have been examined and found free of defects affecting the ability to withstand the performance tests; the term includes those which are refilled with the same or similar compatible contents and are transported within distribution chains controlled by the consignor of the product.

Road tank vehicle means a vehicle equipped with a tank with a capacity of more than 450 litres, fitted with pressure-relief devices.

Ro-ro cargo space means spaces not normally subdivided in any way and extending to either a substantial length or the entire length of the ship in which goods (packaged or in bulk, in or on rail or road cars, vehicles (including road or rail tankers), trailers, containers, pallets, demountable tanks or in or on similar stowage units or other receptacles) can be loaded and unloaded normally in a horizontal direction.

Ro-ro ship (roll-on/roll-off ship) means a ship which has one or more decks, either closed or open, not normally subdivided in any way and generally running the entire length of the ship, carrying goods which are normally loaded and unloaded in a horizontal direction.

Routine maintenance of IBCs (see *Intermediate bulk containers (IBCs)*).

Salvage packagings are special packagings into which damaged, defective, leaking or non-conforming dangerous goods packages, or dangerous goods that have spilled or leaked, are placed for purposes of transport for recovery or disposal.

Salvage pressure receptacle means a pressure receptacle with a water capacity not exceeding 3,000 litres into which are placed damaged, defective, leaking or non-conforming pressure receptacle(s) for the purpose of transport, e.g. for recovery or disposal.

Self-accelerating decomposition temperature (SADT) means the lowest temperature at which self-accelerating decomposition may occur for a substance in the packaging as used in transport. The self-accelerating decomposition temperature (SADT) shall be determined in accordance with the latest version of the Manual of Tests and Criteria.

Self-accelerating polymerization temperature (SAPT) means the lowest temperature at which polymerization may occur with a substance in the packaging, IBC or portable tank as offered for transport. The SAPT shall be determined in accordance with the test procedures established for the self-accelerating decomposition

temperature for self-reactive substances in accordance with Part II, Section 28 of the Manual of Tests and Criteria.

Semi-trailer means any trailer designed to be coupled to a motor vehicle in such a way that part of it rests on the motor vehicle and a substantial part of its mass and of the mass of its load is borne by the motor vehicle.

Service life, for composite cylinders and tubes, means the number of years the cylinder or tube is permitted to be in service.

Settled pressure means the pressure of the contents of a pressure receptacle in thermal and diffusive equilibrium.

Shipborne barge or barge means an independent, non-self-propelled vessel, specially designed and equipped to be lifted in a loaded condition and stowed aboard a barge-carrying ship or barge feeder vessel.

Shipment means the specific movement of a consignment from origin to destination.

Shipper, for the purpose of this Code, has the same meaning as *consignor*.

Short international voyage means an international voyage in the course of which a ship is not more than 200 miles from a port or place in which the passengers and crew could be placed in safety. Neither the distance between the last port of call in the country in which the voyage begins and the final port of destination nor the return voyage shall exceed 600 miles. The final port of destination is the last port of call in the scheduled voyage at which the ship commences its return voyage to the country in which the voyage began.

Sift-proof packagings are packagings impermeable to dry contents, including fine solid material produced during transport.

Solid bulk cargo means any material, other than liquid or gas, consisting of a combination of particles, granules or any larger pieces of material, generally uniform in composition, which is loaded directly into the cargo spaces of a ship without any intermediate form of containment (this includes a material loaded in a barge on a barge-carrying ship).

Solids are dangerous goods, other than gases, that do not meet the definition of *liquids* in this chapter.

Special category space means an enclosed space, above or below deck, intended for the transport of motor vehicles with fuel in their tanks for their own propulsion, into and from which such vehicles can be driven and to which passengers have access.

Tank means a portable tank (including a tank-container), a road tank-vehicle, a rail tank-wagon or a receptacle to contain solids, liquids, or liquefied gases and has a capacity of not less than 450 litres when used for the transport of gases as defined in 2.2.1.1.

Test pressure means the required pressure applied during a pressure test for qualification or requalification (for portable tanks, see 6.7.2.1).

Through or into means through or into the countries in which a consignment is transported but specifically excludes countries "over" which a consignment is carried by air, provided that there are no scheduled stops in those countries.

Transboundary movement of wastes means any shipment of wastes from an area under the national jurisdiction of one country to or through an area under the national jurisdiction of another country, or to or through an area not under the national jurisdiction of any country, provided at least two countries are concerned by the movement.

Transport index (TI) assigned to a package, overpack or freight container, or to unpackaged LSA-I or SCO-I, for the transport of radioactive material, means a number which is used to provide control over radiation exposure.

Tube means a transportable pressure receptacle of seamless or composite construction having a water capacity exceeding 150 litres and of not more than 3,000 litres.

Unit load means that a number of packages are either:

- .1 placed or stacked on and secured by strapping, shrink-wrapping, or other suitable means to a load board, such as a pallet;
- .2 placed in a protective outer enclosure, such as a pallet box;
- .3 permanently secured together in a sling.

Vehicle means a road vehicle (including an articulated vehicle, i.e. a tractor and semi-trailer combination) or railroad car or railway wagon. Each trailer shall be considered as a separate vehicle.

Wastes means substances, solutions, mixtures, or articles containing or contaminated with one or more constituents which are subject to the provisions of this Code and for which no direct use is envisaged but which are transported for dumping, incineration, or other methods of disposal.

Water-reactive means a substance which, in contact with water, emits flammable gas.

Weather deck means a deck which is completely exposed to the weather from above and from at least two sides.

Wooden barrels means packagings made of natural wood, of round cross-section, having convex walls, consisting of staves and heads and fitted with hoops.

Working pressure means the settled pressure of a compressed gas at a reference temperature of 15°C in a full pressure receptacle.

1.2.1.1 Clarifying examples for certain defined terms

The following explanations and examples are meant to assist in clarifying the use of some of the packaging terms defined in this chapter.

The definitions in this chapter are consistent with the use of the defined terms throughout the Code. However, some of the defined terms are commonly used in other ways. This is particularly evident in respect of the term “inner receptacle” which has often been used to describe the “inners” of a combination packaging.

The “inners” of “combination packagings” are always termed “inner packagings”, not “inner receptacles”. A glass bottle is an example of such an “inner packaging”.

The “inners” of “composite packagings” are normally termed “inner receptacles”. For example, the “inner” of a 6HA1 composite packaging (plastics material) is such an “inner receptacle” since it is normally not designed to perform a containment function without its “outer packaging” and is not, therefore, an “inner packaging”.

1.2.2 Units of measurement

1.2.2.1 The following units of measurement are applicable in this Code:

Measurement of:	SI unit ^a	Acceptable alternative unit	Relationship between units
Length	m (metre)	–	–
Area	m ² (square metre)	–	–
Volume	m ³ (cubic metre)	L ^b (litre)	1 L = 10 ⁻³ m ³
Time	s (second)	min (minute) h (hour) d (day)	1 min = 60 s 1 h = 3,600 s 1 d = 86,400 s
Mass	kg (kilogram)	g (gram) t (ton)	1 g = 10 ⁻³ kg 1 t = 10 ³ kg
Mass density	kg/m ³	kg/L	1 kg/L = 10 ³ kg/m ³
Temperature	K (kelvin)	°C (degree Celsius)	0°C = 273.15 K
Difference of temperature	K (kelvin)	°C (degree Celsius)	1°C = 1 K
Force	N (newton)	–	1 N = 1 kg·m/s ²
Pressure	Pa (pascal)	bar (bar)	1 bar = 10 ⁵ Pa 1 Pa = 1 N/m ²
Stress	N/m ²	N/mm ²	1 N/mm ² = 1 MPa
Work Energy Quantity of heat	J (joule)	kWh (kilowatt hour) eV (electronvolt)	1 kWh = 3.6 MJ 1 J = 1 N·m = 1 W·s 1 eV = 0.1602 × 10 ⁻¹⁸ J
Power	W (watt)	–	1 W = 1 J/s = 1 N·m/s
Kinematic viscosity	m ² /s	mm ² /s	1 mm ² /s = 10 ⁻⁶ m ² /s
Dynamic viscosity	Pa·s	mPa·s	1 mPa·s = 10 ⁻³ Pa·s

RESOLUTION MSC.406(96) (adopted on 13 May 2016)
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Measurement of:	SI unit ^a	Acceptable alternative unit	Relationship between units
Activity	Bq (becquerel)	–	–
Dose equivalent	Sv (sievert)	–	–
Conductivity	S/m (siemens/metre)	–	–

^a The International System of Units (SI) is the result of decisions taken at the General Conference on Weights and Measures (Address: Pavillon de Breteuil, Parc de St-Cloud, F-92312 Sèvres).

^b The abbreviation “ℓ” for litre may also be used in place of the abbreviation “L”.

Force	Stress		
1 kg = 9.807 N	1 kg/mm ² = 9.807 N/mm ²		
1 N = 0.102 kg	1 N/mm ² = 0.102 kg/mm ²		
Pressure			
1 Pa = 1 N/m ² = 10 ⁻⁵ bar	= 1.02 × 10 ⁻⁵ kg/cm ²	= 0.75 × 10 ⁻² torr	
1 bar = 10 ⁵ Pa	= 1.02 kg/cm ²	= 750 torr	
1 kg/cm ² = 9.807 × 10 ⁴ Pa	= 0.9807 bar	= 736 torr	
1 torr = 1.33 × 10 ² Pa	= 1.33 × 10 ⁻³ bar	= 1.36 × 10 ⁻³ kg/cm ²	
Energy, work, quantity of heat			
1 J = 1 N·m	= 0.278 × 10 ⁻⁶ kWh	= 0.102 kg·m	= 0.239 × 10 ⁻³ kcal
1 kWh = 3.6 × 10 ⁶ J	= 367 × 10 ³ kg·m	= 860 kcal	
1 kg·m = 9.807 J	= 2.72 × 10 ⁻⁶ kWh	= 2.34 × 10 ⁻³ kcal	
1 kcal = 4.19 × 10 ³ J	= 1.16 × 10 ⁻³ kWh	= 427 kg·m	
Power		Kinematic viscosity	
1 W = 0.102 kg·m/s	= 0.86 kcal/h	1 m ² /s = 10 ⁴ St (stokes)	
1 kg·m/s = 9.807 W	= 8.43 kcal/h	1 St = 10 ⁻⁴ m ² /s	
1 kcal/h = 1.16 W	= 0.119 kg·m/s		
Dynamic viscosity			
1 Pa·s = 1 N·s/m ²	= 10 P (poise)	= 0.102 kg·s/m ²	
1 P = 0.1 Pa·s	= 0.1 N·s/m ²	= 1.02 × 10 ⁻² kg·s/m ²	
1 kg·s/m ² = 9.807 Pa·s	= 9.807 N·s/m ²	= 98.07 P	

The decimal multiples and sub-multiples of a unit may be formed by prefixes or symbols, having the following meanings, placed before the name or symbol of the unit:

Multiplying factor		Prefix	Symbol
1 000 000 000 000 000 000 = 10 ¹⁸	quintillion	exa	E
1 000 000 000 000 000 = 10 ¹⁵	quadrillion	peta	P
1 000 000 000 000 = 10 ¹²	trillion	tera	T
1 000 000 000 = 10 ⁹	billion	giga	G
1 000 000 = 10 ⁶	million	mega	M
1 000 = 10 ³	thousand	kilo	k
100 = 10 ²	hundred	hecto	h
10 = 10 ¹	ten	deca	da
0.1 = 10 ⁻¹	tenth	deci	d
0.01 = 10 ⁻²	hundredth	centi	c
0.001 = 10 ⁻³	thousandth	milli	m
0.000 001 = 10 ⁻⁶	millionth	micro	μ
0.000 000 001 = 10 ⁻⁹	billionth	nano	n
0.000 000 000 001 = 10 ⁻¹²	trillionth	pico	p
0.000 000 000 000 001 = 10 ⁻¹⁵	quadrillionth	femto	f
0.000 000 000 000 000 001 = 10 ⁻¹⁸	quintillionth	atto	a

Note: 10⁹ = 1 billion is United Nations usage in English. By analogy, so is 10⁻⁹ = 1 billionth.

1.2.2.2 [Reserved]

1.2.2.3 Whenever the mass of a package is mentioned, the gross mass is meant unless otherwise stated. The mass of containers or tanks used for the transport of goods is not included in the gross mass.

- 1.2.2.4** Unless expressly stated otherwise, the sign “%” represents:
- .1 in the case of mixtures of solids or of liquids, and also in the case of solutions and of solids wetted by a liquid: a percentage mass based on the total mass of the mixture, the solution or the wetted solid;
 - .2 in the case of mixtures of compressed gases: when filled by pressure, the proportion of the volume indicated as a percentage of the total volume of the gaseous mixture, or, when filled by mass, the proportion of the mass indicated as a percentage of the total mass of the mixture;
 - .3 in the case of mixtures of liquefied gases and gases dissolved under pressure: the proportion of the mass indicated as a percentage of the total mass of the mixture.

1.2.2.5 Pressures of all kinds relating to receptacles (such as test pressure, internal pressure, safety-valve opening pressure) are always indicated in gauge pressure (pressure in excess of atmospheric pressure); however, the vapour pressure of substances is always expressed in absolute pressure.

1.2.2.6 Tables of equivalence

1.2.2.6.1 Mass conversion tables

1.2.2.6.1.1 Conversion factors

<i>Multiply</i>	<i>by</i>	<i>to obtain</i>
Grams	0.03527	Ounces
Grams	0.002205	Pounds
Kilograms	35.2736	Ounces
Kilograms	2.2046	Pounds
Ounces	28.3495	Grams
Pounds	16	Ounces
Pounds	453.59	Grams
Pounds	0.45359	Kilograms
Hundredweight	112	Pounds
Hundredweight	50.802	Kilograms

1.2.2.6.1.2 Pounds to kilograms and vice versa

When the central value in any row of these mass conversion tables is taken to be in pounds, its equivalent value in kilograms is shown on the left; when the central value is in kilograms, its equivalent in pounds is shown on the right.

kg	← →		lb	kg	← →		lb	kg	← →		lb
	lb	kg			lb	kg			lb	kg	
0.227	0.5	1.10	22.7	50	110	90.7	200	441			
0.454	1	2.20	24.9	55	121	95.3	210	463			
0.907	2	4.41	27.2	60	132	99.8	220	485			
1.36	3	6.61	29.5	65	143	102	225	496			
1.81	4	8.82	31.8	70	154	104	230	507			
2.27	5	11.0	34.0	75	165	109	240	529			
2.72	6	13.2	36.3	80	176	113	250	551			
3.18	7	15.4	38.6	85	187	118	260	573			
3.63	8	17.6	40.8	90	198	122	270	595			
4.08	9	19.8	43.1	95	209	125	275	606			
4.54	10	22.0	45.4	100	220	127	280	617			
4.99	11	24.3	47.6	105	231	132	290	639			
5.44	12	26.5	49.9	110	243	136	300	661			
5.90	13	28.7	52.2	115	254	159	350	772			
6.35	14	30.9	54.4	120	265	181	400	882			
6.80	15	33.1	56.7	125	276	204	450	992			
7.26	16	35.3	59.0	130	287	227	500	1,102			
7.71	17	37.5	61.2	135	298	247	545	1,202			
8.16	18	39.7	63.5	140	309	249	550	1,213			
8.62	19	41.9	65.8	145	320	272	600	1,323			
9.07	20	44.1	68.0	150	331	318	700	1,543			
11.3	25	55.1	72.6	160	353	363	800	1,764			
13.6	30	66.1	77.1	170	375	408	900	1,984			
15.9	35	77.2	79.4	175	386	454	1,000	2,205			
18.1	40	88.2	81.6	180	397						
20.4	45	99.2	86.2	190	419						

1.2.2.6.2 *Liquid measure conversion tables*

1.2.2.6.2.1 *Conversion factors*

<i>Multiply</i>	<i>by</i>	<i>to obtain</i>
Litres	0.2199	Imperial gallons
Litres	1.759	Imperial pints
Litres	0.2643	US gallons
Litres	2.113	US pints
Gallons	8	Pints
Imperial gallons	4.546	Litres
Imperial gallons } Imperial pints }	1.20095	{ US gallons { US pints
Imperial pints	0.568	Litres
US gallons	3.7853	Litres
US gallons } US pints }	0.83268	{ Imperial gallons { Imperial pints
US pints	0.473	Litres

1.2.2.6.2.2 *Imperial pints to litres and vice versa*

When the central value in any row of these liquid measure conversion tables is taken to be in pints, its equivalent value in litres is shown on the left; when the central value is in litres, its equivalent in pints is shown on the right.

L	← pt	→ L	pt
0.28	0.5		0.88
0.57	1		1.76
0.85	1.5		2.64
1.14	2		3.52
1.42	2.5		4.40
1.70	3		5.28
1.99	3.5		6.16
2.27	4		7.04
2.56	4.5		7.92
2.84	5		8.80
3.12	5.5		9.68
3.41	6		10.56
3.69	6.5		11.44
3.98	7		12.32
4.26	7.5		13.20
4.55	8		14.08

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1.2.2.6.2.3 *Imperial gallons to litres and vice versa*

When the central value in any row of these liquid measure conversion tables is taken to be in gallons, its equivalent value in litres is shown on the left; when the central value is in litres, its equivalent in gallons is shown on the right.

L	← gal	→ L	gal	L	← gal	→ L	gal
2.27		0.5	0.11	159.11	35		7.70
4.55		1	0.22	163.65	36		7.92
9.09		2	0.44	168.20	37		8.14
13.64		3	0.66	172.75	38		8.36
18.18		4	0.88	177.29	39		8.58
22.73		5	1.10	181.84	40		8.80
27.28		6	1.32	186.38	41		9.02
31.82		7	1.54	190.93	42		9.24
36.37		8	1.76	195.48	43		9.46
40.91		9	1.98	200.02	44		9.68
45.46		10	2.20	204.57	45		9.90
50.01		11	2.42	209.11	46		10.12
54.55		12	2.64	213.66	47		10.34
59.10		13	2.86	218.21	48		10.56
63.64		14	3.08	222.75	49		10.78
68.19		15	3.30	227.30	50		11.00
72.74		16	3.52	250.03	55		12.09
77.28		17	3.74	272.76	60		13.20
81.83		18	3.96	295.49	65		14.29
86.37		19	4.18	318.22	70		15.40
90.92		20	4.40	340.95	75		16.49
95.47		21	4.62	363.68	80		17.60
100.01		22	4.84	386.41	85		18.69
104.56		23	5.06	409.14	90		19.80
109.10		24	5.28	431.87	95		20.89
113.65		25	5.50	454.60	100		22.00
118.19		26	5.72	613.71	135		29.69
122.74		27	5.94	681.90	150		32.98
127.29		28	6.16	909.20	200		43.99
131.83		29	6.38	1,022.85	225		49.48
136.38		30	6.60	1,136.50	250		54.97
140.92		31	6.82	1,363.80	300		65.99
145.47		32	7.04	1,591.10	350		76.96
150.02		33	7.26	1,818.40	400		87.99
154.56		34	7.48	2,045.70	450		98.95

1.2.2.6.3 Temperature conversion tables

Degrees Fahrenheit to degrees Celsius and vice versa

When the central value in any row of these temperature conversion tables is taken to be in °F, its equivalent value in °C is shown on the left; when the central value is in °C, its equivalent in °F is shown on the right.

General formula: °F = (°C × $\frac{9}{5}$) + 32; °C = (°F – 32) × $\frac{5}{9}$

°C	← →		°F	°C	← →		°F	°C	← →		°F
	°F	°C			°F	°C			°F	°C	
-73.3	-100	-148		-21.1	-6	21.2		1.1	34	93.2	
-67.8	-90	-130		-20.6	-5	23.0		1.7	35	95	
-62.2	-80	-112		-20.0	-4	24.8		2.2	36	96.8	
-56.7	-70	-94		-19.4	-3	26.6		2.8	37	98.6	
-51.1	-60	-76		-18.9	-2	28.4		3.3	38	100.4	
-45.6	-50	-58		-18.3	-1	30.2		3.9	39	102.2	
-40	-40	-40		-17.8	0	32.0		4.4	40	104	
-39.4	-39	-38.2		-17.2	1	33.8		5	41	105.8	
-38.9	-38	-36.4		-16.7	2	35.6		5.6	42	107.6	
-38.3	-37	-34.6		-16.1	3	37.4		6.1	43	109.4	
-37.8	-36	-32.8		-15.6	4	39.2		6.7	44	111.2	
-37.2	-35	-31		-15.0	5	41.0		7.2	45	113	
-36.7	-34	-29.2		-14.4	6	42.8		7.8	46	114.8	
-36.1	-33	-27.4		-13.9	7	44.6		8.3	47	116.6	
-35.6	-32	-25.6		-13.3	8	46.4		8.9	48	118.4	
-35	-31	-23.8		-12.8	9	48.2		9.4	49	120.2	
-34.4	-30	-22		-12.2	10	50.0		10.0	50	122.0	
-33.9	-29	-20.2		-11.7	11	51.8		10.6	51	123.8	
-33.3	-28	-18.4		-11.1	12	53.6		11.1	52	125.6	
-32.8	-27	-16.6		-10.6	13	55.4		11.7	53	127.4	
-32.2	-26	-14.8		-10.0	14	57.2		12.2	54	129.2	
-31.7	-25	-13		-9.4	15	59.0		12.8	55	131.0	
-31.1	-24	-11.2		-8.9	16	60.8		13.3	56	132.8	
-30.6	-23	-9.4		-8.3	17	62.6		13.9	57	134.6	
-30	-22	-7.6		-7.8	18	64.4		14.4	58	136.4	
-29.4	-21	-5.8		-7.2	19	66.2		15.0	59	138.2	
-28.9	-20	-4		-6.7	20	68		15.6	60	140.0	
-28.3	-19	-2.2		-6.1	21	69.8		16.1	61	141.8	
-27.8	-18	-0.4		-5.6	22	71.6		16.7	62	143.6	
-27.2	-17	1.4		-5	23	73.4		17.2	63	145.4	
-26.7	-16	3.2		-4.4	24	75.2		17.8	64	147.2	
-26.1	-15	5		-3.9	25	77		18.3	65	149.0	
-25.6	-14	6.8		-3.3	26	78.8		18.9	66	150.8	
-25.0	-13	8.6		-2.8	27	80.6		19.4	67	152.6	
-24.4	-12	10.4		-2.2	28	82.4		20.0	68	154.4	
-23.9	-11	12.2		-1.7	29	84.2		20.6	69	156.2	
-23.3	-10	14.0		-1.1	30	86		21.1	70	158.0	
-22.8	-9	15.8		-0.6	31	87.8		21.7	71	159.8	
-22.2	-8	17.6		0	32	89.6		22.2	72	161.6	
-21.7	-7	19.4		0.6	33	91.4		22.8	73	163.4	

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°C	← °F	→ °C	°F	°C	← °F	→ °C	°F	°C	← °F	→ °C	°F
23.3	74		165.2	37.8	100		212	52.2	126		258.8
23.9	75		167.0	38.3	101		213.8	52.8	127		260.6
24.4	76		168.8	38.9	102		215.6	53.3	128		262.4
25.0	77		170.6	39.4	103		217.4	53.9	129		264.2
25.6	78		172.4	40	104		219.2	54.4	130		266.0
26.1	79		174.2	40.6	105		221	55.0	131		267.8
26.7	80		176.0	41.1	106		222.8	55.6	132		269.6
27.2	81		177.8	41.7	107		224.6	56.1	133		271.4
27.8	82		179.6	42.2	108		226.4	56.7	134		273.2
28.3	83		181.4	42.8	109		228.2	57.2	135		275.0
28.9	84		183.2	43.3	110		230	57.8	136		276.8
29.4	85		185	43.9	111		231.8	58.3	137		278.6
30	86		186.8	44.4	112		233.6	58.9	138		280.4
30.6	87		188.6	45	113		235.4	59.4	139		282.2
31.1	88		190.4	45.6	114		237.2	60.0	140		284.0
31.7	89		192.2	46.1	115		239.0	65.6	150		302.0
32.2	90		194	46.7	116		240.8	71.1	160		320.0
32.8	91		195.8	47.2	117		242.6	76.7	170		338.0
33.3	92		197.6	47.8	118		244.4	82.2	180		356.0
33.9	93		199.4	48.3	119		246.2	87.8	190		374.0
34.4	94		201.2	48.9	120		248.0	93.3	200		392.0
35	95		203	49.4	121		249.8	98.9	210		410.0
35.6	96		204.8	50.0	122		251.6	104.4	220		428.0
36.1	97		206.6	50.6	123		253.4	110.0	230		446.0
36.7	98		208.4	51.1	124		255.2	115.6	240		464.0
37.2	99		210.2	51.7	125		257.0	121.1	250		482.0

1.2.3 List of abbreviations

ASTM	American Society for Testing and Materials (ASTM International, 100 Barr Harbor Drive, P.O. Box C700, West Conshohocken, PA, 19428-2959, United States of America)
CGA	Compressed Gas Association (CGA, 14501 George Carter Way, Suite 103, Chantilly, VA 20151, United States of America)
CCC	IMO Sub-Committee on Carriage of Cargoes and Containers
CSC	International Convention for Safe Containers, 1972, as amended
DSC	IMO Sub-Committee on Dangerous Goods, Solid Cargoes and Containers
ECOSOC	Economic and Social Council (UN)
EmS	The EmS Guide: Emergency Response Procedures for Ships Carrying Dangerous Goods
EN (standard)	European standard published by the European Committee for Standardization (CEN) (CEN, 36 rue de Stassart, B-1050 Brussels, Belgium)
FAO	Food and Agriculture Organization (FAO, Viale delle Terme di Caracalla, 00100 Rome, Italy)
HNS Convention	International Convention on Liability and Compensation for Damage in Connection with the Transport of Hazardous and Noxious Substances (IMO)
IAEA	International Atomic Energy Agency (IAEA, P.O. Box 100, A – 1400 Vienna, Austria)
ICAO	International Civil Aviation Organization (ICAO, 999 University Street, Montreal, Quebec H3C 5H7, Canada)
IEC	International Electrotechnical Commission (IEC, 3 rue de Varembe, P.O. Box 131, CH-1211 Geneva 20, Switzerland)

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ILO	International Labour Organization/Office (ILO, 4 route des Morillons, CH-1211 Geneva 22, Switzerland)
IMGS	International Medical Guide for Ships
IMO	International Maritime Organization (IMO, 4 Albert Embankment, London SE1 7SR, United Kingdom)
IMDG Code	International Maritime Dangerous Goods Code
IMSBC Code	International Maritime Solid Bulk Cargoes Code
INF Code	International Code for the Safe Carriage of Packaged Irradiated Nuclear Fuel, Plutonium and High-Level Radioactive Wastes on board Ships
ISO (standard)	An international standard published by the International Organization for Standardization (ISO, 1, ch. de la Voie-Creuse, CH-1211 Geneva 20, Switzerland)
MARPOL	International Convention for the Prevention of Pollution from Ships, 1973, as amended by the 1978 and 1997 Protocols relating thereto
MAWP	Maximum allowable working pressure
MEPC	Marine Environment Protection Committee (IMO)
MFAG	Medical First Aid Guide for use in Accidents Involving Dangerous Goods
MSC	Maritime Safety Committee (IMO)
N.O.S.	not otherwise specified
SADT	Self-accelerating decomposition temperature
SAPT	Self-accelerating polymerization temperature
SOLAS	International Convention for the Safety of Life at Sea, 1974, as amended
UNECE	United Nations Economic Commission for Europe (UNECE, Palais des Nations, 8-14 avenue de la Paix, CH-1211 Geneva 10, Switzerland)
UN number	Four-digit United Nations number is assigned to dangerous, hazardous and harmful substances, materials and articles most commonly transported
UNEP	United Nations Environment Programme (United Nations Avenue, Gigiri, PO Box 30552, 00100, Nairobi, Kenya)
UNESCO/IOC	UN Educational, Scientific and Cultural Organization/Intergovernmental Oceanographic Commission (UNESCO/IOC, 1 rue Miollis, 75732 Paris Cedex 15, France)
WHO	World Health Organization (Avenue Appia 20, CH-1211 Geneva 27, Switzerland)
WMO	World Meteorological Organization (WMO, 7bis, avenue de la Paix, Case postale No. 2300, CH-1211 Geneva 2, Switzerland)

Chapter 1.3

Training

1.3.0 Introductory note

The successful application of regulations concerning the transport of dangerous goods and the achievement of their objectives are greatly dependent on the appreciation by all persons concerned of the risks involved and on a detailed understanding of the regulations. This can only be achieved by properly planned and maintained initial and retraining programmes for all persons concerned with the transport of dangerous goods. The provisions of paragraphs 1.3.1.4 to 1.3.1.7 remain recommendatory (see 1.1.1.5).

1.3.1 Training of shore-side personnel

1.3.1.1 Shore-based personnel engaged in the transport of dangerous goods intended to be transported by sea shall be trained in the contents of dangerous goods provisions commensurate with their responsibilities. Employees shall be trained in accordance with the provisions of 1.3.1 before assuming responsibilities and shall only perform functions, for which required training has not yet been provided, under the direct supervision of a trained person. Training requirements specific to security of dangerous goods in chapter 1.4 shall also be addressed.

Entities engaging shore-based personnel in such activities shall determine which staff will be trained, what levels of training they require and the training methods used to enable them to comply with the provisions of the IMDG Code. This training shall be provided or verified upon employment in a position involving dangerous goods transport. For personnel who have not yet received the required training, the entities shall ensure that those personnel may only perform functions under the direct supervision of a trained person. The training shall be periodically supplemented with refresher training to take account of changes in regulations and practice. The competent authority, or its authorized body, may audit the entity to verify the effectiveness of the system in place, in providing training of staff commensurate with their role and responsibilities in the transport chain.

1.3.1.2 Shore-based personnel such as those who:

- classify dangerous goods and identify proper shipping names of dangerous goods;
- pack dangerous goods;
- mark, label or placard dangerous goods;
- load/unload Cargo Transport Units;
- prepare transport documents for dangerous goods;
- offer dangerous goods for transport;
- accept dangerous goods for transport;
- handle dangerous goods in transport;
- prepare dangerous goods loading/stowage plans;
- load/unload dangerous goods into/from ships;
- carry dangerous goods in transport;
- enforce or survey or inspect for compliance with applicable rules and regulations; or
- are otherwise involved in the transport of dangerous goods as determined by the competent authority

shall be trained in the following:

1.3.1.2.1 *General awareness/familiarization training:*

- .1 each person shall be trained in order to be familiar with the general provisions of dangerous goods transport provisions;

.2 such training shall include a description of the classes of dangerous goods; labelling, marking, placarding, packing, stowage, segregation and compatibility provisions; a description of the purpose and content of the dangerous goods transport documents (such as the Multimodal Dangerous Goods Form and the Container/Vehicle Packing Certificate); and a description of available emergency response documents.

1.3.1.2.2 *Function-specific training:* Each person shall be trained in specific dangerous goods transport provisions which are applicable to the function that person performs. An indicative list, for guidance purposes only, of some of the functions typically found in dangerous goods transport operations by sea and training requirements is given in paragraph 1.3.1.6.

1.3.1.3 Records of training received according to this chapter shall be kept by the employer and made available to the employee or competent authority, upon request. Records shall be kept by the employer for a period of time established by the competent authority.

1.3.1.4 *Safety training:* Commensurate with the risk of exposure in the event of a release and the functions performed, each person should be trained in:

- .1 methods and procedures for accident avoidance, such as proper use of package-handling equipment and appropriate methods of stowage of dangerous goods;
- .2 available emergency response information and how to use it;
- .3 general dangers presented by the various classes of dangerous goods and how to prevent exposure to those hazards, including, if appropriate, the use of personal protective clothing and equipment; and
- .4 immediate procedures to be followed in the event of an unintentional release of dangerous goods, including any emergency response procedures for which the person is responsible and personal protection procedures to be followed.

1.3.1.5 Recommended training needs for shore-side personnel involved in the transport of dangerous goods under the IMDG Code

The following indicative table is for information purposes only as every entity is arranged differently and may have varied roles and responsibilities within that entity.

Function	Specific training requirements	Numbers in this column refer to the list of related codes and publications in 1.3.1.7
1 Classify dangerous goods and identify proper shipping name	Classification requirements, in particular <ul style="list-style-type: none"> – the structure of the description of substances – the classes of dangerous goods and the principles of their classification – the nature of the dangerous substances and articles transported (their physical, chemical and toxicological properties) – the procedure for classifying solutions and mixtures – identification by proper shipping name – use of Dangerous Goods List 	.1, .4, .5 and .12
2 Pack dangerous goods	Classes Packaging requirements <ul style="list-style-type: none"> – type of packages (IBC, large packaging, tank container and bulk container) – UN marking for approved packagings – segregation requirements – limited quantities and excepted quantities Marking and labelling First aid measures Emergency response procedures Safe handling procedures	.1 and .4
3 Mark, label or placard dangerous goods	Classes Marking, labelling and placarding requirements <ul style="list-style-type: none"> – primary and subsidiary risk labels – marine pollutants – limited quantities and excepted quantities 	.1

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Function	Specific training requirements	Numbers in this column refer to the list of related codes and publications in 1.3.1.7
4 Load/unload cargo transport units	Documentation Classes Marking, labelling and placarding Stowage requirements, where applicable Segregation requirements Cargo securing requirements (as contained in the CTU Code) Emergency response procedures First aid measures CSC requirements Safe handling procedures	.1, .6, .7 and .8
5 Prepare transport documents for dangerous goods	Documentation requirements <ul style="list-style-type: none"> - transport document - container/vehicle packing certificate - competent authorities' approval - waste transport documentation - special documentation, where appropriate 	.1
6 Offer dangerous goods for transport	Thorough knowledge of the IMDG Code Local requirements at loading and discharge ports <ul style="list-style-type: none"> - port byelaws - national transport regulations 	.1 to .10 and .12
7 Accept dangerous goods for transport	Thorough knowledge of the IMDG Code Local requirements at loading, transiting and discharge ports <ul style="list-style-type: none"> - port byelaws, in particular quantity limitations - national transport regulations 	.1 to .12
8 Handle dangerous goods in transport	Classes and their hazards Marking, labelling and placarding Emergency response procedures First aid measures Safe handling procedures such as <ul style="list-style-type: none"> - use of equipment - appropriate tools - safe working loads CSC requirements, local requirements at loading, transit and discharge ports Port byelaws, in particular, quantity limitation National transport regulations	.1, .2, .3, .6, .7, .8 and .10
9 Prepare dangerous goods loading/stowage plans	Documentation Classes Stowage requirements Segregation requirements Document of compliance Relevant IMDG Code parts, local requirements at loading, transit and discharge ports Port byelaws, in particular, quantity limitations	.1, .10, .11 and .12
10 Load/unload dangerous goods into/from ships	Classes and their hazards Marking, labelling and placarding Emergency response procedures First aid measures Safe handling procedures such as <ul style="list-style-type: none"> - use of equipment - appropriate tools - safe working loads Cargo securing requirements CSC requirements, local requirements at loading, transit and discharge ports Port byelaws, in particular, quantity limitation National transport regulations	.1, .2, .3, .7, .9, .10 and .12

- 1.3.1.7 Related Codes and publications which may be appropriate for function-specific training**
- .1 International Maritime Dangerous Goods (IMDG) Code, as amended
 - .2 The EmS Guide: Emergency Response Procedures for Ships Carrying Dangerous Goods (EmS), as amended
 - .3 Medical First Aid Guide for Use in Accidents Involving Dangerous Goods (MFAG), as amended
 - .4 United Nations Recommendations on the Transport of Dangerous Goods – Model Regulations, as amended
 - .5 United Nations Recommendations on the Transport of Dangerous Goods – Manual of Tests and Criteria, as amended
 - .6 CTU Code
 - .7 Recommendations on the Safe Transport of Dangerous Cargoes and Related Activities in Port Areas
 - .8 International Convention for Safe Containers (CSC), 1972, as amended
 - .9 Code of Safe Practice for Cargo Stowage and Securing (CSS Code), as amended
 - .10 Recommendations on the safe use of pesticides in ships applicable to the fumigation of cargo transport units (MSC.1/Circ.1265)
 - .11 International Convention for the Safety of Life at Sea (SOLAS), 1974, as amended
 - .12 International Convention for the Prevention of Pollution from Ships 1973 as modified by the Protocol of 1978 (MARPOL), as amended.
 - .13 Inspection programmes for cargo transport units carrying dangerous goods (MSC.1/Circ.1442).

Chapter 1.4

Security provisions

1.4.0 Scope

1.4.0.1 The provisions of this chapter address the security of dangerous goods in transport by sea. National competent authorities may apply additional security provisions, which should be considered when offering or transporting dangerous goods. The provisions of this chapter remain recommendatory except 1.4.1.1 (see 1.1.1.5).

1.4.0.2 The provisions of 1.4.2 and 1.4.3 do not apply to:

- .1 UN 2908 and UN 2909 excepted packages;
- .2 UN 2910 and UN 2911 excepted packages with an activity level not exceeding the A_2 value; and
- .3 UN 2912 LSA-I and UN 2913 SCO-I.

1.4.1 General provisions for companies, ships and port facilities

1.4.1.1 The relevant provisions of chapter XI-2 of SOLAS, as amended, and of part A of the International Ship and Port Facility Security (ISPS) Code apply to companies, ships and port facilities engaged in the transport of dangerous goods and to which regulation XI-2 of SOLAS, as amended, apply taking into account the guidance given in part B of the ISPS Code.

1.4.1.2 For cargo ships of less than 500 gross tons engaged in the transport of dangerous goods, it is recommended that Contracting Governments to SOLAS, as amended, consider security provisions for these cargo ships.

1.4.1.3 Any shore-based company personnel, ship-based personnel and port facility personnel engaged in the transport of dangerous goods should be aware of the security requirements for such goods, in addition to those specified in the ISPS Code, and commensurate with their responsibilities.

1.4.1.4 The training of the company security officer, shore-based company personnel having specific security duties, port facility security officer and port facility personnel having specific duties, engaged in the transport of dangerous goods, should also include elements of security awareness related to those goods.

1.4.1.5 All shipboard personnel and port facility personnel who are not mentioned in 1.4.1.4 and are engaged in the transport of dangerous goods should be familiar with the provisions of the relevant security plans related to those goods, commensurate with their responsibilities.

1.4.2 General provisions for shore-side personnel

1.4.2.1 For the purpose of this subsection, shore-side personnel covers individuals mentioned in 1.3.1.2. However, the provisions of 1.4.2 do not apply to:

- the company security officer and appropriate shore-based company personnel mentioned in 13.1 of part A of the ISPS Code,
- the ship security officer and the shipboard personnel mentioned in 13.2 and 13.3 of part A of the ISPS Code,
- the port facility security officer, the appropriate port facility security personnel and the port facility personnel having specific security duties mentioned in 18.1 and 18.2 of part A of the ISPS Code.

For the training of those officers and personnel, refer to the International Ship and Port Facility Security (ISPS) Code.

1.4.2.2 Shore-side personnel engaged in transport by sea of dangerous goods should consider security provisions for the transport of dangerous goods commensurate with their responsibilities.

1.4.2.3 **Security training**

1.4.2.3.1 The training of shore-side personnel, as specified in chapter 1.3, shall also include elements of security awareness.

1.4.2.3.2 Security awareness training should address the nature of security risks, recognizing security risks, methods to address and reduce risks and actions to be taken in the event of a security breach. It should include awareness of security plans (if appropriate, refer to 1.4.3) commensurate with the responsibilities of individuals and their part in implementing security plans.

1.4.2.3.3 Such training should be provided or verified upon employment in a position involving dangerous goods transport and should be periodically supplemented with retraining.

1.4.2.3.4 Records of all security training received should be kept by the employer and made available to the employee or competent authority, upon request. Records should be kept by the employer for a period of time established by the competent authority.

1.4.3 **Provisions for high consequence dangerous goods**

1.4.3.1 **Definition of high consequence dangerous goods**

1.4.3.1.1 High consequence dangerous goods are those which have the potential for misuse in a terrorist event and which may, as a result, produce serious consequences such as mass casualties, mass destruction or, particularly for class 7, mass socio-economic disruption.

1.4.3.1.2 An indicative list of high consequence dangerous goods in classes and divisions other than class 7 is given in table 1.4.1 below.

Table 1.4.1 – Indicative list of high consequence dangerous goods

Class 1, Division 1.1	explosives
Class 1, Division 1.2	explosives
Class 1, Division 1.3	compatibility group C explosives
Class 1, Division 1.4	UN Nos. 0104, 0237, 0255, 0267, 0289, 0361, 0365, 0366, 0440, 0441, 0455, 0456 and 0500
Class 1, Division 1.5	explosives
Class 2.1	flammable gases in quantities greater than 3,000 L in a road tank vehicle, a railway tank wagon or a portable tank
Class 2.3	toxic gases
Class 3	flammable liquids of packing groups I and II in quantities greater than 3,000 L in a road tank vehicle, a railway tank wagon or a portable tank
Class 3	liquid desensitized explosives
Class 4.1	solid desensitized explosives
Class 4.2	goods of packing group I in quantities greater than 3,000 kg or 3,000 L in a road tank vehicle, a railway tank wagon, a portable tank or a bulk container
Class 4.3	goods of packing group I in quantities greater than 3,000 kg or 3,000 L in a road tank vehicle, a railway tank wagon, a portable tank or a bulk container
Class 5.1	oxidizing liquids of packing group I in quantities greater than 3,000 L in a road tank vehicle, a railway tank wagon or a portable tank
Class 5.1	perchlorates, ammonium nitrate, ammonium nitrate fertilizers and ammonium nitrate emulsions or suspensions or gels in quantities greater than 3,000 kg or 3,000 L in a road tank vehicle, a railway tank wagon, a portable tank or a bulk container
Class 6.1	toxic substances of packing group I
Class 6.2	infectious substances of category A (UN Nos. 2814 and 2900)

Class 8 corrosive substances of packing group I in quantities greater than 3,000 kg or 3,000 L in a road tank vehicle, a railway tank wagon, a portable tank or a bulk container

1.4.3.1.3 For dangerous goods of class 7, high consequence radioactive material is that with an activity equal to or greater than a transport security threshold of 3,000 A_2 per single package (see also 2.7.2.2.1) except for the following radionuclides where the transport security threshold is given in table 1.4.2 below.

Table 1.4.2 – Transport security thresholds for specific radionuclides

Element	Radionuclide	Transport security threshold (TBq)
Americium	Am-241	0.6
Gold	Au-198	2
Cadmium	Cd-109	200
Californium	Cf-252	0.2
Curium	Cm-244	0.5
Cobalt	Co-57	7
Cobalt	Co-60	0.3
Caesium	Cs-137	1
Iron	Fe-55	8,000
Germanium	Ge-68	7
Gadolinium	Gd-153	10
Iridium	Ir-192	0.8
Nickel	Ni-63	600
Palladium	Pd-103	900
Promethium	Pm-147	400
Polonium	Po-210	0.6
Plutonium	Pu-238	0.6
Plutonium	Pu-239	0.6
Radium	Ra-226	0.4
Ruthenium	Ru-106	3
Selenium	Se-75	2
Strontium	Sr-90	10
Thallium	Tl-204	200
Thulium	Tm-170	200
Ytterbium	Yb-169	3

1.4.3.1.4 For mixtures of radionuclides, determination of whether or not the transport security threshold has been met or exceeded can be calculated by summing the ratios of activity present for each radionuclide divided by the transport security threshold for that radionuclide. If the sum of the fractions is less than 1, then the radioactivity threshold for the mixture has not been met nor exceeded.

This calculation can be made with the formula:

$$\sum_i \frac{A_i}{T_i} < 1$$

where:

A_i = activity of radionuclide i that is present in a package (TBq)

T_i = transport security threshold for radionuclide i (TBq).

1.4.3.1.5 When radioactive materials possess subsidiary risks of other classes or divisions, the criteria of table 1.4.1 should also be taken into account (see also 1.5.5.1).

1.4.3.2 Specific security provisions for high consequence dangerous goods

1.4.3.2.1 The provisions of this section do not apply to ships and to port facilities (see the ISPS Code for ship security plan and for port facility security plan).

1.4.3.2.2 Security plans

1.4.3.2.2.1 Consignors and others engaged in the transport of high consequence dangerous goods (see 1.4.3.1) should adopt, implement and comply with a security plan that addresses at least the elements specified in 1.4.3.2.2.2.

1.4.3.2.2.2 The security plan should comprise at least the following elements:

- .1 specific allocation of responsibilities for security to competent and qualified persons with appropriate authority to carry out their responsibilities;
- .2 records of dangerous goods or types of dangerous goods transported;
- .3 review of current operations and assessment of vulnerabilities, including intermodal transfer, temporary transit storage, handling and distribution, as appropriate;
- .4 clear statements of measures, including training, policies (including response to higher threat conditions, new employee/employment verification, etc.), operating practices (e.g. choice/use of routes where known, access to dangerous goods in temporary storage, proximity to vulnerable infrastructure, etc.), equipment and resources that are to be used to reduce security risks;
- .5 effective and up-to-date procedures for reporting and dealing with security threats, breaches of security or security-related incidents;
- .6 procedures for the evaluation and testing of security plans and procedures for periodic review and update of the plans;
- .7 measures to ensure the security of transport information contained in the plan; and
- .8 measures to ensure that the distribution of transport information is limited as far as possible. (Such measures shall not preclude provision of transport documentation required by chapter 5.4 of this Code.)

1.4.3.2.3 For radioactive material, the provisions of this chapter are deemed to be complied with when the provisions of the Convention on Physical Protection of Nuclear Material and the IAEA circular on The Physical Protection of Nuclear Material and Nuclear Facilities are applied.

Chapter 1.5

General provisions concerning radioactive material

1.5.1 Scope and application

1.5.1.1 The provisions of this Code establish standards of safety which provide an acceptable level of control of the radiation, criticality and thermal hazards to persons, property and the environment that are associated with the transport of radioactive material. These provisions are based on the IAEA *Regulations for the Safe Transport of Radioactive Material*, 2012 Edition, IAEA Safety Standards Series No. SSR-6, IAEA, Vienna (2012). Explanatory material can be found in *Advisory Material for the IAEA Regulations for the Safe Transport of Radioactive Material* (2012 Edition), IAEA Safety Standards Series No. SSG-26, IAEA, Vienna (2014).

1.5.1.2 The objective of this Code is to establish provisions that shall be satisfied to ensure safety and to protect persons, property and the environment from the effects of radiation in the transport of radioactive material. This protection is achieved by requiring:

- .1 containment of the radioactive contents;
- .2 control of external radiation levels;
- .3 prevention of criticality; and
- .4 prevention of damage caused by heat.

These provisions are satisfied firstly by applying a graded approach to contents limits for packages and conveyances and to performance standards applied to package designs depending upon the hazard of the radioactive contents. Secondly, they are satisfied by imposing conditions on the design and operation of packages and on the maintenance of packagings, including a consideration of the nature of the radioactive contents. Finally, they are satisfied by requiring administrative controls including, where appropriate, approval by competent authorities.

1.5.1.3 The provisions of this Code apply to the transport of radioactive material by sea, including transport which is incidental to the use of the radioactive material. Transport comprises all operations and conditions associated with and involved in the movement of radioactive material; these include the design, manufacture, maintenance and repair of packaging, and the preparation, consigning, loading, transport including in-transit storage, unloading and receipt at the final destination of loads of radioactive material and packages. A graded approach is applied to the performance standards in the provisions of this Code that are characterized by three general severity levels:

- .1 routine conditions of transport (incident-free);
- .2 normal conditions of transport (minor mishaps); and
- .3 accident conditions of transport.

1.5.1.4 The provisions of this Code do not apply to any of the following:

- .1 radioactive material that is an integral part of the means of transport;
- .2 radioactive material moved within an establishment which is subject to appropriate safety regulations in force in the establishment and where the movement does not involve public roads or railways;
- .3 radioactive material implanted or incorporated into a person or live animal for diagnosis or treatment;
- .4 radioactive material in or on a person who is to be transported for medical treatment because the person has been subject to accidental or deliberate intake of radioactive material or to contamination;
- .5 radioactive material in consumer products which have received regulatory approval, following their sale to the end user;
- .6 natural material and ores containing naturally occurring radionuclides (which may have been processed), provided the activity concentration of the material does not exceed 10 times the values specified in table 2.7.2.2.1, or calculated in accordance with 2.7.2.2.1 and 2.7.2.2.3 to 2.7.2.2.6. For natural materials and ores containing naturally occurring radionuclides that are not in secular equilibrium the calculation of the activity concentration shall be performed in accordance with 2.7.2.2.4; and

- .7 non-radioactive solid objects with radioactive substances present on any surfaces in quantities not in excess of the limit set out in the definition for "contamination" in 2.7.1.2.

1.5.1.5 Specific provisions for the transport of excepted packages

1.5.1.5.1 Excepted packages which may contain radioactive material in limited quantities, instruments, manufactured articles or empty packagings as specified in 2.7.2.4.1 shall be subject only to the following provisions of parts 5 to 7:

- .1 the applicable provisions specified in 5.1.1.2, 5.1.2, 5.1.3.2, 5.1.5.2.2, 5.1.5.2.3, 5.1.5.4, 5.2.1.7, 7.1.4.5.9, 7.1.4.5.10, 7.1.4.5.12, 7.8.4.1 to 7.8.4.6 and 7.8.9.1; and
- .2 the requirements for excepted packages specified in 6.4.4,

except when the radioactive material possesses other hazardous properties and has to be classified in a class other than class 7 in accordance with special provision 290 or 369 of chapter 3.3, where the provisions listed in .1 and .2 above apply only as relevant and in addition to those relating to the main class or division.

1.5.1.5.2 Excepted packages shall be subject to the relevant provisions of all other parts of this Code. If the excepted package contains fissile material, one of the fissile exceptions provided by 2.7.2.3.5 shall apply and the requirements of 5.1.5.5 shall be met.

1.5.2 Radiation protection programme

1.5.2.1 The transport of radioactive material shall be subject to a radiation protection programme which shall consist of systematic arrangements aimed at providing adequate consideration of radiation protection measures.

1.5.2.2 Doses to persons shall be below the relevant dose limits. Protection and safety shall be optimized in order that the magnitude of individual doses, the number of persons exposed, and the likelihood of incurring exposure shall be kept as low as reasonably achievable, economic and social factors being taken into account, within the restrictions that the doses to individuals be subject to dose constraints. A structured and systematic approach shall be adopted and shall include consideration of the interfaces between transport and other activities.

1.5.2.3 The nature and extent of the measures to be employed in the programme shall be related to the magnitude and likelihood of radiation exposures. The programme shall incorporate the provisions in 1.5.2.2, 1.5.2.4 and 7.1.4.5.13 to 7.1.4.5.18. Programme documents shall be available, on request, for inspection by the relevant competent authority.

1.5.2.4 For occupational exposures arising from transport activities, where it is assessed that the effective dose either:

- .1 is likely to be between 1 and 6 mSv in a year, a dose assessment programme via workplace monitoring or individual monitoring shall be conducted; or
- .2 is likely to exceed 6 mSv in a year, individual monitoring shall be conducted.

When individual monitoring or workplace monitoring is conducted, appropriate records shall be kept.

Note: For occupational exposures arising from transport activities, where it is assessed that the effective dose is most unlikely to exceed 1 mSv in a year, no special work patterns, detailed monitoring, dose assessment programmes or individual record keeping need be required.

1.5.3 Management system

1.5.3.1 A management system based on international, national or other standards acceptable to the competent authority shall be established and implemented for all activities within the scope of this Code, as identified in 1.5.1.3, to ensure compliance with the relevant provisions of this Code. Certification that the design specification has been fully implemented shall be available to the competent authority. The manufacturer, consignor or user shall be prepared:

- .1 to provide facilities for inspection during manufacture and use; and
- .2 to demonstrate compliance with this Code to the competent authority.

Where competent authority approval is required, such approval shall take into account and be contingent upon the adequacy of the management system.

1.5.4 Special arrangement

1.5.4.1 *Special arrangement* shall mean those provisions, approved by the competent authority, under which consignments which do not satisfy all the provisions of this Code applicable to radioactive material may be transported.

1.5.4.2 Consignments for which conformity with any provision applicable to radioactive material is impracticable shall not be transported except under special arrangement. Provided the competent authority is satisfied that conformity with the radioactive material provisions of this Code is impracticable and that the requisite standards of safety established by this Code have been demonstrated through alternative means, the competent authority may approve special arrangement transport operations for single or a planned series of multiple consignments. The overall level of safety in transport shall be at least equivalent to that which would be provided if all the applicable provisions had been met. For international consignments of this type, multilateral approval shall be required.

1.5.5 Radioactive material possessing other dangerous properties

1.5.5.1 In addition to the radioactive and fissile properties, any subsidiary risk of the contents of a package, such as explosiveness, flammability, pyrophoricity, chemical toxicity and corrosiveness, shall also be taken into account in the documentation, packing, labelling, marking, placarding, stowage, segregation and transport, in order to be in compliance with all relevant provisions for dangerous goods. (See also special provision 172 and, for excepted packages, special provision 290.)

1.5.6 Non-compliance

1.5.6.1 In the event of non-compliance with any limit in the provisions of this Code applicable to radiation level or contamination,

- .1** the consignor, consignee, carrier and any organization involved during transport who may be affected, as appropriate, shall be informed of the non-compliance:
 - .1** by the carrier if the non-compliance is identified during transport; or
 - .2** by the consignee if the non-compliance is identified at receipt;
- .2** the carrier, consignor or consignee, as appropriate, shall:
 - .1** take immediate steps to mitigate the consequences of the non-compliance;
 - .2** investigate the non-compliance and its causes, circumstances and consequences;
 - .3** take appropriate action to remedy the causes and circumstances that led to the non-compliance and to prevent a recurrence of similar circumstances that led to the non-compliance; and
 - .4** communicate to the relevant competent authority(ies) on the causes of the non-compliance and on corrective or preventive actions taken or to be taken;
- .3** The communication of the non-compliance to the consignor and relevant competent authority(ies), respectively, shall be made as soon as practicable and it shall be immediate whenever an emergency exposure situation has developed or is developing.

PART 2

CLASSIFICATION

Chapter 2.0

Introduction

Note: For the purposes of this Code, it has been necessary to classify dangerous goods in different classes, to subdivide a number of these classes and to define and describe characteristics and properties of the substances, materials and articles which would fall within each class or division. Moreover, in accordance with the criteria for the selection of marine pollutants for the purposes of Annex III of the International Convention for the Prevention of Pollution from Ships, 1973, as modified by the Protocol of 1978 relating thereto (MARPOL), a number of dangerous substances in the various classes have also been identified as substances harmful to the marine environment (MARINE POLLUTANTS).

2.0.0 Responsibilities

2.0.0.1 The classification shall be made by the shipper/consignor or by the appropriate competent authority where specified in this Code.

2.0.0.2 A consignor who has identified, on the basis of test data, that a substance listed by name in column 2 of the Dangerous Goods List in chapter 3.2 meets classification criteria for a hazard class or division that is not identified in the list, may, with the approval of the competent authority, consign the substance:

- under the most appropriate "generic" or "not otherwise specified (N.O.S.)" entry reflecting all hazards; or
- under the same UN number and name but with additional hazard communication information as appropriate to reflect the additional subsidiary risk(s) (documentation, label, placard) provided that the primary hazard class remains unchanged and that any other transport conditions (e.g. limited quantity, packaging and tank provisions) that would normally apply to substances possessing such a combination of hazards are the same as those applicable to the substance listed.

Note: When a competent authority grants such approvals, it should inform the United Nations Sub-Committee of Experts on the Transport of Dangerous Goods* accordingly and submit a relevant proposal of amendment to the Dangerous Goods List. Should the proposed amendment be rejected, the competent authority should withdraw its approval.

2.0.1 Classes, divisions, packing groups

2.0.1.1 Definitions

Substances (including mixtures and solutions) and articles subject to the provisions of this Code are assigned to one of the classes 1–9 according to the hazard or the most predominant of the hazards they present. Some of these classes are subdivided into divisions. These classes or divisions are as listed below:

Class 1: Explosives

- Division 1.1: substances and articles which have a mass explosion hazard
- Division 1.2: substances and articles which have a projection hazard but not a mass explosion hazard
- Division 1.3: substances and articles which have a fire hazard and either a minor blast hazard or a minor projection hazard or both, but not a mass explosion hazard
- Division 1.4: substances and articles which present no significant hazard
- Division 1.5: very insensitive substances which have a mass explosion hazard
- Division 1.6: extremely insensitive articles which do not have a mass explosion hazard

Class 2: Gases

- Class 2.1: flammable gases
- Class 2.2: non-flammable, non-toxic gases
- Class 2.3: toxic gases

Class 3: Flammable liquids

Class 4: Flammable solids; substances liable to spontaneous combustion; substances which, in contact with water, emit flammable gases

Class 4.1: flammable solids, self-reactive substances, solid desensitized explosives and polymerizing substances

Class 4.2: substances liable to spontaneous combustion

Class 4.3: substances which, in contact with water, emit flammable gases

Class 5: Oxidizing substances and organic peroxides

Class 5.1: oxidizing substances

Class 5.2: organic peroxides

Class 6: Toxic and infectious substances

Class 6.1: toxic substances

Class 6.2: infectious substances

Class 7: Radioactive material

Class 8: Corrosive substances

Class 9: Miscellaneous dangerous substances and articles

The numerical order of the classes and divisions is not that of the degree of danger.

2.0.1.2 Marine pollutants

2.0.1.2.1 Many of the substances assigned to classes 1 to 6.2, 8 and 9 are deemed as being *marine pollutants* (see chapter 2.10).

2.0.1.2.2 Known marine pollutants are noted in the Dangerous Goods List and are indicated in the Index.

2.0.1.3 For packing purposes, substances other than those of classes 1, 2, 5.2, 6.2 and 7, and other than self-reactive substances of class 4.1, are assigned to three packing groups in accordance with the degree of danger they present:

Packing group I: substances presenting high danger;

Packing group II: substances presenting medium danger; and

Packing group III: substances presenting low danger.

The packing group to which a substance is assigned is indicated in the Dangerous Goods List in chapter 3.2.

Articles are not assigned to packing groups. For packing purposes, any requirement for a specific packaging performance level is set out in the applicable packing instruction.

2.0.1.4 Dangerous goods are determined to present one or more of the dangers represented by classes 1 to 9, marine pollutants and, if applicable, the degree of danger (packing group) on the basis of the provisions in chapters 2.1 to 2.10.

2.0.1.5 Dangerous goods presenting a danger of a single class or division are assigned to that class or division and the packing group, if applicable, determined. When an article or substance is specifically listed by name in the Dangerous Goods List in chapter 3.2, its class or division, its subsidiary risk(s) and, when applicable, its packing group are taken from this list.

2.0.1.6 Dangerous goods meeting the defining criteria of more than one hazard class or division and which are not listed by name in the Dangerous Goods List are assigned to a class or division and subsidiary risk(s) on the basis of the precedence of hazard provisions prescribed in 2.0.3.

2.0.2 UN numbers and proper shipping names

2.0.2.1 Dangerous goods are assigned to UN numbers and proper shipping names according to their hazard classification and their composition.

2.0.2.2 Dangerous goods commonly transported are listed in the Dangerous Goods List in chapter 3.2. Where an article or substance is specifically listed by name, it shall be identified in transport by the proper shipping name in the Dangerous Goods List. Such substances may contain technical impurities (for example those deriving from the production process) or additives for stability or other purposes that do not affect their classification. However, a substance listed by name containing technical impurities or additives for stability or other purposes affecting its classification shall be considered a mixture or solution (see 2.0.2.5). For dangerous goods not specifically listed by name, "generic" or "not otherwise specified" entries are provided (see 2.0.2.7) to identify the article or substance in transport. The substances listed by name in column (2) of the Dangerous Goods List of chapter 3.2 shall be transported according to their classification in the list or under the conditions specified in 2.0.0.2.

Each entry in the Dangerous Goods List is assigned a UN number. This list also contains relevant information for each entry, such as hazard class, subsidiary risk(s) (if any), packing group (where assigned), packing and tank transport provisions, EmS, segregation and stowage, properties and observations, etc.

Entries in the Dangerous Goods List are of the following four types:

- .1 single entries for well-defined substances or articles:
 - e.g. UN 1090 acetone
 - UN 1194 ethyl nitrite solution
- .2 generic entries for well-defined groups of substances or articles:
 - e.g. UN 1133 adhesives
 - UN 1266 perfumery product
 - UN 2757 carbamate pesticide, solid, toxic
 - UN 3101 organic peroxide type B, liquid
- .3 specific N.O.S. entries covering a group of substances or articles of a particular chemical or technical nature:
 - e.g. UN 1477 nitrates, inorganic, N.O.S.
 - UN 1987 alcohols, N.O.S.
- .4 general N.O.S. entries covering a group of substances or articles meeting the criteria of one or more classes:
 - e.g. UN 1325 flammable solid, organic, N.O.S.
 - UN 1993 flammable liquid, N.O.S.

2.0.2.3 All self-reactive substances of class 4.1 are assigned to one of 20 generic entries in accordance with the classification principles described in 2.4.2.3.3.

2.0.2.4 All organic peroxides of class 5.2 are assigned to one of 20 generic entries in accordance with the classification principles described in 2.5.3.3.

2.0.2.5 A mixture or solution meeting the classification criteria of this Code composed of a single predominant substance identified by name in the Dangerous Goods List and one or more substances not subject to the provisions of this Code and/or traces of one or more substances identified by name in the Dangerous Goods List, shall be assigned the UN number and proper shipping name of the predominant substance named in the Dangerous Goods List unless:

- .1 the mixture or solution is identified by name in the Dangerous Goods List;
- .2 the name and description of the substance named in the Dangerous Goods List specifically indicate that they apply only to the pure substance;
- .3 the hazard class or division, subsidiary risk(s), packing group, or physical state of the mixture or solution is different from that of the substance named in the Dangerous Goods List; or
- .4 the hazard characteristics and properties of the mixture or solution necessitate emergency response measures that are different from those required for the substance identified by name in the Dangerous Goods List.

In those other cases, except the one described in .1, the mixture or solution shall be treated as a dangerous substance not specifically listed by name in the Dangerous Goods List.

2.0.2.6 When the class, physical state or packing group has changed in comparison with the pure substance, the solution or mixture shall be shipped in accordance with the provisions for the changed hazard under an appropriate N.O.S. entry.

2.0.2.7 Substances or articles which are not specifically listed by name in the Dangerous Goods List shall be classified under a "generic" or "not otherwise specified" (N.O.S.) proper shipping name. The substance or article shall be classified according to the class definitions and test criteria in this part, and the article or substance classified under the generic or "N.O.S." proper shipping name in the Dangerous Goods List which most appropriately describes the article or substance. This means that a substance is only to be assigned to an entry of type .3, as defined in 2.0.2.2, if it cannot be assigned to an entry of type .2, and to an entry of type .4 if it cannot be assigned to an entry of type .2 or .3.

2.0.2.8 When considering a solution or mixture in accordance with 2.0.2.5, due account shall be given to whether the dangerous constituent comprising the solution or mixture has been identified as a marine pollutant. If this is the case, the provisions of chapter 2.10 are also applicable.

2.0.2.9 A mixture or solution, containing one or more substances identified by name in this Code or classified under an N.O.S. or generic entry and one or more substances not subject to the provisions of this Code, is not subject to the provisions of this Code if the hazard characteristics of the mixture or solution are such that they do not meet the criteria (including human experience criteria) for any class.

2.0.2.10 A mixture or solution meeting the classification criteria of this Code that is not identified by name in the Dangerous Goods List and that is composed of two or more dangerous goods shall be assigned to an entry that has the proper shipping name, description, hazard class or division, subsidiary risk(s) and packing group that most precisely describe the mixture or solution.

2.0.3 Classification of substances, mixtures and solutions with multiple hazards (precedence of hazard characteristics)

2.0.3.1 The table of precedence of hazard characteristics in 2.0.3.6 shall be used to determine the class of a substance, mixture or solution having more than one hazard when it is not specifically listed by name in this Code. For substances, mixtures or solutions having multiple hazards which are not specifically listed by name, the most stringent packing group of those assigned to the respective hazards of the goods takes precedence over other packing groups, irrespective of the precedence of hazard table in 2.0.3.6.

2.0.3.2 The precedence of hazard table indicates which of the hazards shall be regarded as the primary hazard. The class which appears at the intersection of the horizontal line and the vertical column is the primary hazard and the remaining class is the subsidiary hazard. The packing groups for each of the hazards associated with the substance, mixture or solution shall be determined by reference to the appropriate criteria. The most stringent of the groups so indicated shall then become the packing group of the substance, mixture or solution.

2.0.3.3 The proper shipping name (see 3.1.2) of a substance, mixture or solution when classified in accordance with 2.0.3.1 and 2.0.3.2 shall be the most appropriate N.O.S. ("not otherwise specified") entry in this Code for the class shown as the primary hazard.

2.0.3.4 The precedence of hazard characteristics of the following substances, materials and articles have not been dealt with in the precedence of hazard table, as these primary hazards always take precedence:

- .1 substances and articles of class 1;
- .2 gases of class 2;
- .3 liquid desensitized explosives of class 3;
- .4 self-reactive substances and solid desensitized explosives of class 4.1;
- .5 pyrophoric substances of class 4.2;
- .6 substances of class 5.2;
- .7 substances of class 6.1 with a packing group I vapour inhalation toxicity;
- .8 substances of class 6.2; and
- .9 materials of class 7.

2.0.3.5 Apart from excepted radioactive material (where the other hazardous properties take precedence), radioactive material having other hazardous properties shall always be classified in class 7, with the greatest of the additional hazards being identified. For radioactive material in excepted packages, except for UN 3507, URANIUM HEXAFLUORIDE, RADIOACTIVE MATERIAL, EXCEPTED PACKAGE, special provision 290 of chapter 3.3 applies.

2.0.3.6 Precedence of hazards

Class and Packing Group	4.2	4.3	5.1 I	5.1 II	5.1 III	6.1, I Dermal	6.1, I Oral	6.1 II	6.1 III	8, I Liquid	8, I Solid	8, II Liquid	8, II Solid	8, III Liquid	8, III Solid
3 I*		4.3				3	3	3	3	3	–	3	–	3	–
3 II*		4.3				3	3	3	3	8	–	3	–	3	–
3 III*		4.3				6.1	6.1	6.1	3 [†]	8	–	8	–	3	–
4.1 II*	4.2	4.3	5.1	4.1	4.1	6.1	6.1	4.1	4.1	–	8	–	4.1	–	4.1
4.1 III*	4.2	4.3	5.1	4.1	4.1	6.1	6.1	6.1	4.1	–	8	–	8	–	4.1
4.2 II		4.3	5.1	4.2	4.2	6.1	6.1	4.2	4.2	8	8	4.2	4.2	4.2	4.2
4.2 III		4.3	5.1	5.1	4.2	6.1	6.1	6.1	4.2	8	8	8	8	4.2	4.2
4.3 I			5.1	4.3	4.3	6.1	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3
4.3 II			5.1	4.3	4.3	6.1	4.3	4.3	4.3	8	8	4.3	4.3	4.3	4.3
4.3 III			5.1	5.1	4.3	6.1	6.1	6.1	4.3	8	8	8	8	4.3	4.3

Class and Packing Group	4.2	4.3	5.1 I	5.1 II	5.1 III	6.1, I Dermal	6.1, I Oral	6.1 II	6.1 III	8, I Liquid	8, I Solid	8, II Liquid	8, II Solid	8, III Liquid	8, III Solid
5.1 I						5.1	5.1	5.1	5.1	5.1	5.1	5.1	5.1	5.1	5.1
5.1 II						6.1	5.1	5.1	5.1	8	8	5.1	5.1	5.1	5.1
5.1 III						6.1	6.1	6.1	5.1	8	8	8	8	5.1	5.1
6.1 I, Dermal										8	6.1	6.1	6.1	6.1	6.1
6.1 I, Oral										8	6.1	6.1	6.1	6.1	6.1
6.1 II, Inhalation										8	6.1	6.1	6.1	6.1	6.1
6.1 II, Dermal										8	6.1	8	6.1	6.1	6.1
6.1 II, Oral										8	8	8	6.1	6.1	6.1
6.1 III										8	8	8	8	8	8

* Substances of class 4.1 other than self-reactive substances and solid desensitized explosives and substances of class 3 other than liquid desensitized explosives.

† 6.1 for pesticides.

– Denotes an impossible combination.

For hazards not shown in this table, see 2.0.3.4 and 2.0.3.5.

2.0.4 Transport of samples

2.0.4.1 When the hazard class of a substance is uncertain and it is being transported for further testing, a tentative hazard class, proper shipping name and identification number shall be assigned on the basis of the consignor's knowledge of the substances and application of:

- .1 the classification criteria of this Code; and
- .2 the precedence of hazards given in 2.0.3.

The most severe packing group possible for the proper shipping name chosen shall be used.

Where this provision is used, the proper shipping name shall be supplemented with the word "SAMPLE" (such as FLAMMABLE LIQUID, N.O.S., SAMPLE). In certain instances, where a specific proper shipping name is provided for a sample of a substance considered to meet certain classification criteria (such as UN 3167, GAS SAMPLE, NON-PRESSURIZED, FLAMMABLE), that proper shipping name shall be used. When an N.O.S. entry is used to transport the sample, the proper shipping name need not be supplemented with the technical name as required by special provision 274.

2.0.4.2 Samples of the substance shall be transported in accordance with the provisions applicable to the tentative assigned proper shipping name provided:

- .1 the substance is not considered to be a substance prohibited for transport by 1.1.3;
- .2 the substance is not considered to meet the criteria for class 1 or considered to be an infectious substance or a radioactive material;
- .3 the substance is in compliance with 2.4.2.3.2.4.2 or 2.5.3.2.5.1 if it is a self-reactive substance or an organic peroxide, respectively;
- .4 the sample is transported in a combination packaging with a net mass per package not exceeding 2.5 kg; and
- .5 the sample is not packed together with other goods.

2.0.5 Transport of wastes

2.0.5.1 Preamble

Wastes, which are dangerous goods, shall be transported in accordance with the relevant international recommendations and conventions and, in particular, where it concerns transport by sea, with the provisions of this Code.

2.0.5.2 Applicability

2.0.5.2.1 The provisions of this chapter are applicable to the transport of wastes by ships and shall be considered in conjunction with all other provisions of this Code.

2.0.5.2.2 Substances, solutions, mixtures or articles containing or contaminated with radioactive material are subject to the applicable provisions for radioactive material in class 7, and are not to be considered as wastes for the purposes of this chapter.

2.0.5.3 Transboundary movements under the Basel Convention

2.0.5.3.1 Transboundary movement of wastes is permitted to commence only when:

- .1 notification has been sent by the competent authority of the country of origin, or by the generator or exporter through the channel of the competent authority of the country of origin, to the country of final destination; and
- .2 the competent authority of the country of origin, having received the written consent of the country of final destination stating that the wastes will be safely incinerated or treated by other methods of disposal, has given authorization to the movement.

2.0.5.3.2 In addition to the transport document required in chapter 5.4, all transboundary movements of wastes shall be accompanied by a waste movement document from the point at which a transboundary movement commences to the point of disposal. This document shall be available at all times to the competent authorities and to all persons involved in the management of waste transport operations.

2.0.5.3.3 The transport of solid wastes in bulk in cargo transport units and road vehicles is only permitted with the approval of the competent authority of the country of origin.

2.0.5.3.4 In the event that packages and cargo transport units containing wastes are suffering from leakage or spillage, the competent authorities of the countries of origin and destination shall be immediately informed and advice on the action to be taken obtained from them.

2.0.5.4 Classification of wastes

2.0.5.4.1 A waste containing only one constituent which is a dangerous substance subject to the provisions of this Code shall be regarded as being that particular substance. If the concentration of the constituent is such that the waste continues to present a hazard inherent in the constituent itself, it shall be classified according to the criteria of the applicable classes.

2.0.5.4.2 A waste containing two or more constituents which are dangerous substances subject to the provisions of this Code shall be classified under the applicable class in accordance with their dangerous characteristics and properties as described in 2.0.5.4.3 and 2.0.5.4.4.

2.0.5.4.3 The classification according to the dangerous characteristics and properties shall be carried out as follows:

- .1 determination of the physical and chemical characteristics and physiological properties by measurement or calculation followed by classification according to the criteria of the applicable class(es); or
- .2 if the determination is not practicable, the waste shall be classified according to the constituent presenting the predominant hazard.

2.0.5.4.4 In determining the predominant hazard, the following criteria shall be taken into account:

- .1 if one or more constituents fall within a certain class and the waste presents a hazard inherent in these constituents, the waste shall be included in that class; or
- .2 if there are constituents falling under two or more classes, the classification of the waste shall take into account the order of precedence applicable to dangerous substances with multiple hazards set out in 2.0.3.

2.0.5.4.5 Wastes harmful to the marine environment only shall be transported under the class 9 entries for ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S., UN 3082, or ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S., UN 3077, with the addition of the word "WASTE". However, this is not applicable to substances which are covered by individual entries in this Code.

2.0.5.4.6 Wastes not otherwise subject to the provisions of this Code but covered under the Basel Convention may be transported under the class 9 entries for ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S., UN 3082 or ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S., UN 3077 with the addition of the word WASTE.

Chapter 2.1

Class 1 – Explosives

2.1.0 Introductory notes (these notes are not mandatory)

- Note 1:** Class 1 is a restricted class, that is, only those explosive substances and articles that are listed in the Dangerous Goods List in chapter 3.2 may be accepted for transport. However, the competent authorities retain the right by mutual agreement to approve transport of explosive substances and articles for special purposes under special conditions. Therefore entries have been included in the Dangerous Goods List for “Substances, explosive, not otherwise specified” and “Articles, explosive, not otherwise specified”. It is intended that these entries should only be used when no other method of operation is possible.
- Note 2:** General entries such as “Explosive, blasting, type A” are used to allow for the transport of new substances. In preparing these provisions, military ammunition and explosives have been taken into consideration to the extent that they are likely to be transported by commercial carriers.
- Note 3:** A number of substances and articles in class 1 are described in appendix B. These descriptions are given because a term may not be well-known or may be at variance with its usage for regulatory purposes.
- Note 4:** Class 1 is unique in that the type of packaging frequently has a decisive effect on the hazard and therefore on the assignment to a particular division. The correct division is determined by use of the procedures provided in this chapter.

2.1.1 Definitions and general provisions

2.1.1.1 Class 1 comprises:

- .1 explosive substances (a substance which is not itself an explosive but which can form an explosive atmosphere of gas, vapour or dust is not included in class 1), except those which are too dangerous to transport or those where the predominant hazard is one appropriate to another class;
- .2 explosive articles, except devices containing explosive substances in such quantity or of such a character that their inadvertent or accidental ignition or initiation during transport shall not cause any effect external to the device either by projection, fire, smoke, heat or loud noise (see 2.1.3.4); and
- .3 substances and articles not mentioned under .1 and .2 which are manufactured with a view to producing a practical, explosive or pyrotechnic effect.

2.1.1.2 Transport of explosive substances which are unduly sensitive, or so reactive as to be subject to spontaneous reaction, is prohibited.

2.1.1.3 Definitions

For the purposes of this Code, the following definitions apply:

- .1 *Explosive substance* means a solid or liquid substance (or a mixture of substances) which is in itself capable by chemical reaction of producing gas at such a temperature and pressure and at such a speed as to cause damage to the surroundings. Pyrotechnic substances are included even when they do not evolve gases.
- .2 *Pyrotechnic substance* means a substance or a mixture of substances designed to produce an effect by heat, light, sound, gas or smoke or a combination of these as the result of non-detonative self-sustaining exothermic chemical reactions.
- .3 *Explosive article* means an article containing one or more explosive substances.
- .4 *Mass explosion* means one which affects almost the entire load virtually instantaneously.
- .5 *Phlegmatized* means that a substance (or “phlegmatizer”) has been added to an explosive to enhance its safety in handling and transport. The phlegmatizer renders the explosive insensitive, or less sensitive, to the following actions: heat, shock, impact, percussion or friction. Typical phlegmatizing agents include, but are not limited to: wax, paper, water, polymers (such as chlorofluoropolymers), alcohol and oils (such as petroleum jelly and paraffin).

2.1.1.4 Hazard divisions

The six hazard divisions of class 1 are:

Division 1.1 Substances and articles which have a mass explosion hazard

Division 1.2 Substances and articles which have a projection hazard but not a mass explosion hazard

Division 1.3 Substances and articles which have a fire hazard and either a minor blast hazard or a minor projection hazard or both, but not a mass explosion hazard

This division comprises substances and articles:

.1 which give rise to considerable radiant heat; or

.2 which burn one after another, producing minor blast or projection effects or both.

Division 1.4 Substances and articles which present no significant hazard

This division comprises substances and articles which present only a small hazard in the event of ignition or initiation during transport. The effects are largely confined to the package and no projection of fragments of appreciable size or range is to be expected. An external fire must not cause virtually instantaneous explosion of almost the entire contents of the package.

Note: Substances and articles in this division are in compatibility group S if they are so packaged or designed that any hazardous effects arising from the accidental functioning are confined within the package unless the package has been degraded by fire, in which case all blast or projection effects are limited to the extent that they do not significantly hinder fire fighting or other emergency response efforts in the immediate vicinity of the package.

Division 1.5 Very insensitive substances which have a mass explosion hazard

This division comprises substances which have a mass explosion hazard but are so insensitive that there is very little probability of initiation or of transition from burning to detonation under normal conditions of transport.

Note: The probability of transition from burning to detonation is greater when large quantities are transported in a ship. As a consequence, the stowage provisions for explosive substances in division 1.1 and for those in division 1.5 are identical.

Division 1.6 Extremely insensitive articles which do not have a mass explosion hazard

This division comprises articles which predominantly contain extremely insensitive substances and which demonstrate a negligible probability of accidental initiation or propagation.

Note: The risk from articles of division 1.6 is limited to the explosion of a single article.

2.1.1.5 Any substance or article having or suspected of having explosive characteristics shall first be considered for classification in class 1 in accordance with the procedures in 2.1.3. Goods are not classified in class 1 when:

- .1 unless specially authorized, the transport of an explosive substance is prohibited because sensitivity of the substance is excessive;
- .2 the substance or article comes within the scope of those explosive substances and articles which are specifically excluded from class 1 by the definition of this class; or
- .3 the substance or article has no explosive properties.

2.1.2 Compatibility groups and classification codes

2.1.2.1 Goods of class 1 are considered to be "compatible" if they can be safely stowed or transported together without significantly increasing either the probability of an accident or, for a given quantity, the magnitude of the effects of such an accident. By this criterion, goods listed in this class have been divided into a number of compatibility groups, each denoted by a letter from A to L (excluding I), N and S. These are described in 2.1.2.2 and 2.1.2.3.

2.1.2.2 Compatibility groups and classification codes

Description of substance or articles to be classified	Compatibility group	Classification code
Primary explosive substance	A	1.1A
Article containing a primary explosive substance and not containing two or more effective protective features. Some articles, such as detonators for blasting, detonator assemblies for blasting and primers, cap-type, are included even though they do not contain primary explosives	B	1.1B 1.2B 1.4B
Propellant explosive substance or other deflagrating explosive substance or article containing such explosive substance	C	1.1C 1.2C 1.3C 1.4C
Secondary detonating explosive substance or black powder or article containing a secondary detonating explosive substance, in each case without means of initiation and without a propelling charge, or article containing a primary explosive substance and containing two or more effective protective features	D	1.1D 1.2D 1.4D 1.5D
Article containing a secondary detonating explosive substance, without means of initiation, with a propelling charge (other than one containing a flammable liquid or gel or hypergolic liquids)	E	1.1E 1.2E 1.4E
Article containing a secondary detonating explosive substance with its own means of initiation, with a propelling charge (other than one containing a flammable liquid or gel or hypergolic liquids) or without a propelling charge	F	1.1F 1.2F 1.3F 1.4F
Pyrotechnic substance, or article containing a pyrotechnic substance, or article containing both an explosive substance and an illuminating, incendiary, tear- or smoke-producing substance (other than a water-activated article or one containing white phosphorus, phosphides, a pyrophoric substance, a flammable liquid or gel, or hypergolic liquids)	G	1.1G 1.2G 1.3G 1.4G
Article containing both an explosive substance and white phosphorus	H	1.2H 1.3H
Article containing both an explosive substance and a flammable liquid or gel	J	1.1J 1.2J 1.3J
Article containing both an explosive substance and a toxic chemical agent	K	1.2K 1.3K
Explosive substance or article containing an explosive substance and presenting a special risk (such as due to water-activation or presence of hypergolic liquids, phosphides or a pyrophoric substance) and needing isolation of each type (see 7.2.7.1.4, note 2)	L	1.1L 1.2L 1.3L
Articles predominantly containing extremely insensitive substances	N	1.6N
Substance or article so packaged or designed that any hazardous effects arising from accidental functioning are confined within the package unless the package has been degraded by fire, in which case all blast or projection effects are limited to the extent that they do not significantly hinder or prohibit fire fighting or other emergency response efforts in the immediate vicinity of the package	S	1.4S

Note 1: Articles of compatibility groups D and E may be fitted or packed together with their own means of initiation provided that such means have at least two effective protective features designed to prevent an explosion in the event of accidental functioning of the means of initiation. Such articles and packages shall be assigned to compatibility groups D or E.

Note 2: Articles of compatibility groups D and E may be packed together with their own means of initiation, which do not have two effective protective features when, in the opinion of the competent authority of the country of origin, the accidental functioning of the means of initiation does not cause the explosion of an article under normal conditions of transport. Such packages shall be assigned to compatibility groups D or E.

2.1.2.3 Scheme of classification of explosives, combination of hazard division with compatibility group

Hazard division	Compatibility group													Σ A-S
	A	B	C	D	E	F	G	H	J	K	L	N	S	
1.1	1.1A	1.1B	1.1C	1.1D	1.1E	1.1F	1.1G		1.1J		1.1L			9
1.2		1.2B	1.2C	1.2D	1.2E	1.2F	1.2G	1.2H	1.2J	1.2K	1.2L			10
1.3			1.3C			1.3F	1.3G	1.3H	1.3J	1.3K	1.3L			7
1.4		1.4B	1.4C	1.4D	1.4E	1.4F	1.4G						1.4S	7
1.5				1.5D										1
1.6												1.6N		1
Σ 1.1-1.6	1	3	4	4	3	4	4	2	3	2	3	1	1	35

2.1.2.4 The definitions of compatibility groups in 2.1.2.2 are intended to be mutually exclusive, except for a substance or article which qualifies for compatibility group S. Since the criterion of compatibility group S is an empirical one, assignment to this group is necessarily linked to the tests for assignment to division 1.4.

2.1.3 Classification procedure

2.1.3.1 Any substance or article having or suspected of having explosive characteristics shall be considered for classification in class 1. Substances and articles classified in class 1 shall be assigned to the appropriate division and compatibility group. Goods of class 1 shall be classified in accordance with the latest version of the Manual of Tests and Criteria.

2.1.3.2 Prior to transport, the classification of all explosive substances and articles, together with the compatibility group assignment and the proper shipping name under which the substance or article is to be transported, shall have been approved by the competent authority of the country of manufacture. A new approval would be required for:

- .1 a new explosive substance; or
- .2 a new combination or mixture of explosive substances which is significantly different from other combinations or mixtures previously manufactured and approved; or
- .3 a new design of an explosive article, an article containing a new explosive substance, or an article containing a new combination or mixture of explosive substances; or
- .4 an explosive substance or article with a new design or type of packaging, including a new type of inner packaging.

2.1.3.3 Assessment of the hazard division is usually made on the basis of test results. A substance or article shall be assigned to the hazard division which corresponds to the results of the tests to which the substance or article, as offered for transport, has been subjected. Other test results, and data assembled from accidents which have occurred, may also be taken into account.

2.1.3.4 Exclusion from class 1

2.1.3.4.1 The competent authority may exclude an article or substance from class 1 by virtue of test results and the class 1 definition.

2.1.3.4.2 An article may be excluded from class 1 by the competent authority when three unpackaged articles, each individually activated by its own means of initiation or ignition or external means to function in the designed mode, meet the following test criteria:

- .1 no external surface shall have a temperature of more than 65°C. A momentary spike in temperature up to 200°C is acceptable;
- .2 no rupture or fragmentation of the external casing or movement of the article or detached parts thereof of more than one metre in any direction;

Note: Where the integrity of the article may be affected in the event of an external fire these criteria shall be examined by a fire test, such as described in ISO 12097-3.

- .3 no audible report exceeding 135 dB(C) peak at a distance of one metre;
- .4 no flash or flame capable of igniting a material such as a sheet of 80 ± 10 g/m² paper in contact with the article; and

- .5 no production of smoke, fumes or dust in such quantities that the visibility in a one cubic metre chamber equipped with appropriately sized blow out panels is reduced more than 50% as measured by a calibrated light (lux) meter or radiometer located one metre from a constant light source located at the midpoint on opposite walls. The general guidance on Optical Density Testing in ISO 5659-1 and the general guidance on the Photometric System described in Section 7.5 in ISO 5659-2 may be used or similar optical density measurement methods designed to accomplish the same purpose may also be employed. A suitable hood cover surrounding the back and sides of the light meter shall be used to minimize effects of scattered or leaking light not emitted directly from the source.

Note 1: If during the tests addressing criteria .1, .2, .3 and .4 no or very little smoke is observed the test described in .5 may be waived.

Note 2: The competent authority may require testing in packaged form if it is determined that, as packaged for transport, the article may pose a greater risk.

2.1.3.5 Assignment of fireworks to hazard divisions

2.1.3.5.1 Fireworks shall normally be assigned to hazard divisions 1.1, 1.2, 1.3, and 1.4 on the basis of test data derived from Test Series 6 of the Manual of Tests and Criteria. However:

- .1 waterfalls giving a positive result when tested in the HSL Flash composition test in appendix 7 of the Manual of Tests and Criteria shall be classified as 1.1G regardless of the results of Test Series 6;
- .2 since the range of fireworks is very extensive and the availability of test facilities may be limited, assignment to hazard divisions may also be made in accordance with the procedure in 2.1.3.5.2.

2.1.3.5.2 Assignment of fireworks to UN Nos. 0333, 0334, 0335 or 0336 may be made on the basis of analogy, without the need for Test Series 6 testing, in accordance with the default fireworks classification table in 2.1.3.5.5. Such assignment shall be made with the agreement of the competent authority. Items not specified in the table shall be classified on the basis of test data derived from Test Series 6 of the Manual of Tests and Criteria.

Note: The addition of other types of fireworks to column 1 of the table in 2.1.3.5.5 shall only be made on the basis of full test data submitted to the UN Sub-Committee of Experts on the Transport of Dangerous Goods for consideration.

2.1.3.5.3 Where fireworks of more than one hazard division are packed in the same package they shall be classified on the basis of the highest hazard division unless test data derived from Test Series 6 of the Manual of Tests and Criteria indicate otherwise.

2.1.3.5.4 The classification shown in the table in 2.1.3.5.5 applies only for articles packed in fibreboard boxes (4G).

2.1.3.5.5 Default fireworks classification table*

Note 1: References to percentages in the table, unless otherwise stated, are to the mass of all pyrotechnic substances (e.g. rocket motors, lifting charge, bursting charge and effect charge).

Note 2: "Flash composition" in this table refers to pyrotechnic substances in powder form or as pyrotechnic units as presented in the fireworks that are used to produce an aural effect or used as a bursting charge, or propellant charge unless the time taken for the pressure rise is demonstrated to be more than 6 ms for 0.5 g of pyrotechnic substance in the HSL Flash Composition Test in appendix 7 of the Manual of Tests and Criteria.

Note 3: Dimensions in mm refers to:

- for spherical and peanut shells, the diameter of the sphere of the shell;
- for cylindrical shells, the length of the shell;
- for a shell in mortar, Roman candle, shot tube firework or mine, the inside diameter of the tube comprising or containing the firework;
- for a bag mine or cylinder mine, the inside diameter of the mortar intended to contain the mine.

* This table contains a list of firework classifications that may be used in the absence of Test Series 6, of the Manual of Tests and Criteria, data (see 2.1.3.5.2).

Type	Includes: / Synonym:	Definition	Specification	Classification
Shell, spherical or cylindrical	Spherical display shell: aerial shell, colour shell, dye shell, multi-break shell, multi-effect shell, nautical shell, parachute shell, smoke shell, star shell; report shell: maroon, salute, sound shell, thunderclap, aerial shell kit	Device with or without propellant charge, with delay fuse and bursting charge, pyrotechnic unit(s) or loose pyrotechnic substance and designed to be projected from a mortar	All report shells	1.1G
			Colour shell: ≥ 180 mm	1.1G
			Colour shell: < 180 mm with $> 25\%$ flash composition, as loose powder and/or report effects	1.1G
			Colour shell: < 180 mm with $\leq 25\%$ flash composition, as loose powder and/or report effects	1.3G
			Colour shell: ≤ 50 mm, or ≤ 60 g pyrotechnic substance, with $\leq 2\%$ flash composition as loose powder and/or report effects	1.4G
Peanut shell	Device with two or more spherical aerial shells in a common wrapper propelled by the same propellant charge with separate external delay fuses	The most hazardous spherical aerial shell determines the classification		
Preloaded mortar, shell in mortar	Assembly comprising a spherical or cylindrical shell inside a mortar from which the shell is designed to be projected		All report shells	
			Colour shell: ≥ 180 mm	1.1G
			Colour shell: $> 25\%$ flash composition as loose powder and/or report effects	1.1G
			Colour shell: > 50 mm and < 180 mm	1.2G
			Colour shell: ≤ 50 mm, or < 60 g pyrotechnic substance, with $\leq 25\%$ flash composition as loose powder and/or report effects	1.3G

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Type	Includes: / Synonym:	Definition	Specification	Classification
	Shell of shells (spherical) (Reference to percentages for shell of shells are to the gross mass of the fireworks article)	Device without propellant charge, with delay fuse and bursting charge, containing report shells and inert materials and designed to be projected from a mortar	> 120 mm	1.1G
		Device without propellant charge, with delay fuse and bursting charge, containing report shells \leq 25 g flash composition per report unit, with \leq 33% flash composition and \geq 60% inert materials and designed to be projected from a mortar	\leq 120 mm	1.3G
		Device without propellant charge, with delay fuse and bursting charge, containing colour shells and/or pyrotechnic units and designed to be projected from a mortar	> 300 mm	1.1G
		Device without propellant charge, with delay fuse and bursting charge, containing colour shells \leq 70 mm and/or pyrotechnic units, with \leq 25% flash composition and \leq 60% pyrotechnic substance and designed to be projected from a mortar	> 200 mm and \leq 300 mm	1.3G
		Device with propellant charge, with delay fuse and bursting charge, containing colour shells \leq 70 mm and/or pyrotechnic units, with \leq 25% flash composition and \leq 60% pyrotechnic substance and designed to be projected from a mortar	\leq 200 mm	1.3G
Battery/ combination	Barrage, bombardos, cakes, finale box, flowerbed, hybrid, multiple tubes, shell cakes, banger batteries, flash banger batteries	Assembly including several elements either containing the same type or several types each corresponding to one of the types of fireworks listed in this table, with one or two points of ignition	The most hazardous firework type determines the classification	
Roman candle	Exhibition candle, candle, bombettes	Tube containing a series of pyrotechnic units consisting of alternate pyrotechnic substance, propellant charge, and transmitting fuse	\geq 50 mm inner diameter, containing flash composition, or < 50 mm with > 25% flash composition \geq 50 mm inner diameter, containing no flash composition < 50 mm inner diameter and \leq 25% flash composition	1.1G 1.2G 1.3G
			\leq 30 mm inner diameter, each pyrotechnic unit \leq 25 g and \leq 5% flash composition	1.4G
Shot tube	Single shot Roman candle, small preloaded mortar	Tube containing a pyrotechnic unit consisting of pyrotechnic substance, propellant charge with or without transmitting fuse	\leq 30 mm inner diameter and pyrotechnic unit > 25 g, or > 5% and \leq 25% flash composition \leq 30 mm inner diameter, pyrotechnic unit \leq 25 g and \leq 5% flash composition	1.3G 1.4G

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Type	Includes: / Synonym:	Definition	Specification	Classification
Rocket	Avalanche rocket, signal rocket, whistling rocket, bottle rocket, sky rocket, missile type rocket, table rocket	Tube containing pyrotechnic substance and/or pyrotechnic units, equipped with stick(s) or other means for stabilization of flight, and designed to be propelled into the air	Flash composition effects only Flash composition > 25% of the pyrotechnic substance > 20 g pyrotechnic substance and flash composition ≤ 25 % ≤ 20 g pyrotechnic substance, black powder bursting charge and ≤ 0.13 g flash composition per report and ≤ 1 g in total	1.1G 1.1G 1.3G 1.4G
Mine	Pot-a-feu, ground mine, bag mine, cylinder mine	Tube containing propellant charge and pyrotechnic units and designed to be placed on the ground or to be fixed in the ground. The principal effect is ejection of all the pyrotechnic units in a single burst producing a widely dispersed visual and/or aural effect in the air or: Cloth or paper bag or cloth or paper cylinder containing propellant charge and pyrotechnic units, designed to be placed in a mortar and to function as a mine	> 25% flash composition, as loose powder and/or report effects ≥ 180 mm and ≤ 25% flash composition, as loose powder and/or report effects < 180 mm and ≤ 25% flash composition, as loose powder and/or report effects ≤ 150 g pyrotechnic substance, containing ≤ 5% flash composition as loose powder and/or report effects. Each pyrotechnic unit ≤ 25 g, each report effect < 2 g; each whistle, if any, ≤ 3 g ≥ 1 kg pyrotechnic substance < 1 kg pyrotechnic substance	1.1G 1.1G 1.3G 1.4G
Fountain	Volcanos, gerbs, lances, Bengal fire, flitter sparkle, cylindrical fountains, cone fountains, illuminating torch	Non-metallic case containing pressed or consolidated pyrotechnic substance producing sparks and flame Note: Fountains intended to produce a vertical cascade or curtain of sparks are considered to be waterfalls (see row below).	Containing a pyrotechnic substance which gives a positive result when tested in the HSL Flash composition test in appendix 7 of the Manual of Tests and Criteria regardless of the results of Test Series 6 (see 2.1.3.5.1.1)	1.3G 1.4G
Waterfall	Cascades, showers	Pyrotechnic fountain intended to produce a vertical cascade or curtain of sparks	Containing a pyrotechnic substance which gives a negative result when tested in the HSL Flash composition test in appendix 7 of the Manual of Tests and Criteria	1.1G 1.3G
Sparkler	Handheld sparklers, non-handheld sparklers, wire sparklers	Rigid wire partially coated (along one end) with slow-burning pyrotechnic substance with or without an ignition tip	Perchlorate based sparklers: > 5 g per item or > 10 items per pack Perchlorate based sparklers: ≤ 5 g per item and ≤ 10 items per pack Nitrate based sparklers: ≤ 30 g per item	1.3G 1.4G

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Type	Includes: / Synonym:	Definition	Specification	Classification
Bengal stick	Dipped stick	Non-metallic stick partially coated (along one end) with slow-burning pyrotechnic substance and designed to be held in the hand	Perchlorate based items: > 5 g per item or > 10 items per pack	1.3G
Low hazard fireworks and novelties	Table bombs, throwdowns, crackling granules, smokes, fog, snakes, glow worm, serpents, snaps, party poppers	Device designed to produce very limited visible and/or audible effect which contains small amounts of pyrotechnic and/or explosive substance	Perchlorate based items: ≤ 5 g per item and ≤ 10 items per pack; nitrate based items: ≤ 30 g per item Throwdowns and snaps may contain up to 1.6 mg of silver fulminate; snaps and party poppers may contain up to 16 mg of potassium chlorate/red phosphorus mixture; other articles may contain up to 5 g of pyrotechnic substance, but no flash composition	1.4G
Spinner	Aerial spinner, helicopter, chaser, ground spinner	Non-metallic tube or tubes containing gas- or spark-producing pyrotechnic substance, with or without noise-producing substance, with or without aerofoils attached	Pyrotechnic substance per item > 20 g, containing ≤ 3% flash composition as report effects, or whistle composition ≤ 5 g	1.3G
Wheels	Catherine wheels, Saxon	Assembly including drivers containing pyrotechnic substance and provided with a means of attaching it to a support so that it can rotate	Pyrotechnic substance per item ≤ 20 g, containing ≤ 3% flash composition as report effects, or whistle composition ≤ 5 g	1.4G
Aerial wheel	Flying Saxon, UFOs, rising crown	Tubes containing propellant charges and sparks-, flame- and/or noise-producing pyrotechnic substances, the tubes being fixed to a supporting ring	≥ 1 kg total pyrotechnic substance, no report effect, each whistle (if any) ≤ 25 g and ≤ 50 g whistle composition per wheel < 1 kg total pyrotechnic substance, no report effect, each whistle (if any) ≤ 5 g and ≤ 10 g whistle composition per wheel	1.3G
Selection pack	Display selection box, display selection pack, garden selection box, indoor selection box; assortment	A pack of more than one type each corresponding to one of the types of fireworks listed in this table	> 200 g total pyrotechnic substance or > 60 g pyrotechnic substance per driver, ≤ 3% flash composition as report effects, each whistle (if any) ≤ 25 g and ≤ 50 g whistle composition per wheel	1.3G
Firecracker	Celebration cracker, celebration roll, string cracker	Assembly of tubes (paper or cardboard) linked by a pyrotechnic fuse, each tube intended to produce an aural effect	≤ 200 g total pyrotechnic substance and ≤ 60 g pyrotechnic substance per driver, ≤ 3% flash composition as report effects, each whistle (if any) ≤ 5 g and ≤ 10 g whistle composition per wheel The most hazardous firework type determines the classification	1.4G
			Each tube ≤ 140 mg of flash composition or ≤ 1 g black powder	1.4G

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Type	Includes: / Synonym:	Definition	Specification	Classification
Banger	Salute, flash banger, lady cracker	Non-metallic tube containing report composition intended to produce an aural effect	> 2 g flash composition per item ≤ 2 g flash composition per item and ≤ 10 g per inner packaging ≤ 1 g flash composition per item and ≤ 10 g per inner packaging or ≤ 10 g black powder per item	1.1G 1.3G 1.4G

2.1.3.6 Classification documentation

2.1.3.6.1 A competent authority assigning an article or substance into class 1 should confirm with the applicant that classification in writing.

2.1.3.6.2 A competent authority classification document may be in any form and may consist of more than one page, provided pages are numbered consecutively. The document should have a unique reference.

2.1.3.6.3 The information provided shall be easy to identify, legible and durable.

2.1.3.6.4 Examples of the information that may be provided in the classification documents are as follows:

- .1 the name of the competent authority and the provisions in national legislation under which it is granted its authority;
- .2 the modal or national regulations for which the classification document is applicable;
- .3 confirmation that the classification has been approved, made or agreed in accordance with the United Nations Recommendations on the Transport of Dangerous Goods or the relevant modal regulations;
- .4 the name and address of the person in law to which the classification has been assigned and any company registration which uniquely identifies a company or other body corporate under national legislation;
- .5 the name under which the explosives will be placed on the market or otherwise supplied for transport;
- .6 the Proper Shipping Name, UN number, Class, Hazard Division and corresponding compatibility group of the explosives;
- .7 where appropriate, the maximum net explosive mass of the package or article;
- .8 the name, signature, stamp, seal or other identification of the person authorized by the competent authority to issue the classification document is clearly visible;
- .9 where safety in transport or the hazard division is assessed as being dependent upon the packaging, the packaging mark or a description of the permitted:
 - inner packagings
 - intermediate packagings
 - outer packagings
- .10 the classification document states the part number, stock number or other identifying reference under which the explosives will be placed onto the market or otherwise supplied for transport;
- .11 the name and address of the person in law who manufactured the explosives and any company registration which uniquely identifies a company or other body corporate under national legislation;
- .12 any additional information regarding the applicable packing instruction and special packing provisions where appropriate;
- .13 the basis for assigning the classification, i.e. whether on the basis of test results, default for fireworks, analogy with classified explosive, by definition from the Dangerous Goods List etc.;
- .14 any special conditions or limitations that the competent authority has identified as relevant to the safety for transport of the explosives, the communication of the hazard and international transport; and
- .15 the expiry date of the classification document is given where the competent authority considers one to be appropriate.

Chapter 2.2

Class 2 – Gases

2.2.0 Introductory note

“Toxic” has the same meaning as “poisonous”.

2.2.1 Definitions and general provisions

2.2.1.1 A gas is a substance which:

- .1 at 50°C has a vapour pressure greater than 300 kPa; or
- .2 is completely gaseous at 20°C at a standard pressure of 101.3 kPa.

2.2.1.2 The transport condition of a gas is described according to its physical state as:

- .1 *compressed gas*: a gas which when packaged under pressure for transport is entirely gaseous at –50°C; this category includes all gases with a critical temperature less than or equal to –50°C;
- .2 *liquefied gas*: a gas which when packaged under pressure for transport is partially liquid at temperatures above –50 °C. A distinction is made between:
 - high pressure liquefied gas*: a gas with a critical temperature between –50°C and +65°C, and
 - low pressure liquefied gas*: a gas with a critical temperature above +65°C;
- .3 *refrigerated liquefied gas*: a gas which when packaged for transport is made partially liquid because of its low temperature; or
- .4 *dissolved gas*: a gas which when packaged under pressure for transport is dissolved in a liquid phase solvent;
- .5 *adsorbed gas*: a gas which when packaged for transport is adsorbed onto a solid porous material resulting in an internal receptacle pressure of less than 101.3 kPa at 20°C and less than 300 kPa at 50°C.

2.2.1.3 The class comprises compressed gases, liquefied gases, dissolved gases, refrigerated liquefied gases, adsorbed gases, mixtures of one or more gases with one or more vapours of substances of other classes, articles charged with a gas and aerosols.

2.2.1.4 Gases are normally transported under pressure varying from high pressure in the case of compressed gases to low pressure in the case of refrigerated gases.

2.2.1.5 According to their chemical properties or physiological effects, which may vary widely, gases may be: flammable; non-flammable; non-toxic; toxic; supporters of combustion; corrosive; or may possess two or more of these properties simultaneously.

2.2.1.5.1 Some gases are chemically and physiologically inert. Such gases as well as other gases, normally accepted as non-toxic, will nevertheless be suffocating in high concentrations.

2.2.1.5.2 Many gases of this class have narcotic effects which may occur at comparatively low concentrations or may evolve highly toxic gases when involved in a fire.

2.2.1.5.3 All gases which are heavier than air will present a potential danger if allowed to accumulate in the bottom of cargo spaces.

2.2.2 Class subdivisions

Class 2 is subdivided further according to the primary hazard of the gas during transport:

Note: For UN 1950 AEROSOLS, see also the criteria in special provision 63 and for UN 2037 RECEPTACLES, SMALL, CONTAINING GAS (GAS CARTRIDGES) see also special provision 303.

2.2.2.1 Class 2.1 Flammable gases

Gases which at 20°C and a standard pressure of 101.3 kPa:

- .1 are ignitable when in a mixture of 13% or less by volume with air; or
- .2 have a flammable range with air of at least 12 percentage points regardless of the lower flammable limit. Flammability shall be determined by tests or calculation in accordance with methods adopted by the International Organization for Standardization (see ISO 10156:2010). Where insufficient data are available to use these methods, tests by a comparable method recognized by a national competent authority may be used.

2.2.2.2 Class 2.2 Non-flammable, non-toxic gases

Gases which:

- .1 are asphyxiant – gases which dilute or replace the oxygen normally in the atmosphere; or
- .2 are oxidizing – gases which may, generally by providing oxygen, cause or contribute to the combustion of other material more than air does; or
- .3 do not come under the other classes.

Note: In 2.2.2.2.2, “gases which cause or contribute to the combustion of other material more than air does” means pure gases or gas mixtures with an oxidizing power greater than 23.5% as determined by a method specified in ISO 10156:2010.

2.2.2.3 Class 2.3 Toxic gases

Gases which:

- .1 are known to be so toxic or corrosive to humans as to pose a hazard to health; or
- .2 are presumed to be toxic or corrosive to humans because they have a LC₅₀ value (as defined in 2.6.2.1) equal to or less than 5,000 mL/m³ (ppm).

Note: Gases meeting the above criteria owing to their corrosivity are to be classified as toxic with a subsidiary corrosive risk.

2.2.2.4 Gases and gas mixtures with hazards associated with more than one division take the following precedence:

- .1 class 2.3 takes precedence over all other classes;
- .2 class 2.1 takes precedence over class 2.2.

2.2.2.5 Gases of class 2.2 are not subject to the provisions of this Code if they are transported at a pressure of less than 200 kPa at 20°C and are not liquefied or refrigerated liquefied gases.

2.2.2.6 Gases of class 2.2 are not subject to the provisions of this Code when contained in the following:

- .1 foodstuffs (except UN 1950), including carbonated beverages;
- .2 balls intended for use in sports; or
- .3 tyres (except for air transport).

Note: This exemption does not apply to lamps. For lamps see 1.1.1.9.

2.2.3 Mixtures of gases

For the classification of gas mixtures (including vapours of substances from other classes), the following principles shall be used:

- .1 Flammability shall be determined by tests or calculation in accordance with methods adopted by the International Organization for Standardization (see ISO 10156:2010). Where insufficient data are available to use these methods, tests by a comparable method recognized by a national competent authority may be used.
- .2 The level of toxicity is determined either by tests to measure the LC₅₀ value (as defined in 2.6.2.1) or by a calculation method using the following formula:

$$LC_{50} \text{ Toxic (mixture)} = \frac{1}{\sum_{i=1}^n \frac{f_i}{T_i}}$$

where: f_i = mole fraction of the i^{th} component substance of the mixture;

T_i = toxicity index of the i^{th} component substance of the mixture (the T_i equals the LC₅₀ value when available).

When LC₅₀ values are unknown, the toxicity index is determined by using the lowest LC₅₀ value of substances of similar physiological and chemical effects, or through testing if this is the only practical possibility.

- .3 A gas mixture has a subsidiary risk of corrosivity when the mixture is known by human experience to be destructive to the skin, eyes or mucous membranes or when the LC₅₀ value of the corrosive components of the mixture is equal to or less than 5,000 mL/m³ (ppm) when the LC₅₀ is calculated by the formula:

$$LC_{50} \text{ Corrosive (mixture)} = \frac{1}{\sum_{i=1}^n \frac{f_{ci}}{T_{ci}}}$$

where: f_{ci} = mole fraction of the i^{th} corrosive component substance of the mixture;

T_{ci} = toxicity index of the i^{th} corrosive component substance of the mixture (the T_{ci} equals the LC₅₀ value when available).

- .4 Oxidizing ability is determined either by tests or by calculation methods adopted by the International Organization for Standardization (see note in 2.2.2.2).

2.2.4 Gases not accepted for transport

Chemically unstable gases of class 2 shall not be accepted for transport unless the necessary precautions have been taken to prevent the possibility of a dangerous decomposition or polymerization under normal conditions of transport or unless transported in accordance with special packing provision (r) of packing instruction P200 (5) of 4.1.4.1, as applicable. For the precautions necessary to prevent polymerization, see special provision 386 of chapter 3.3. To this end particular care shall be taken to ensure that receptacles and tanks do not contain any substances liable to promote these reactions.

Chapter 2.3

Class 3 – Flammable liquids

2.3.0 Introductory note

The flashpoint of a flammable liquid may be altered by the presence of an impurity. The substances listed in class 3 in the Dangerous Goods List in chapter 3.2 shall generally be regarded as chemically pure. Since commercial products may contain added substances or impurities, flashpoints may vary, and this may have an effect on classification or determination of the packing group for the product. In the event of doubt regarding the classification or packing group of a substance, the flashpoint of the substance shall be determined experimentally.

2.3.1 Definitions and general provisions

2.3.1.1 Class 3 includes the following substances:

- .1 flammable liquids (see 2.3.1.2 and 2.3.1.3);
- .2 liquid desensitized explosives (see 2.3.1.4).

2.3.1.2 *Flammable liquids* are liquids, or mixtures of liquids, or liquids containing solids in solution or suspension (such as paints, varnishes, lacquers, etc., but not including substances which, on account of their other dangerous characteristics, have been included in other classes) which give off a flammable vapour at or below 60°C closed-cup test (corresponding to 65.6°C open-cup test), normally referred to as the “flashpoint”. This also includes:

- .1 liquids offered for transport at temperatures at or above their flashpoint; and
- .2 substances transported or offered for transport at elevated temperatures in a liquid state, which give off a flammable vapour at temperatures equal to or below the maximum transport temperature.

2.3.1.3 However, the provisions of this Code need not apply to such liquids with a flashpoint of more than 35°C which do not sustain combustion. Liquids are considered to be unable to sustain combustion for the purposes of the Code if:

- .1 they have passed the suitable combustibility test (see the Sustained Combustibility Test prescribed in part III, 32.5.2 of the Manual of Tests and Criteria); or
- .2 their fire point according to ISO 2592:1973 is greater than 100°C; or
- .3 they are water-miscible solutions with a water content of more than 90%, by mass.

2.3.1.4 *Liquid desensitized explosives* are explosive substances which are dissolved or suspended in water or other liquid substances, to form a homogeneous liquid mixture to suppress their explosive properties. Entries in the Dangerous Goods List for liquid desensitized explosives are UN 1204, UN 2059, UN 3064, UN 3343, UN 3357 and UN 3379.

2.3.2 Assignment of packing group

2.3.2.1 The criteria in 2.3.2.6 are used to determine the hazard grouping of a liquid that presents a risk due to flammability.

2.3.2.1.1 For liquids whose only risk is flammability, the packing group for the substance is the hazard grouping shown in 2.3.2.6.

2.3.2.1.2 For a liquid with additional risk(s), the hazard group determined from 2.3.2.6 and the hazard group based on the severity of the additional risk(s) shall be considered, and the classification and packing group determined in accordance with the provisions in chapter 2.0.

2.3.2.2 Viscous flammable liquids such as paints, enamels, lacquers, varnishes, adhesives and polishes having a flashpoint of less than 23°C may be placed in packing group III in conformity with the procedures prescribed in the Manual of Tests and Criteria, part III, subsection 32.3, provided that:

.1 The viscosity and flashpoint are in accordance with the following table:

Kinematic viscosity (extrapolated) ν (at near-zero shear rate) mm ² /s at 23°C	Flow-time t in seconds	Jet diameter (mm)	Flashpoint (closed-cup) in °C
20 < ν ≤ 80	20 < t ≤ 60	4	above 17
80 < ν ≤ 135	60 < t ≤ 100	4	above 10
135 < ν ≤ 220	20 < t ≤ 32	6	above 5
220 < ν ≤ 300	32 < t ≤ 44	6	above -1
300 < ν ≤ 700	44 < t ≤ 100	6	above -5
700 < t	100 < t	6	no limit

.2 less than 3% of the clear solvent layer separates in the solvent separation test;

.3 the mixture or any separated solvent does not meet the criteria for class 6.1 or class 8;

.4 the substances are packed in receptacles of not more than 30-litre capacity.

2.3.2.3 [Reserved]

2.3.2.4 Substances classified as flammable liquids due to their being transported or offered for transport at elevated temperatures are included in packing group III.

2.3.2.5 Viscous liquids which:

- have a flashpoint of 23°C or above and less than or equal to 60°C;
- are not toxic or corrosive;
- are not environmentally hazardous or are environmentally hazardous transported in single or combination packagings containing a net quantity per single or inner packaging of 5 litres or less, provided the packagings meet the general provisions of 4.1.1.1, 4.1.1.2 and 4.1.1.4 to 4.1.1.8;
- contain not more than 20% nitrocellulose, provided the nitrocellulose contains not more than 12.6% nitrogen by dry mass; and
- are packed in receptacles of not more than 30-litre capacity

are not subject to the provisions for the marking, labelling and testing of packages in chapters 4.1, 5.2 and 6.1, if:

.1 in the solvent separation test (see part III, 32.5.1 of the Manual of Tests and Criteria) the height of the separated layer of solvent is less than 3% of the total height; and

.2 the flowtime in the viscosity test (see part III, 32.4.3 of the Manual of Tests and Criteria) with a jet diameter of 6 mm is equal to or greater than:

.1 60 s; or

.2 40 s if the viscous liquids contains not more than 60% of class 3 substances.

The following statement shall be included in the transport document: "Transport in accordance with 2.3.2.5 of the IMDG Code." (see 5.4.1.5.10).

2.3.2.6 Hazard grouping based on flammability

Flammable liquids are grouped for packing purposes according to their flashpoint, their boiling point, and their viscosity. This table shows the relationship between two of these characteristics.

Packing group	Flashpoint (closed-cup) in °C	Initial boiling point in °C
I	-	≤ 35
II	< 23	> 35
III	≥ 23 to ≤ 60	> 35

2.3.3 Determination of flashpoint

Note: The provisions of this section are not mandatory.

2.3.3.1 The flashpoint of a flammable liquid is the lowest temperature of the liquid at which its vapour forms an ignitable mixture with air. It gives a measure of the risk of formation of explosive or ignitable mixtures when the liquid escapes from its packing. A flammable liquid cannot be ignited so long as its temperature remains below the flashpoint.

Note: Do not confuse the flashpoint with the ignition temperature, which is the temperature to which an explosive vapour-air mixture must be heated to cause actual explosion. There is no relationship between the flashpoint and the ignition temperature.

2.3.3.2 The flashpoint is not an exact physical constant for a given liquid. It depends to some extent on the construction of the test apparatus used and on the testing procedure. Therefore, when providing flashpoint data, specify the name of the test apparatus.

2.3.3.3 Several standard apparatuses are in current use. They all operate on the same principle: a specified quantity of the liquid is introduced into a receptacle at a temperature well below the flashpoint to be expected, then slowly heated; periodically, a small flame is brought near to the surface of the liquid. The flashpoint is the lowest temperature at which a "flash" is observed.

2.3.3.4 The test methods can be divided into two groups, depending on the use in an apparatus of an open receptacle (open-cup methods) or a closed one which is only opened to admit the flame (closed-cup methods). As a rule, the flashpoints found in an open-cup test are a few degrees higher than in a closed-cup test.

2.3.3.5 In general, reproducibility in closed-cup apparatus is better than in open-cup.

2.3.3.5.1 It is therefore recommended that flashpoints, especially in the range around 23°C, shall be determined by means of closed-cup (c.c) methods.

2.3.3.5.2 Flashpoint data in this Code are generally based on closed-cup methods. In countries where it is customary to determine flashpoints by the open-cup method, the temperatures given by that method would need to be reduced to correspond with those in this Code.

2.3.3.6 Determination of flashpoint

The following methods for determining the flashpoint of flammable liquids may be used:

International standards:

ISO 1516
ISO 1523
ISO 2719
ISO 13736
ISO 3679
ISO 3680

National standards:

American Society for Testing Materials International, 100 Barr Harbor Drive, PO Box C700,
West Conshohocken, Pennsylvania, USA 19428-2959:

ASTM D3828-07a, Standard Test Methods for Flash Point by Small Scale Closed Cup Tester
ASTM D56-05, Standard Test Method for Flash Point by Tag Closed Cup Tester
ASTM D3278-96(2004)e, Standard Test Methods for Flash Point of Liquids by Small Scale Closed-Cup
Apparatus
ASTM D93-08, Standard Test Methods for Flash Point by Pensky-Martens Closed Cup Tester

Association française de normalisation, AFNOR, 11, rue Francis de Pressensé, 93571 La Plaine Saint-Denis
Cedex:

French Standard NF M 07-019
French Standards NF M 07-011/NF T 30-050/NF T 66-009
French Standard NF M 07-036

Deutsches Institut für Normung, Burggrafenstr. 6, D-10787 Berlin:

Standard DIN 51755 (flashpoints below 65°C)

State Committee of the Council of Ministers for Standardization, 113813, GSP, Moscow,
M-49 Leninsky Prospect, 9:

GOST 12.1.044-84

2.3.4 Determination of initial boiling point

The following methods for determining the initial boiling point of flammable liquids may be used:

International standards:

ISO 3924
ISO 4626
ISO 3405

National standards:

American Society for Testing Materials International, 100 Barr Harbor Drive, PO Box C700,
West Conshohocken, Pennsylvania, USA 19428-2959:

ASTM D86-07a, Standard Test Method for Distillation of Petroleum Products at Atmospheric Pressure
ASTM D1078-05, Standard Test Method for Distillation Range of Volatile Organic Liquids

Further acceptable methods:

Method A.2 as described in Part A of the Annex to Commission Regulation (EC) No 440/2008.

2.3.5 Substances not accepted for transport

Chemically unstable substances of class 3 shall not be accepted for transport unless the necessary precautions have been taken to prevent the possibility of a dangerous decomposition or polymerization under normal conditions of transport. For the precautions necessary to prevent polymerization, see special provision 386 of chapter 3.3. To this end particular care shall be taken to ensure that receptacles and tanks do not contain any substances liable to promote these reactions.

Chapter 2.4

Class 4 – Flammable solids; substances liable to spontaneous combustion; substances which, in contact with water, emit flammable gases

2.4.0 Introductory note

Since organometallic substances can be classified in classes 4.2 or 4.3 with additional subsidiary risks, depending on their properties, a specific classification flowchart for these substances is given in 2.4.5.

2.4.1 Definition and general provisions

2.4.1.1 In this Code, class 4 deals with substances, other than those classified as explosives, which, under conditions of transport, are readily combustible or may cause or contribute to a fire. Class 4 is subdivided as follows:

Class 4.1 – Flammable solids

Solids which, under conditions encountered in transport, are readily combustible or may cause or contribute to fire through friction; self-reactive substances (solids and liquids) and polymerizing substances which are liable to undergo a strongly exothermic reaction; solid desensitized explosives which may explode if not diluted sufficiently;

Class 4.2 – Substances liable to spontaneous combustion

Substances (solids and liquids) which are liable to spontaneous heating under normal conditions encountered in transport, or to heating up in contact with air, and being then liable to catch fire;

Class 4.3 – Substances which, in contact with water, emit flammable gases

Substances (solids and liquids) which, by interaction with water, are liable to become spontaneously flammable or to give off flammable gases in dangerous quantities.

2.4.1.2 As referenced in this chapter, test methods and criteria, with advice on application of the tests, are given in the Manual of Tests and Criteria for the classification of following types of substances of class 4:

- .1 flammable solids (class 4.1);
- .2 self-reactive substances (class 4.1);
- .3 polymerizing substances (class 4.1);
- .4 pyrophoric solids (class 4.2);
- .5 pyrophoric liquids (class 4.2);
- .6 self-heating substances (class 4.2); and
- .7 substances which, in contact with water, emit flammable gases (class 4.3).

Test methods and criteria for self-reactive substances and polymerizing substances are given in part II of the Manual of Tests and Criteria, and test methods and criteria for the other types of substances of class 4 are given in the Manual of Tests and Criteria, part III, chapter 33.

2.4.2 Class 4.1 – Flammable solids, self-reactive substances, solid desensitized explosives and polymerizing substances

2.4.2.1 General

Class 4.1 includes the following types of substances:

- .1 flammable solids (see 2.4.2.2);

- .2 self-reactive substances (see 2.4.2.3);
- .3 solid desensitized explosives (see 2.4.2.4); and
- .4 polymerizing substances (see 2.4.2.5).

Some substances (such as celluloid) may evolve toxic and flammable gases when heated or if involved in a fire.

2.4.2.2 Class 4.1 Flammable solids

2.4.2.2.1 Definitions and properties

2.4.2.2.1.1 For the purpose of this Code, *flammable solids* means readily combustible solids and solids which may cause fire through friction.

2.4.2.2.1.2 *Readily combustible solids* means fibres, powdered, granular, or pasty substances which are dangerous if they can be easily ignited by brief contact with an ignition source such as a burning match, and if the flame spreads rapidly. The danger may come not only from the fire but also from toxic combustion products. Metal powders are especially dangerous because of the difficulty of extinguishing a fire, since normal extinguishing agents such as carbon dioxide or water can increase the hazard.

2.4.2.2.2 Classification of flammable solids

2.4.2.2.2.1 Powdered, granular or pasty substances shall be classified as readily combustible solids of class 4.1 when the time of burning of one or more of the test runs, performed in accordance with the test method described in the Manual of Tests and Criteria, part III, 33.2.1, is less than 45 s or the rate of burning is more than 2.2 mm/s. Powders of metals or metal alloys shall be classified in class 4.1 when they can be ignited and the reaction spreads over the whole length of the sample in 10 min or less.

2.4.2.2.2.2 Solids which may cause fire through friction shall be classified in class 4.1 by analogy with existing entries (such as matches) until definitive criteria are established.

2.4.2.2.3 Assignment of packing groups

2.4.2.2.3.1 Packing groups are assigned on the basis of the test methods referred to in 2.4.2.2.2.1. For readily combustible solids (other than metal powders), packing group II shall be assigned if the burning time is less than 45 s and the flame passes the wetted zone. Packing group II shall be assigned to powders of metal or metal alloys if the zone of reaction spreads over the whole length of the sample in five minutes or less.

2.4.2.2.3.2 Packing groups are assigned on the basis of the test methods referred to in 2.4.2.2.2.1. For readily combustible solids (other than metal powders), packing group III shall be assigned if the burning time is less than 45 s and the wetted zone stops the flame propagation for at least four minutes. Packing group III shall be assigned to metal powders if the reaction spreads over the whole length of the sample in more than five minutes but not more than 10 min.

2.4.2.2.3.3 For solids which may cause fire through friction, the packing group shall be assigned by analogy with existing entries or in accordance with any appropriate special provision.

2.4.2.2.4 Pyrophoric metal powders, if wetted with sufficient water to suppress their pyrophoric properties, may be classified as class 4.1.

2.4.2.3 Class 4.1 Self-reactive substances

2.4.2.3.1 Definitions and properties

2.4.2.3.1.1 For the purposes of this Code:

Self-reactive substances are thermally unstable substances liable to undergo a strongly exothermic decomposition even without participation of oxygen (air). Substances are not considered to be self-reactive substances of class 4.1, if:

- .1 they are explosives according to the criteria of class 1;
- .2 they are oxidizing substances according to the classification procedure for class 5.1 (see 2.5.2) except that mixtures of oxidizing substances which contain 5.0% or more of combustible organic substances shall be subjected to the classification procedure defined in note 3;
- .3 they are organic peroxides according to the criteria of class 5.2;
- .4 their heat of decomposition is less than 300 J/g; or
- .5 their self-accelerating decomposition temperature (SADT) (see 2.4.2.3.4) is greater than 75°C for a 50 kg package.

Note 1: The heat of decomposition may be determined using any internationally recognized method such as differential scanning calorimetry and adiabatic calorimetry.

Note 2: Any substance which shows the properties of a self-reactive substance shall be classified as such, even if this substance gives a positive test result according to 2.4.3.2 for inclusion in class 4.2.

Note 3: Mixtures of oxidizing substances meeting the criteria of class 5.1 which contain 5.0% or more of combustible organic substances, which do not meet the criteria mentioned in .1, .3, .4 or .5 above, shall be subjected to the self-reactive substance classification procedure.

A mixture showing the properties of a self-reactive substance, types B to F, shall be classified as a self-reactive substance of class 4.1.

A mixture showing the properties of a self-reactive substance, type G, according to the principle of 2.4.2.3.3.2.7 shall be considered for classification as a substance of class 5.1 (see 2.5.2).

2.4.2.3.1.2 The decomposition of self-reactive substances can be initiated by heat, contact with catalytic impurities (such as acids, heavy-metal compounds, bases), friction or impact. The rate of decomposition increases with temperature and varies with the substance. Decomposition, particularly if no ignition occurs, may result in the evolution of toxic gases or vapours. For certain self-reactive substances, the temperature shall be controlled. Some self-reactive substances may decompose explosively, particularly if confined. This characteristic may be modified by the addition of diluents or by the use of appropriate packagings. Some self-reactive substances burn vigorously. Self-reactive substances are, for example, some compounds of the types listed below:

- .1 aliphatic azo compounds (–C–N=N–C–);
- .2 organic azides (–C–N₃);
- .3 diazonium salts (–CN₂⁺ Z[–]);
- .4 N-nitroso compounds (–N–N=O); and
- .5 aromatic sulphohydrazides (–SO₂–NH–NH₂).

This list is not exhaustive and substances with other reactive groups and some mixtures of substances may have similar properties.

2.4.2.3.2 *Classification of self-reactive substances*

2.4.2.3.2.1 Self-reactive substances are classified into seven types according to the degree of danger they present. The types of self-reactive substance range from type A, which may not be accepted for transport in the packaging in which it is tested, to type G, which is not subject to the provisions for self-reactive substances of class 4.1. The classification of types B to F is directly related to the maximum quantity allowed in one packaging.

2.4.2.3.2.2 Self-reactive substances permitted for transport in packagings are listed in 2.4.2.3.2.3, those permitted for transport in IBCs are listed in packing instruction IBC520 and those permitted for transport in portable tanks are listed in portable tank instruction T23. For each permitted substance listed, the appropriate generic entry of the Dangerous Goods List (UN 3221 to UN 3240) is assigned, and appropriate subsidiary risks and remarks providing relevant transport information are given. The generic entries specify:

- .1 self-reactive substance type (B to F);
- .2 physical state (liquid or solid); and
- .3 temperature control, when required (2.4.2.3.4).

2.4.2.3.2.3 *List of currently assigned self-reactive substances in packagings*

In the column “Packing Method” codes “OP1” to “OP8” refer to packing methods in packing instruction P520. Self-reactive substances to be transported shall fulfil the classification and the control and emergency temperatures (derived from the SADT) as listed. For substances permitted in IBCs, see packing instruction IBC520, and for those permitted in tanks, see portable tank instruction T23.

Note: The classification given in this table is based on the technically pure substance (except where a concentration of less than 100% is specified). For other concentrations, the substances may be classified differently following the procedures in 2.4.2.3.3 and 2.4.2.3.4.

UN generic entry	Self-reactive substance	Concentration (%)	Packing method	Control temperature (°C)	Emergency temperature (°C)	Remarks
3222	2-DIAZO-1-NAPHTHOL-4-SULPHONYL CHLORIDE	100	OP5			(2)
	2-DIAZO-1-NAPHTHOL-5-SULPHONYL CHLORIDE	100	OP5			(2)
3223	SELF-REACTIVE LIQUID, SAMPLE		OP2			(8)

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UN generic entry	Self-reactive substance	Concentration (%)	Packing method	Control temperature (°C)	Emergency temperature (°C)	Remarks
3224	AZODICARBONAMIDE FORMULATION TYPE C	< 100	OP6			(3)
	2,2'-AZODI(ISOBUTYRONITRILE) as a water-based paste	≤ 50	OP6			
	N,N'-DINITROSO-N,N'-DIMETHYL-TEREPHTHALAMIDE, as a paste	72	OP6			
	N,N'-DINITROSOPENTAMETHYLENETETRAMINE	82	OP6			(7)
	SELF-REACTIVE SOLID, SAMPLE		OP2			(8)
3226	AZODICARBONAMIDE FORMULATION TYPE D	< 100	OP7			(5)
	1,1'-AZODI(HEXAHYDROBENZONITRILE)	100	OP7			
	BENZENE-1,3-DISULPHONYL HYDRAZIDE as a paste	52	OP7			
	BENZENESULPHONYL HYDRAZIDE	100	OP7			
	4-(BENZYL(ETHYL)AMINO)-3-ETHOXY-BENZENEDIAZONIUM ZINC CHLORIDE	100	OP7			
	3-CHLORO-4-DIETHYLAMINOBENZENE-DIAZONIUM ZINC CHLORIDE	100	OP7			
	2-DIAZO-1-NAPHTHOLSULPHONIC ACID ESTER MIXTURE TYPE D	< 100	OP7			(9)
	2,5-DIETHOXY-4-(4-MORPHOLINYL)-BENZENEDIAZONIUM SULPHATE	100	OP7			
	DIPHENYLOXIDE-4,4'-DISULPHONYL HYDRAZIDE	100	OP7			
	4-DIPROPYLAMINOBENZENEDIAZONIUM ZINC CHLORIDE	100	OP7			
	4-METHYLBENZENESULPHONYLHYDRAZIDE	100	OP7			
	SODIUM 2-DIAZO-1-NAPHTHOL-4-SULPHONATE	100	OP7			
SODIUM 2-DIAZO-1-NAPHTHOL-5-SULPHONATE	100	OP7				
3228	ACETONE-PYROGALLOL COPOLYMER	100	OP8			
	2-DIAZO-1-NAPHTHOL-5-SULPHONATE					
	4-(DIMETHYLAMINO)BENZENEDIAZONIUM TRICHLOROZINCATE(-1)	100	OP8			
3232	2,5-DIBUTOXY-4-(4-MORPHOLINYL)-BENZENEDIAZONIUM TETRACHLOROZINCATE(2:1)	100	OP8			
3232	AZODICARBONAMIDE FORMULATION TYPE B, TEMPERATURE CONTROLLED	< 100	OP5			(1) (2)
3233	SELF-REACTIVE LIQUID, SAMPLE, TEMPERATURE CONTROLLED		OP2			(8)
3234	AZODICARBONAMIDE FORMULATION TYPE C, TEMPERATURE CONTROLLED	< 100	OP6			(4)
	2,2'-AZODI(ISOBUTYRONITRILE)	100	OP6	+40	+45	
	3-METHYL-4-(PYRROLIDIN-1-YL)BENZENE-DIAZONIUM TETRAFLUOROBORATE	95	OP6	+45	+50	
	SELF-REACTIVE SOLID, SAMPLE, TEMPERATURE CONTROLLED		OP2			(8)
3235	TETRAMINEPALLADIUM(II) NITRATE	100	OP6	+30	+35	
	2,2'-AZODI(ETHYL-2-METHYLPROPIONATE)	100	OP7	+20	+25	

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UN generic entry	Self-reactive substance	Concentration (%)	Packing method	Control temperature (°C)	Emergency temperature (°C)	Remarks
3236	AZODICARBONAMIDE FORMULATION TYPE D, TEMPERATURE CONTROLLED	< 100	OP7			(6)
	2,2'-AZODI(2,4-DIMETHYL-4-METHOXY-VALERONITRILE)	100	OP7	-5	+5	
	2,2'-AZODI(2,4-DIMETHYLVALERONITRILE)	100	OP7	+10	+15	
	2,2'-AZODI(2-METHYLBUTYRONITRILE)	100	OP7	+35	+40	
	4-(BENZYL(METHYL)AMINO)-3-ETHOXY-BENZENEDIAZONIUM ZINC CHLORIDE	100	OP7	+40	+45	
	2,5-DIETHOXY-4-MORPHOLINO-BENZENEDIAZONIUM ZINC CHLORIDE	67-100	OP7	+35	+40	
	2,5-DIETHOXY-4-MORPHOLINO-BENZENEDIAZONIUM ZINC CHLORIDE	66	OP7	+40	+45	
	2,5-DIETHOXY-4-MORPHOLINOBENZENE-DIAZONIUM TETRAFLUOROBORATE	100	OP7	+30	+35	
	2,5-DIETHOXY-4-(PHENYLSULPHONYL)-BENZENEDIAZONIUM ZINC CHLORIDE	67	OP7	+40	+45	
	2,5-DIMETHOXY-4-(4-METHYLPHENYL-SULPHONYL)BENZENEDIAZONIUM ZINC CHLORIDE	79	OP7	+40	+45	
	4-DIMETHYLAMINO-6-(2-DIMETHYLAMINO-ETHOXY)TOLUENE-2-DIAZONIUM ZINC CHLORIDE	100	OP7	+40	+45	
	2-(N,N-ETHOXYCARBONYLPHENYLAMINO)-3-METHOXY-4-(N-METHYL-N-CYCLOHEXYLAMINO)-BENZENEDIAZONIUM ZINC CHLORIDE	63-92	OP7	+40	+45	
	2-(N,N-ETHOXYCARBONYLPHENYLAMINO)-3-METHOXY-4-(N-METHYL-N-CYCLOHEXYLAMINO)-BENZENEDIAZONIUM ZINC CHLORIDE	62	OP7	+35	+40	
	N-FORMYL-2-(NITROMETHYLENE)-1,3-PERHYDROTHIAZINE	100	OP7	+45	+50	
	2-(2-HYDROXYETHOXY)-1-(PYRROLIDIN-1-YL)-BENZENE-4-DIAZONIUM ZINC CHLORIDE	100	OP7	+45	+50	
	3-(2-HYDROXYETHOXY)-4-(PYRROLIDIN-1-YL)-BENZENEDIAZONIUM ZINC CHLORIDE	100	OP7	+40	+45	
2-(N,N-METHYLAMINOETHYLCARBONYL)-4-(3,4-DIMETHYLPHENYLSULPHONYL)-BENZENEDIAZONIUM HYDROGEN SULPHATE	96	OP7	+45	+50		
4-NITROSOPHENOL	100	OP7	+35	+40		
3237	DIETHYLENEGLYCOL BIS(ALLYLCARBONATE) + DI-ISOPROPYL PEROXYDICARBONATE	≥ 88 + ≤ 12	OP8	-10	0	

Remarks

- (1) Azodicarbonamide formulations which fulfil the criteria of 2.4.2.3.3.2.2. The control and emergency temperatures shall be determined by the procedure given in 7.3.7.2.
- (2) "EXPLOSIVE" subsidiary risk label (Model No 1, see 5.2.2.2.2) required.
- (3) Azodicarbonamide formulations which fulfil the criteria of 2.4.2.3.3.2.3.
- (4) Azodicarbonamide formulations which fulfil the criteria of 2.4.2.3.3.2.3. The control and emergency temperatures shall be determined by the procedure given in 7.3.7.2.
- (5) Azodicarbonamide formulations which fulfil the criteria of 2.4.2.3.3.2.4.
- (6) Azodicarbonamide formulations which fulfil the criteria of 2.4.2.3.3.2.4. The control and emergency temperatures shall be determined by the procedure given in 7.3.7.2.
- (7) With a compatible diluent having a boiling point of not less than 150°C.
- (8) See 2.4.2.3.2.4.2.
- (9) This entry applies to mixtures of esters of 2-diazo-1-naphthol-4-sulphonic acid and 2-diazo-1-naphthol-5-sulphonic acid meeting the criteria of 2.4.2.3.3.2.4.

2.4.2.3.2.4 Classification of self-reactive substances not listed in 2.4.2.3.2.3, packing instruction IBC520 or portable tank instruction T23 and assignment to a generic entry shall be made by the competent authority of the country of origin on the basis of a test report. Principles applying to the classification of such substances are provided in 2.4.2.3.3. The applicable classification procedures, test methods and criteria, and an example of a suitable test report, are given in the Manual of Tests and Criteria, part II. The statement of approval shall contain the classification and the relevant transport conditions.

- .1 Activators, such as zinc compounds, may be added to some self-reactive substances to change their reactivity. Depending on both the type and the concentration of the activator, this may result in a decrease in thermal stability and a change in explosive properties. If either of these properties is altered, the new formulation shall be assessed in accordance with this classification procedure.
- .2 Samples of self-reactive substances or formulations of self-reactive substances not listed in 2.4.2.3.2.3, for which a complete set of test results is not available and which are to be transported for further testing or evaluation, may be assigned to one of the appropriate entries for self-reactive substances type C provided the following conditions are met:
 - .1 the available data indicate that the sample would be no more dangerous than self-reactive substances type B;
 - .2 the sample is packaged in accordance with packing method OP2 (see applicable packing instruction) and the quantity per cargo transport unit is limited to 10 kg; and
 - .3 the available data indicate that the control temperature, if any, is sufficiently low to prevent any dangerous decomposition and sufficiently high to prevent any dangerous phase separation.

2.4.2.3.3 *Principles for classification of self-reactive substances*

Note: This section refers only to those properties of self-reactive substances which are decisive for their classification. A flow chart, presenting the classification principles in the form of a graphically arranged scheme of questions concerning the decisive properties together with the possible answers, is given in Figure 2.4.1 in chapter 2.4 of the United Nations *Recommendations on the Transport of Dangerous Goods*. These properties shall be determined experimentally. Suitable test methods with pertinent evaluation criteria are given in the Manual of Tests and Criteria, part II.

2.4.2.3.3.1 A self-reactive substance is regarded as possessing explosive properties when, in laboratory testing, the formulation is liable to detonate, to deflagrate rapidly or to show a violent effect when heated under confinement.

2.4.2.3.3.2 The following principles apply to the classification of self-reactive substances not listed in 2.4.2.3.2.3:

- .1 Any substance which can detonate or deflagrate rapidly, as packaged for transport, is prohibited from transport under the provisions for self-reactive substances of class 4.1 in that packaging (defined as SELF-REACTIVE SUBSTANCE TYPE A);
- .2 Any substance possessing explosive properties and which, as packaged for transport, neither detonates nor deflagrates rapidly, but is liable to undergo a thermal explosion in that package, shall also bear an "EXPLOSIVE" subsidiary risk label (Model No. 1, see 5.2.2.2.2). Such a substance may be packaged in amounts of up to 25 kg unless the maximum quantity has to be limited to a lower amount to preclude detonation or rapid deflagration in the package (defined as SELF-REACTIVE SUBSTANCE TYPE B);
- .3 Any substance possessing explosive properties may be transported without an "EXPLOSIVE" subsidiary risk label when the substance as packaged (maximum 50 kg) for transport cannot detonate or deflagrate rapidly or undergo a thermal explosion (defined as SELF-REACTIVE SUBSTANCE TYPE C);
- .4 Any substance which, in laboratory testing:
 - .1 detonates partially, does not deflagrate rapidly and shows no violent effect when heated under confinement; or
 - .2 does not detonate at all, deflagrates slowly and shows no violent effect when heated under confinement; or
 - .3 does not detonate or deflagrate at all and shows a medium effect when heated under confinement may be accepted for transport in packages of not more than 50 kg net mass (defined as SELF-REACTIVE SUBSTANCE TYPE D);
- .5 Any substance which, in laboratory testing, neither detonates nor deflagrates at all and shows low or no effect when heated under confinement may be accepted for transport in packages of not more than 400 kg/450 L (defined as SELF-REACTIVE SUBSTANCE TYPE E);

- .6 Any substance which, in laboratory testing, neither detonates in the cavitated state nor deflagrates at all and shows only a low or no effect when heated under confinement as well as low or no explosive power may be considered for transport in IBCs (defined as SELF-REACTIVE SUBSTANCE TYPE F); (for additional provisions see 4.1.7.2.2);
- .7 Any substance which, in laboratory testing, neither detonates in the cavitated state nor deflagrates at all and shows no effect when heated under confinement nor any explosive power shall be exempted from classification as a self-reactive substance of class 4.1 provided that the formulation is thermally stable (self-accelerating decomposition temperature 60°C to 75°C for a 50 kg package) and any diluent meets the provisions of 2.4.2.3.5 (defined as SELF-REACTIVE SUBSTANCE TYPE G). If the formulation is not thermally stable or a compatible diluent having a boiling point less than 150°C is used for desensitization, the formulation shall be defined as SELF-REACTIVE LIQUID/SOLID TYPE F.

2.4.2.3.4 Temperature control provisions

2.4.2.3.4.1 Self-reactive substances are subject to temperature control in transport if their self-accelerating decomposition temperature (SADT) is less than or equal to 55°C. For currently assigned self-reactive substances, the control and emergency temperatures are shown in 2.4.2.3.2.3. Test methods for determining the SADT are given in the Manual of Tests and Criteria, part II, chapter 28. The test selected shall be conducted in a manner which is representative, both in size and material, of the package to be transported. The temperature control provisions are given in 7.3.7.

2.4.2.3.5 Desensitization of self-reactive substances

2.4.2.3.5.1 In order to ensure safety during transport, self-reactive substances may be desensitized through the use of a diluent. If a diluent is used, the self-reactive substance shall be tested with the diluent present in the concentration and form used in transport.

2.4.2.3.5.2 Diluents which may allow a self-reactive substance to concentrate to a dangerous extent in the event of leakage from a package shall not be used.

2.4.2.3.5.3 The diluent shall be compatible with the self-reactive substance. In this regard, compatible diluents are those solids or liquids which have no detrimental influence on the thermal stability and hazard type of the self-reactive substance.

2.4.2.3.5.4 Liquid diluents in liquid formulations requiring temperature control shall have a boiling point of at least 60°C and a flashpoint not less than 5°C. The boiling point of the liquid shall be at least 50°C higher than the control temperature of the self-reactive substance (see 7.3.7.2).

2.4.2.4 Class 4.1 Solid desensitized explosives

2.4.2.4.1 Definitions and properties

2.4.2.4.1.1 Solid desensitized explosives are explosive substances which are wetted with water or alcohols or are diluted with other substances to form a homogeneous solid mixture to suppress their explosive properties. The desensitizing agent shall be distributed uniformly throughout the substance in the state in which it is to be transported. Where transport under conditions of low temperature is anticipated for substances containing or wetted with water, a suitable and compatible solvent, such as alcohol, may have to be added to lower the freezing point of the liquid. Some of these substances, when in a dry state, are classified as explosives. Where reference is made to a substance which is wetted with water, or some other liquid, it shall be permitted for transport as a class 4.1 substance only when in the wetted condition specified. Entries in the Dangerous Goods List in chapter 3.2 for solid desensitized explosives are UN 1310, UN 1320, UN 1321, UN 1322, UN 1336, UN 1337, UN 1344, UN 1347, UN 1348, UN 1349, UN 1354, UN 1355, UN 1356, UN 1357, UN 1517, UN 1571, UN 2555, UN 2556, UN 2557, UN 2852, UN 2907, UN 3317, UN 3319, UN 3344, UN 3364, UN 3365, UN 3366, UN 3367, UN 3368, UN 3369, UN 3370, UN 3376, UN 3380 and UN 3474.

2.4.2.4.2 Substances that:

- .1 have been provisionally accepted into class 1 according to Test Series 1 and 2 but exempted from class 1 by Test Series 6;
- .2 are not self-reactive substances of class 4.1;
- .3 are not substances of class 5

are also assigned to class 4.1. UN 2956, UN 3241, UN 3242 and UN 3251 are such entries.

2.4.2.5 Class 4.1 Polymerizing substances and mixtures (stabilized)

2.4.2.5.1 Definitions and properties

Polymerizing substances are substances which, without stabilization, are liable to undergo a strongly exothermic reaction resulting in the formation of larger molecules or resulting in the formation of polymers under conditions normally encountered in transport. Such substances are considered to be polymerizing substances of class 4.1 when:

- .1 their self-accelerating polymerization temperature (SAPT) is 75°C or less under the conditions (with or without chemical stabilization as offered for transport) and in the packaging, IBC or portable tank in which the substance or mixture is to be transported;
- .2 they exhibit a heat of reaction of more than 300 J/g; and
- .3 they do not meet any other criteria for inclusion in classes 1 to 8.

A mixture meeting the criteria of a polymerizing substance shall be classified as a polymerizing substance of Class 4.1.

2.4.2.5.2 Polymerizing substances are subject to temperature control in transport if their self-accelerating polymerization temperature (SAPT) is:

- .1 when offered for transport in a packaging or IBC, 50°C or less in the packaging or IBC in which the substance is to be transported; or
- .2 when offered for transport in a portable tank, 45°C or less in the portable tank in which the substance is to be transported.

2.4.3 Class 4.2 – Substances liable to spontaneous combustion

2.4.3.1 Definitions and properties

2.4.3.1.1 Class 4.2 comprises:

- .1 *Pyrophoric substances*, which are substances, including mixtures and solutions (liquid or solid), which, even in small quantities, ignite within 5 minutes of coming into contact with air. These substances are the most liable to spontaneous combustion; and
- .2 *Self-heating substances*, which are substances, other than pyrophoric substances, which, in contact with air without energy supply, are liable to self-heating. These substances will ignite only when in large amounts (kilograms) and after long periods of time (hours or days).

2.4.3.1.2 Self-heating of a substance is a process where the gradual reaction of that substance with oxygen (in air) generates heat. If the rate of heat production exceeds the rate of heat loss, then the temperature of the substance will rise which, after an induction time, may lead to self-ignition and combustion.

2.4.3.1.3 Some substances may also give off toxic gases if involved in a fire.

2.4.3.2 Classification of class 4.2 substances

2.4.3.2.1 Solids are considered pyrophoric solids which shall be classified in class 4.2 if, in tests performed in accordance with the test method given in the Manual of Tests and Criteria, part III, 33.3.1.4, the sample ignites in one of the tests.

2.4.3.2.2 Liquids are considered pyrophoric liquids which shall be classified in class 4.2 if, in tests performed in accordance with the test method given in the Manual of Tests and Criteria, part III, 33.3.1.5, the liquid ignites in the first part of the test, or if it ignites or chars the filter paper.

2.4.3.2.3 Self-heating substances

2.4.3.2.3.1 A substance shall be classified as a self-heating substance of class 4.2 if, in tests performed in accordance with the test method given in the Manual of Tests and Criteria, part III, 33.3.1.6:

- .1 a positive result is obtained using a 25 mm cube sample at 140°C;
- .2 a positive result is obtained in a test using a 100 mm cube sample at 140°C and a negative result is obtained in a test using a 100 mm cube sample at 120°C and the substance is to be transported in packages with a volume of more than 3 m³;

- .3 a positive result is obtained in a test using a 100 mm cube sample at 140°C and a negative result is obtained in a test using a 100 mm cube sample at 100°C and the substance is to be transported in packages with a volume of more than 450 L;
- .4 a positive result is obtained in a test using a 100 mm cube sample at 140°C and a positive result is obtained using a 100 mm cube sample at 100°C.

Note: Self-reactive substances, except for type G, giving also a positive result with this test method shall not be classified in class 4.2 but in class 4.1 (see 2.4.2.3.1.1).

2.4.3.2.3.2 A substance shall not be classified in class 4.2 if:

- .1 a negative result is obtained in a test using a 100 mm cube sample at 140°C;
- .2 a positive result is obtained in a test using a 100 mm cube sample at 140°C and a negative result is obtained in a test using a 25 mm cube sample at 140°C, a negative result is obtained in a test using a 100 mm cube sample at 120°C and the substance is to be transported in packages with a volume not more than 3 m³;
- .3 a positive result is obtained in a test using a 100 mm cube sample at 140°C and a negative result is obtained in a test using a 25 mm cube sample at 140°C, a negative result is obtained in a test using a 100 mm cube sample at 100°C and the substance is to be transported in packages with a volume not more than 450 L.

2.4.3.3 Assignment of packing groups

2.4.3.3.1 Packing group I shall be assigned to all pyrophoric solids and liquids.

2.4.3.3.2 Packing group II shall be assigned to self-heating substances which give a positive result in a test using a 25 mm cube sample at 140°C.

2.4.3.3.3 Packing group III shall be assigned to self-heating substances if:

- .1 a positive result is obtained in a test using a 100 mm cube sample at 140°C and a negative result is obtained in a test using a 25 mm cube sample at 140°C and the substance is to be transported in packages with a volume of more than 3 m³;
- .2 a positive result is obtained in a test using a 100 mm cube sample at 140°C and a negative result is obtained in a test using a 25 mm cube sample at 140°C, a positive result is obtained in a test using a 100 mm cube sample at 120°C and the substance is to be transported in packages with a volume of more than 450 L;
- .3 a positive result is obtained in a test using a 100 mm cube sample at 140°C and a negative result is obtained in a test using a 25 mm cube sample at 140°C and a positive result is obtained in a test using a 100 mm cube sample at 100°C.

2.4.4 Class 4.3 – Substances which, in contact with water, emit flammable gases

2.4.4.1 Definitions and properties

2.4.4.1.1 For the purpose of this Code, the substances in this class are either liquids or solids which, by interaction with water, are liable to become spontaneously flammable or to give off flammable gases in dangerous quantities.

2.4.4.1.2 Certain substances, in contact with water, may emit flammable gases that can form explosive mixtures with air. Such mixtures are easily ignited by all ordinary sources of ignition, for example naked lights, sparking handtools or unprotected lamps. The resulting blast wave and flames may endanger people and the environment. The test method referred to in 2.4.4.2 is used to determine whether the reaction of a substance with water leads to the development of a dangerous amount of gases which may be flammable. This test method shall not be applied to pyrophoric substances.

2.4.4.2 Classification of class 4.3 substances

2.4.4.2.1 Substances which, in contact with water, emit flammable gases shall be classified in class 4.3 if, in tests performed in accordance with the test method given in the Manual of Tests and Criteria, part III, 33.4.1:

- .1 spontaneous ignition takes place in any step of the test procedure; or
- .2 there is an evolution of a flammable gas at a rate greater than 1 litre per kilogram of the substance per hour.

2.4.4.3 Assignment of packing groups

2.4.4.3.1 Packing group I shall be assigned to any substance which reacts vigorously with water at ambient temperatures and demonstrates generally a tendency for the gas produced to ignite spontaneously, or which reacts readily with water at ambient temperatures such that the rate of evolution of flammable gas is equal to or greater than 10 litres per kilogram of substance over any one minute.

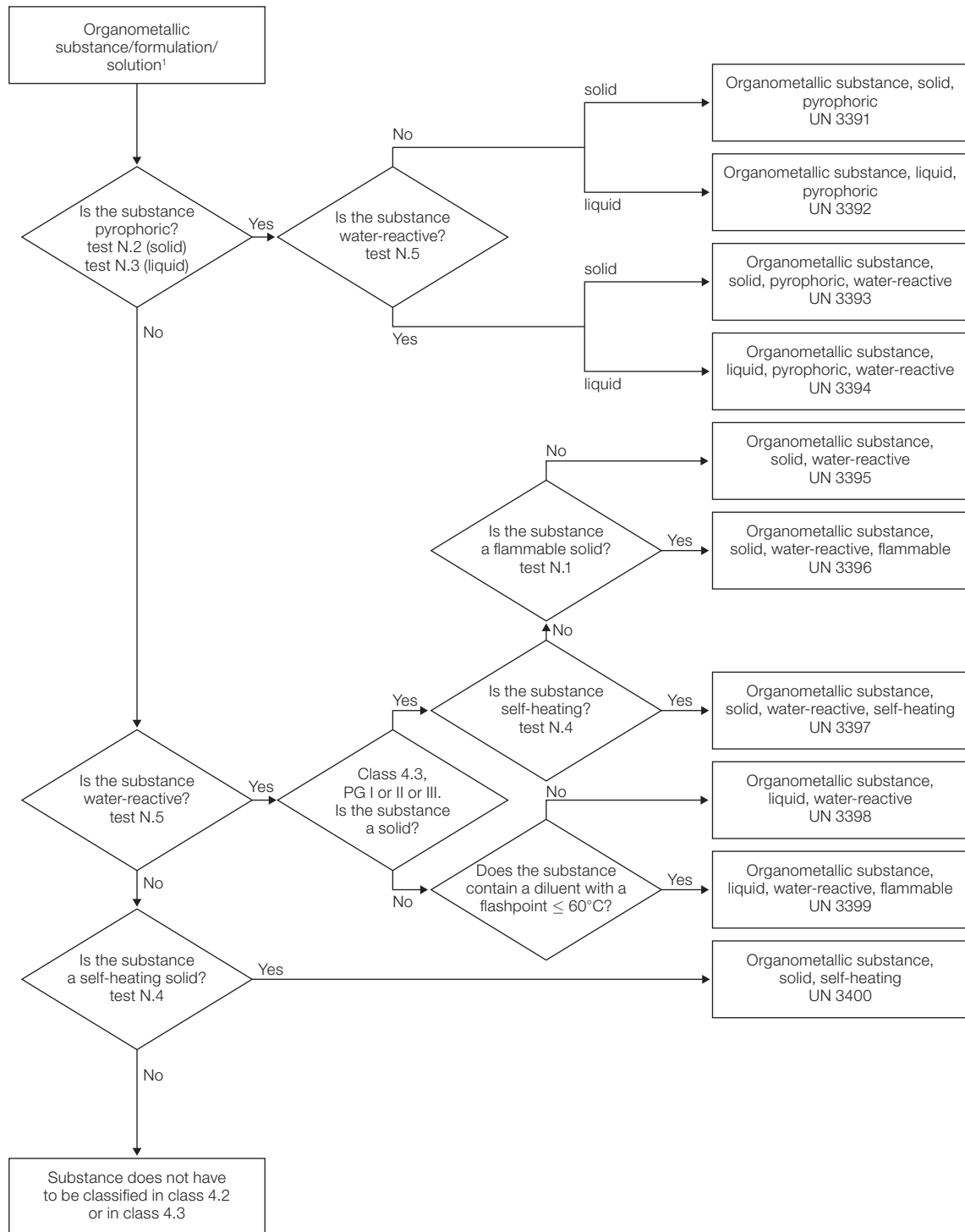
2.4.4.3.2 Packing group II shall be assigned to any substance which reacts readily with water at ambient temperatures such that the maximum rate of evolution of flammable gas is equal to or greater than 20 litres per kilogram of substance per hour, and which does not meet the criteria for packing group I.

2.4.4.3.3 Packing group III shall be assigned to any substance which reacts slowly with water at ambient temperatures such that the maximum rate of evolution of flammable gas is greater than 1 litre per kilogram of substance per hour, and which does not meet the criteria for packing groups I or II.

2.4.5 Classification of organometallic substances

Depending on their properties, organometallic substances may be classified in classes 4.2 or 4.3, as appropriate, in accordance with the following flowchart:

Flowchart scheme for organometallic substances



Chapter 2.5

Class 5 – Oxidizing substances and organic peroxides

2.5.0 Introductory note

Because of the differing properties exhibited by dangerous goods within classes 5.1 and 5.2, it is impracticable to establish a single criterion for classification in either class. Tests and criteria for assignment to the two classes are addressed in this chapter.

2.5.1 Definitions and general provisions

In this Code, class 5 is divided into two classes as follows:

Class 5.1 – Oxidizing substances

Substances which, while in themselves not necessarily combustible, may, generally by yielding oxygen, cause, or contribute to, the combustion of other material. Such substances may be contained in an article;

Class 5.2 – Organic peroxides

Organic substances which contain the bivalent –O–O– structure and may be considered derivatives of hydrogen peroxide, where one or both of the hydrogen atoms have been replaced by organic radicals. Organic peroxides are thermally unstable substances which may undergo exothermic self-accelerating decomposition. In addition, they may have one or more of the following properties:

- be liable to explosive decomposition;
- burn rapidly;
- be sensitive to impact or friction;
- react dangerously with other substances;
- cause damage to the eyes.

2.5.2 Class 5.1 – Oxidizing substances

Note: For the classification of oxidizing substances to class 5.1, in the event of divergence between test results and known experience, judgement based on known experience shall take precedence over test results.

2.5.2.1 Properties

2.5.2.1.1 Substances of class 5.1 in certain circumstances directly or indirectly evolve oxygen. For this reason, oxidizing substances increase the risk and intensity of fire in combustible material with which they come into contact.

2.5.2.1.2 Mixtures of oxidizing substances with combustible material and even with material such as sugar, flour, edible oils, mineral oils, etc., are dangerous. These mixtures are readily ignited, in some cases by friction or impact. They may burn violently and may lead to explosion.

2.5.2.1.3 There will be a violent reaction between most oxidizing substances and liquid acids, evolving toxic gases. Toxic gases may also be evolved when certain oxidizing substances are involved in a fire.

2.5.2.1.4 The above-mentioned properties are, in general, common to all substances in this class. Additionally, some substances possess specific properties, which shall be taken into account in transport. These properties are shown in the Dangerous Goods List in chapter 3.2.

2.5.2.2 Oxidizing solids

2.5.2.2.1 *Classification of solid substances of class 5.1*

2.5.2.2.1.1 Tests are performed to measure the potential for the solid substance to increase the burning rate or burning intensity of a combustible substance when the two are thoroughly mixed. The procedure is given in the Manual of Tests and Criteria, part III, subsection 34.4.1 (test O.1) or alternatively, in subsection 34.4.3 (test O.3). Tests are conducted on the substance to be evaluated mixed with dry fibrous cellulose in mixing ratios of 1:1 and 4:1, by mass, of sample to cellulose. The burning characteristics of the mixtures are compared:

- .1 in the test O.1, with the standard 3:7 mixture, by mass, of potassium bromate to cellulose. If the burning time is equal to or less than this standard mixture, the burning times shall be compared with those from the packing group I or II reference standards, 3:2 and 2:3 ratios, by mass, of potassium bromate to cellulose, respectively; or
- .2 in the test O.3, with the standard 1:2 mixture, by mass, of calcium peroxide to cellulose. If the burning rate is equal to or greater than this standard mixture, the burning rates shall be compared with those from the packing group I or II reference standards, 3:1 and 1:1 ratios, by mass, of calcium peroxide to cellulose, respectively.

2.5.2.2.1.2 The classification test results are assessed on the basis of:

- .1 the comparison of the mean burning time (for the test O.1) or burning rate (for the test O.3) with those of the reference mixtures; and
- .2 whether the mixture of substance and cellulose ignites and burns.

2.5.2.2.1.3 A solid substance is classified in class 5.1 if the 4:1 or 1:1 sample-to-cellulose ratio (by mass) tested, exhibits:

- .1 in the test O.1, a mean burning time equal to or less than the mean burning time of a 3:7 mixture (by mass) of potassium bromate and cellulose; or
- .2 in the test O.3, a mean burning rate equal to or greater than the mean burning rate of a 1:2 mixture (by mass) of calcium peroxide and cellulose.

2.5.2.2.2 *Assignment of packing groups*

Solid oxidizing substances are assigned to a packing group according to one of the test procedures in the Manual of Tests and Criteria, part III, subsection 34.4.1 (test O.1) or subsection 34.4.3 (test O.3), in accordance with the following criteria:

- .1 Test O.1:
 - .1 Packing group I: any substance which, in the 4:1 or 1:1 sample-to-cellulose ratio (by mass) tested, exhibits a mean burning time less than the mean burning time of a 3:2 mixture, by mass, of potassium bromate and cellulose;
 - .2 Packing group II: any substance which, in the 4:1 or 1:1 sample-to-cellulose ratio (by mass) tested, exhibits a mean burning time equal to or less than the mean burning time of a 2:3 mixture (by mass) of potassium bromate and cellulose, and the criteria for packing group I are not met;
 - .3 Packing group III: any substance which, in the 4:1 or 1:1 sample-to-cellulose ratio (by mass) tested, exhibits a mean burning time equal to or less than the mean burning time of a 3:7 mixture (by mass) of potassium bromate and cellulose, and the criteria for packing groups I and II are not met;
 - .4 Not class 5.1: any substance which, in both the 4:1 and 1:1 sample-to-cellulose ratio (by mass) tested, does not ignite and burn, or exhibits mean burning times greater than that of a 3:7 mixture (by mass) of potassium bromate and cellulose.
- .2 Test O.3:
 - .1 Packing group I: any substance which, in the 4:1 or 1:1 sample-to-cellulose ratio (by mass) tested, exhibits a mean burning rate greater than the mean burning rate of a 3:1 mixture (by mass) of calcium peroxide and cellulose;
 - .2 Packing group II: any substance which, in the 4:1 or 1:1 sample-to-cellulose ratio (by mass) tested, exhibits a mean burning rate equal to or greater than the mean burning rate of a 1:1 mixture (by mass) of calcium peroxide and cellulose, and the criteria for packing group I are not met;
 - .3 Packing group III: any substance which, in the 4:1 or 1:1 sample-to-cellulose ratio (by mass) tested, exhibits a mean burning rate equal to or greater than the mean burning rate of a 1:2 mixture (by mass) of calcium peroxide and cellulose, and the criteria for packing groups I and II are not met;
 - .4 Not class 5.1: any substance which, in both the 4:1 and 1:1 sample-to-cellulose ratio (by mass) tested, does not ignite and burn, or exhibits a mean burning rate less than the mean burning rate of a 1:2 mixture (by mass) of calcium peroxide and cellulose.

2.5.2.3 Oxidizing liquids

2.5.2.3.1 *Classification of liquid substances of class 5.1*

2.5.2.3.1.1 A test is performed to determine the potential for a liquid substance to increase the burning rate or burning intensity of a combustible substance or for spontaneous ignition to occur when the two are thoroughly mixed. The procedure is given in the Manual of Tests and Criteria, part III, 34.4.2 (test O.2). It measures the pressure rise time during combustion. Whether a liquid is an oxidizing substance of class 5.1 and, if so, whether packing group I, II or III shall be assigned, is decided on the basis of the test result (see also Precedence of hazard characteristics in 2.0.3).

2.5.2.3.1.2 The classification test results are assessed on the basis of:

- .1 whether the mixture of substance and cellulose spontaneously ignites;
- .2 the comparison of the mean time taken for the pressure to rise from 690 kPa to 2070 kPa gauge with those of the reference substances.

2.5.2.3.1.3 A liquid substance is classified in class 5.1 if the 1:1 mixture, by mass, of substance and cellulose tested exhibits a mean pressure rise time less than or equal to the mean pressure rise time of a 1:1 mixture, by mass, of 65% aqueous nitric acid and cellulose.

2.5.2.3.2 *Assignment of packing groups*

2.5.2.3.2.1 Liquid oxidizing substances are assigned to a packing group according to the test procedure in the Manual of Tests and Criteria, part III, 34.4.2, in accordance with the following criteria:

- .1 Packing group I: any substance which, in the 1:1 mixture (by mass) of substance and cellulose tested, spontaneously ignites; or the mean pressure rise time of a 1:1 mixture (by mass) of substance and cellulose is less than that of a 1:1 mixture (by mass) of 50% perchloric acid and cellulose;
- .2 Packing group II: any substance which, in the 1:1 mixture (by mass) of substance and cellulose tested, exhibits a mean pressure rise time less than or equal to the mean pressure rise time of a 1:1 mixture (by mass) of 40% aqueous sodium chlorate solution and cellulose; and the criteria for packing group I are not met;
- .3 Packing group III: any substance which, in the 1:1 mixture (by mass) of substance and cellulose tested, exhibits a mean pressure rise time less than or equal to the mean pressure rise time of a 1:1 mixture (by mass) of 65% aqueous nitric acid and cellulose; and the criteria for packing groups I and II are not met;
- .4 Not classified as class 5.1: any substance which, in the 1:1 mixture (by mass) of substance and cellulose tested, exhibits a pressure rise of less than 2070 kPa gauge; or exhibits a mean pressure rise time greater than the mean pressure rise time of a 1:1 mixture (by mass) of 65% aqueous nitric acid and cellulose.

2.5.3 Class 5.2 – Organic peroxides

2.5.3.1 Properties

2.5.3.1.1 Organic peroxides are liable to exothermic decomposition at normal or elevated temperatures. The decomposition can be initiated by heat, contact with impurities (such as acids, heavy-metal compounds, amines), friction or impact. The rate of decomposition increases with temperature and varies with the organic peroxide formulation. Decomposition may result in the evolution of harmful, or flammable, gases or vapours. For certain organic peroxides the temperature shall be controlled during transport. Some organic peroxides may decompose explosively, particularly if confined. This characteristic may be modified by the addition of diluents or by the use of appropriate packagings. Many organic peroxides burn vigorously.

2.5.3.1.2 Contact of organic peroxides with the eyes is to be avoided. Some organic peroxides will cause serious injury to the cornea, even after brief contact, or will be corrosive to the skin.

2.5.3.2 Classification of organic peroxides

2.5.3.2.1 Any organic peroxide shall be considered for classification in class 5.2, unless the organic peroxide formulation contains:

- .1 not more than 1.0% available oxygen from the organic peroxides when containing not more than 1.0% hydrogen peroxide; or
- .2 not more than 0.5% available oxygen from the organic peroxides when containing more than 1.0% but not more than 7.0% hydrogen peroxide.

Note: The available oxygen content (%) of an organic peroxide formulation is given by the formula:

$$16 \times \Sigma(n_i \times c_i/m_i)$$

where:

- n_i = number of peroxygen groups per molecule of organic peroxide i ;
- c_i = concentration (mass %) of organic peroxide i ;
- m_i = molecular mass of organic peroxide i .

- 2.5.3.2.2** Organic peroxides are classified into seven types according to the degree of danger they present. The types of organic peroxide range from type A, which may not be accepted for transport in the packaging in which it is tested, to type G, which is not subject to the provisions for organic peroxides of class 5.2. The classification of types B to F is directly related to the maximum quantity allowed in one packaging.
- 2.5.3.2.3** Organic peroxides permitted for transport in packagings are listed in 2.5.3.2.4, those permitted for transport in IBCs are listed in packing instruction IBC520 and those permitted for transport in portable tanks are listed in portable tank instruction T23. For each permitted substance listed, the generic entry of the Dangerous Goods List (UN 3101 to UN 3120) is assigned, appropriate subsidiary risks and remarks providing relevant transport information are given. The generic entries specify:
- .1 organic peroxide type (B to F);
 - .2 physical state (liquid or solid); and
 - .3 temperature control, when required (see 2.5.3.4).
- 2.5.3.2.3.1** Mixtures of the listed formulations may be classified as the same type of organic peroxide as that of the most dangerous component and be transported under the conditions of transport given for this type. However, as two stable components can form a thermally less stable mixture, the self-accelerating decomposition temperature (SADT) of the mixture shall be determined and, if necessary, temperature control applied as required by 2.5.3.4.

2.5.3.2.4 List of currently assigned organic peroxides in packagings

Note: Packing Method codes "OP1" to "OP8" refer to packing methods in packing instruction P520. Peroxides to be transported shall fulfil the classification and the control and emergency temperatures (derived from the SADT) as listed. For substances permitted in IBCs, see packing instruction IBC520, and for those permitted in tanks, see portable tank instruction T23.

Number (generic entry)	ORGANIC PEROXIDE	Concentration (%)	Diluent type A (%)	Diluent type B (%) ⁽¹⁾	Inert solid (%)	Water (%)	Packing method	Control temperature (°C)	Emergency temperature (°C)	Subsidiary risks and remarks	
3101	<i>tert</i> -BUTYL PEROXYACETATE	> 52 – 77	≥ 23				OP5			(3)	
	1,1-DI-(<i>tert</i> -BUTYLPEROXY)CYCLOHEXANE	> 80 – 100					OP5			(3)	
	1,1-DI-(<i>tert</i> -BUTYLPEROXY)-3,3,5-TRIMETHYLCYCLOHEXANE	> 90 – 100					OP5			(3)	
	METHYL ETHYL KETONE PEROXIDE(S)	see remark (8)	≥ 48				OP5			(3) (8) (13)	
	2,5-DIMETHYL-2,5-DI-(<i>tert</i> -BUTYLPEROXY)-HEXYNE-3	> 86 – 100					OP5			(3)	
	3102	<i>tert</i> -BUTYL MONOPEROXYMALEATE	> 52 – 100					OP5			(3)
		3-CHLOROPEROXYBENZOIC ACID	> 57 – 86			≥ 14		OP1			(3)
		DIBENZOYL PEROXIDE	> 52 – 100			≤ 48		OP2			(3)
		DIBENZOYL PEROXIDE	> 77 – 94				≥ 6	OP4			(3)
		DI-4-CHLOROBENZOYL PEROXIDE	≤ 77				≥ 23	OP5			(3)
DI-2,4-DICHLOROBENZOYL PEROXIDE		≤ 77				≥ 23	OP5			(3)	
2,2-DIHYDROPEROXYPROPANE		≤ 27					OP5			(3)	
2,5-DIMETHYL-2,5-DI-(BENZOYLPEROXY)HEXANE		> 82 – 100					OP5			(3)	
DI-(2-PHENOXYETHYL) PEROXYDICARBONATE		> 85 – 100					OP5			(3)	
DISUCCINIC ACID PEROXIDE		> 72 – 100				≥ 73	OP4			(3) (17)	
3103	<i>tert</i> -AMYL PEROXYBENZOATE	≤ 100					OP5				
	<i>tert</i> -AMYLPEROXY ISOPROPYL CARBONATE	≤ 77	≥ 23				OP5				
	<i>n</i> -BUTYL 4,4-DI-(<i>tert</i> -BUTYLPEROXY)VALERATE	> 52 – 100					OP5				
	<i>tert</i> -BUTYL HYDROPEROXIDE	> 79 – 90				≥ 10	OP5			(13)	
	<i>tert</i> -BUTYL HYDROPEROXIDE + DI- <i>tert</i> -BUTYL PEROXIDE	< 82 + > 9				≥ 7	OP5			(13)	
	<i>tert</i> -BUTYL MONOPEROXYMALEATE	≤ 52	≥ 48				OP6				
	<i>tert</i> -BUTYL PEROXYACETATE	> 32 – 52	≥ 48				OP6				
	<i>tert</i> -BUTYL PEROXYBENZOATE	> 77 – 100					OP5				
	<i>tert</i> -BUTYLPEROXY ISOPROPYLCARBONATE	≤ 77	≥ 23				OP5				
	<i>tert</i> -BUTYLPEROXY-2-METHYLBENZOATE	≤ 100					OP5				
1,1-DI-(<i>tert</i> -AMYLPEROXY)CYCLOHEXANE	≤ 82	≥ 18				OP6					

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Number (generic entry)	ORGANIC PEROXIDE	Concentration (%)	Diluent type A (%)	Diluent type B (%) ⁽¹⁾	Inert solid (%)	Water (%)	Packing method	Control temperature (°C)	Emergency temperature (°C)	Subsidiary risks and remarks
3103 (cont.)	2,2-DI-(<i>tert</i> -BUTYLPEROXY)BUTANE	≤ 52	≥ 48				OP6			
	1,6-DI-(<i>tert</i> -BUTYLPEROXYCARBONYLOXY)-HEXANE	≤ 72	≥ 28				OP5			
	1,1-DI-(<i>tert</i> -BUTYLPEROXY)CYCLOHEXANE	> 52 – 80	≥ 20				OP5			
	1,1-DI-(<i>tert</i> -BUTYLPEROXY)CYCLOHEXANE	≤ 72	≥ 28				OP5			(30)
	1,1-DI-(<i>tert</i> -BUTYLPEROXY)-3,5-TRIMETHYLCYCLOHEXANE	> 57 – 90	≥ 10				OP5			
	1,1-DI-(<i>tert</i> -BUTYLPEROXY)-3,3,5-TRIMETHYLCYCLOHEXANE	≤ 77	≥ 23				OP5			
	1,1-DI-(<i>tert</i> -BUTYLPEROXY)-3,3,5-TRIMETHYLCYCLOHEXANE	≤ 90	≥ 10				OP5			(30)
	2,5-DIMETHYL-2,5-DI-(<i>tert</i> -BUTYLPEROXY)HEXANE	> 90 – 100					OP5			
	2,5-DIMETHYL-2,5-DI-(<i>tert</i> -BUTYLPEROXY)-HEXYNE-3	> 52 – 86	≥ 14				OP5			(26)
	ETHYL 3,3-DI-(<i>tert</i> -BUTYLPEROXY)BUTYRATE	> 77 – 100					OP5			
3104	ORGANIC PEROXIDE, LIQUID, SAMPLE						OP2			(11)
	CYCLOHEXANONE PEROXIDE(S)	≤ 91				≥ 9	OP6			(13)
	DIBENZOYL PEROXIDE	≤ 77				≥ 23	OP6			
	2,5-DIMETHYL-2,5-DI(BENZOYLPEROXY)HEXANE	≤ 82				≥ 18	OP5			
	2,5-DIMETHYL-2,5-DIHYDROPEROXYHEXANE	≤ 82				≥ 18	OP6			
	ORGANIC PEROXIDE, SOLID, SAMPLE						OP2			(11)
	ACETYL ACETONE PEROXIDE	≤ 42	≥ 48				OP7			(2)
	<i>tert</i> -AMYL PEROXYACETATE	≤ 62	≥ 38				OP7			
	<i>tert</i> -AMYL PEROXY-2-ETHYLHEXYL CARBONATE	≤ 100					OP7			
	<i>tert</i> -AMYL PEROXY-3,5,5-TRIMETHYLHEXANOATE	≤ 100					OP7			
3105	<i>tert</i> -BUTYL HYDROPEROXIDE	≤ 80	≥ 20				OP7			(4) (13)
	<i>tert</i> -BUTYL PEROXYBENZOATE	> 52 – 77	≥ 23				OP7			
	<i>tert</i> -BUTYL PEROXYBUTYL FUMARATE	≤ 52	≥ 48				OP7			
	<i>tert</i> -BUTYL PEROXYCROTONATE	≤ 77	≥ 23				OP7			
	<i>tert</i> -BUTYL PEROXY-2-ETHYLHEXYLCARBONATE	≤ 100					OP7			
	1-(2- <i>tert</i> -BUTYLPEROXY ISOPROPYL)-3-ISOPROPENYLBENZENE	≤ 77	≥ 23				OP7			
	<i>tert</i> -BUTYL PEROXY-3,5,5-TRIMETHYLHEXANOATE	> 37 – 100					OP7			
	CYCLOHEXANONE PEROXIDE(S)	≤ 72	≥ 28				OP7			(5)

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Number (generic entry)	ORGANIC PEROXIDE	Concentration (%)	Diluent type A (%)	Diluent type B (%) ⁽¹⁾	Inert solid (%)	Water (%)	Packing method	Control temperature (°C)	Emergency temperature (°C)	Subsidiary risks and remarks
3105 (cont.)	2,2-DI-(<i>tert</i> -AMYLPEROXY)BUTANE	≤ 57	≥ 43				OP7			
	DI- <i>tert</i> -BUTYL PEROXYAZELATE	≤ 52	≥ 48				OP7			
	1,1-DI-(<i>tert</i> -BUTYLPEROXY)CYCLOHEXANE	> 42 – 52	≥ 48				OP7			
	1,1-DI-(<i>tert</i> -BUTYLPEROXY)CYCLOHEXANE + <i>tert</i> -BUTYL PEROXY-2-ETHYLHEXANOATE	≤ 43 + ≤ 16	≥ 41				OP7			
	DI-(<i>tert</i> -BUTYLPEROXY)PHTHALATE	> 42 – 52	≥ 48				OP7			
	2,2-DI-(<i>tert</i> -BUTYLPEROXY)PROPANE	≤ 52	≥ 48				OP7			
	2,5-DIMETHYL-2,5-DI-(<i>tert</i> -BUTYLPEROXY)HEXANE	> 52 – 90	≥ 10				OP7			
	2,5-DIMETHYL-2,5-DI-(3,5,5-TRIMETHYLHEXANOYLPEROXY)HEXANE	≤ 77	≥ 23				OP7			
	ETHYL 3,3-DI-(<i>tert</i> -AMYLPEROXY)BUTYRATE	≤ 67	≥ 33				OP7			
	ETHYL 3,3-DI-(<i>tert</i> -BUTYLPEROXY)BUTYRATE	≤ 77	≥ 23				OP7			
	<i>p</i> -MENTHYL HYDROPEROXIDE	> 72 – 100	≥ 23				OP7			(13)
	METHYLETHYL KETONE PEROXIDE(S)	see remark (9)	≥ 55				OP7			(9)
	METHYL ISOBUTYL KETONE PEROXIDE(S)	≤ 62	≥ 19				OP7			(22)
	PEROXYACETIC ACID, TYPE D, stabilized	≤ 43	≥ 43				OP7			(13) (14) (19)
	PINANYL HYDROPEROXIDE	> 56 – 100	≥ 58				OP7			(13)
	1,1,3,3-TETRAMETHYLBUTYL HYDROPEROXIDE	≤ 100					OP7			
3,6,9-TRIMETHYL-3,6,9-TRIMETHYL-1,4,7-TRIPEROXANONE	≤ 42	≥ 58				OP7			(28)	
3106	ACETYL ACETONE PEROXIDE	≤ 32 as a paste					OP7			(20)
	<i>tert</i> -BUTYL PEROXYBENZOATE	≤ 52			≥ 48		OP7			
	<i>tert</i> -BUTYL PEROXY-2-ETHYLHEXANOATE + 2,2-DI-(<i>tert</i> -BUTYLPEROXY)BUTANE	≤ 12 + ≤ 14	≥ 14		≥ 60		OP7			
	<i>tert</i> -BUTYLPEROXY STEARYLCARBONATE	≤ 100					OP7			
	<i>tert</i> -BUTYL PEROXY-3,5,5-TRIMETHYLHEXANOATE	≤ 42			≥ 58		OP7			
	3-CHLOROPEROXYBENZOIC ACID	≤ 57			≥ 3	≥ 40	OP7			
	3-CHLOROPEROXYBENZOIC ACID	≤ 77			≥ 6	≥ 17	OP7			
	CYCLOHEXANONE PEROXIDE(S)	≤ 72 as a paste					OP7			(5) (20)
	DIBENZOYL PEROXIDE	≤ 62			≥ 28	≥ 10	OP7			
	DIBENZOYL PEROXIDE	> 52 – 62 as a paste					OP7			(20)
	DIBENZOYL PEROXIDE	> 35 – 52			≥ 48		OP7			
	1,1-DI-(<i>tert</i> -BUTYLPEROXY)CYCLOHEXANE	≤ 42	≥ 13		≥ 45		OP7			
	DI-(<i>tert</i> -BUTYLPEROXYISOPROPYL)BENZENE(S)	> 42 – 100			≤ 57		OP7			

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Number (generic entry)	ORGANIC PEROXIDE	Concentration (%)	Diluent type A (%)	Diluent type B (%) ⁽¹⁾	Inert solid (%)	Water (%)	Packing method	Control temperature (°C)	Emergency temperature (°C)	Subsidiary risks and remarks
3106 (cont.)	DI-(<i>tert</i> -BUTYLPEROXY)PHTHALATE	≤ 52 as a paste	≥ 13		≥ 45		OP7			(20)
	2,2-DI-(<i>tert</i> -BUTYLPEROXY)PROPANE	≤ 42					OP7			
	DI-4-CHLOROBENZOYL PEROXIDE	≤ 52 as a paste					OP7			(20)
	2,2-DI-(4,4-DI-(<i>tert</i> -BUTYLPEROXY)CYCLOHEXYL)-PROPANE	≤ 42			≥ 58		OP7			
	DI-2,4-DICHLOROBENZOYL PEROXIDE	≤ 52 as a paste with silicon oil					OP7			
	DI-(1-HYDROXYCYCLOHEXYL)PEROXIDE	≤ 100					OP7			
	DIISOPROPYLBENZENE DIHYDROPEROXIDE	≤ 82	≥ 5			≥ 5	OP7			(24)
	DILAUROYL PEROXIDE	≤ 100					OP7			
	DI-(4-METHYLBENZOYL) PEROXIDE	≤ 52 as paste with silicon oil					OP7			
	2,5-DIMETHYL-2,5-DI-(BENZOYLPEROXY)HEXANE	≤ 82			≥ 18		OP7			
	2,5-DIMETHYL-2,5-DI-(<i>tert</i> -BUTYLPEROXY)-HEXYNE-3	≤ 52			≥ 48		OP7			
	DI-(2-PHENOXYETHYL)PEROXYDICARBONATE	≤ 85					OP7			
	ETHYL 3,3-DI-(<i>tert</i> -BUTYLPEROXY)BUTYRATE	≤ 52			≥ 48		OP7			
	[(3R-(3R,5aS,6S,8aS,9R,10R,12S,12aR*))]-DECAHYDRO-10-METHOXY-3,6,9-TRIMETHYL-3,12-EPOXY-12H-PYRANO[4,3- <i>j</i>]-1,2-BENZODIOXEPIN	≤ 100					OP7			
3107	<i>tert</i> -AMYL HYDROPEROXIDE	≤ 88	≥ 6			≥ 6	OP8			
	<i>tert</i> -BUTYL HYDROPEROXIDE	≤ 79					OP8			(13) (23)
	CUMYL HYDROPEROXIDE	> 90 – 98	≤ 10			> 14	OP8			(13)
	DI- <i>tert</i> -AMYL PEROXIDE	≤ 100					OP8			
	DIBENZOYL PEROXIDE	> 36 – 42	≥ 18			≤ 40	OP8			
	DI- <i>tert</i> -BUTYL PEROXIDE	> 52 – 100					OP8			
	1,1-DI-(<i>tert</i> -BUTYLPEROXY)CYCLOHEXANE	≤ 27	≥ 25				OP8			(21)
	DI-(<i>tert</i> -BUTYLPEROXY)PHTHALATE	≤ 42	≥ 58				OP8			
	1,1-DI-(<i>tert</i> -BUTYLPEROXY)-3,3,5-TRIMETHYLCYCLOHEXANE	≤ 57	≥ 43				OP8			
	1,1-DI-(<i>tert</i> -BUTYLPEROXY)-3,3,5-TRIMETHYLCYCLOHEXANE	≤ 32	≥ 26		≥ 42		OP8			
	2,2-DI-(4,4-DI-(<i>tert</i> -BUTYLPEROXY)CYCLOHEXYL)-PROPANE	≤ 22			≥ 78		OP8			

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3107 (cont.)	METHYL ETHYL KETONE PEROXIDE(S)	see remark (10)	≥ 60				OP8			(10)
	3,3,5,7,7-PENTAMETHYL-1,2,4-TRIOXEPANE	≤ 100					OP8			
	PEROXYACETIC ACID, TYPE E, stabilized	≤ 43					OP8			(13) (15) (19)
	POLYETHER POLY- <i>tert</i> -BUTYLPEROXY-CARBONATE	≤ 52		≥ 48			OP8			
3108	<i>tert</i> -BUTYL CUMYL PEROXIDE	≤ 52			≥ 48		OP8			
	<i>n</i> -BUTYL 4,4-DI-(<i>tert</i> -BUTYLPEROXY)VALERATE	≤ 52			≥ 48		OP8			
	<i>tert</i> -BUTYL MONOPEROXYMALEATE	≤ 52			≥ 48		OP8			
	<i>tert</i> -BUTYL MONOPEROXYMALEATE	≤ 52 as a paste					OP8			
	1-(2- <i>tert</i> -BUTYLPEROXYISOPROPYL)-3-ISOPROPENYLBENZENE	≤ 42			≥ 58		OP8			
	DIBENZOYL PEROXIDE	≤ 56.5 as a paste				≥ 15	OP8			
	DIBENZOYL PEROXIDE	≤ 52 as a paste					OP8			(20)
	2,5-DIMETHYL-2,5-DI-(<i>tert</i> -BUTYLPEROXY)HEXANE	≤ 47 as a paste					OP8			
	2,5-DIMETHYL-2,5-DI-(<i>tert</i> -BUTYLPEROXY)HEXANE	≤ 77			≥ 23		OP8			
	<i>tert</i> -BUTYL CUMYL PEROXIDE	> 42 – 100					OP8			
3109	<i>tert</i> -BUTYL HYDROPEROXIDE	≤ 72				≥ 28	OP8			(13)
	<i>tert</i> -BUTYL PEROXYACETATE	≤ 32		≥ 68			OP8			
	<i>tert</i> -BUTYL PEROXY-3,5-TRIMETHYL-HEXANOATE	≤ 37		≥ 63			OP8			
	CUMYL HYDROPEROXIDE	≤ 90		≥ 10			OP8			(13) (18)
	DIBENZOYL PEROXIDE	≤ 42 as a stable dispersion in water					OP8			
	DI- <i>tert</i> -BUTYL PEROXIDE	≤ 52			≥ 48		OP8			(25)
	1,1-DI-(<i>tert</i> -BUTYLPEROXY)CYCLOHEXANE	≤ 42		≥ 58			OP8			
	1,1-DI-(<i>tert</i> -BUTYLPEROXY)CYCLOHEXANE	≤ 13		≥ 13	≥ 74		OP8			
	DILAULOYL PEROXIDE	≤ 42 as a stable dispersion in water					OP8			
	2,5-DIMETHYL-2,5-DI-(<i>tert</i> -BUTYLPEROXY)HEXANE	≤ 52		≥ 48			OP8			
	ISOPROPYLCUMYL HYDROPEROXIDE	≤ 72		≥ 28			OP8			(13)
	<i>p</i> -MENTHYL HYDROPEROXIDE	≤ 72		≥ 28			OP8			(27)
	METHYL ISOPROPYL KETONE PEROXIDE(S)	See remark (31)		≥ 70			OP8			(31)
	PEROXYACETIC ACID, TYPE F, stabilized	≤ 43					OP8			(13) (16) (19)
PINANYL HYDROPEROXIDE	≤ 56		≥ 44			OP8				

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3110	DICUMYL PEROXIDE	> 52 – 100					OP8			(12)
	1,1-DI-(<i>tert</i> -BUTYLPEROXY)-3,3,5-TRIMETHYL-CYCLOHEXANE	≤ 57			≥ 43		OP8			
3111	3,6,9-TRIETHYL-3,6,9-TRIMETHYL-1,4,7-TRIPEROXONANE	≤ 17	≥ 18		≥ 65		OP8			
	<i>tert</i> -BUTYL PEROXYISOBUTYRATE	> 52 – 77		≥ 23			OP5	+15	+20	(3)
	DIISOBUTYRYL PEROXIDE	> 32 – 52		≥ 48			OP5	-20	-10	(3)
	ISOPROPYL <i>sec</i> -BUTYL PEROXYDICARBONATE + DI- <i>sec</i> -BUTYL PEROXYDICARBONATE + DIISOPROPYL PEROXYDICARBONATE	≤ 52 + ≤ 28 + ≤ 22					OP5	-20	-10	(3)
	ACETYL CYCLOHEXANESULPHONYL PEROXIDE	≤ 82				≥ 12	OP4	-10	0	(3)
3112	DICYCLOHEXYL PEROXYDICARBONATE	> 91 – 100					OP3	+10	+15	(3)
	DIISOPROPYL PEROXYDICARBONATE	> 52 – 100					OP2	-15	-5	(3)
	DI-(2-METHYLBENZOYL) PEROXIDE	≤ 87				≥ 13	OP5	+30	+35	(3)
	<i>tert</i> -AMYL PEROXYPIVALATE	≤ 77		≥ 23			OP5	+10	+15	
3113	<i>tert</i> -BUTYL PEROXYDIETHYLACETATE	≤ 100					OP5	+20	+25	
	<i>tert</i> -BUTYL PEROXY-2-ETHYLHEXANOATE	> 52 – 100					OP6	+20	+25	
	<i>tert</i> -BUTYL PEROXYPIVALATE	> 67 – 77		≥ 23			OP5	0	+10	
	DI- <i>sec</i> -BUTYL PEROXYDICARBONATE	> 52 – 100					OP4	-20	-10	
	DI-(2-ETHYLHEXYL)PEROXYDICARBONATE	> 77 – 100					OP5	-20	-10	
	2,5-DIMETHYL-2,5-DI-(2-ETHYLHEXANOYLPEROXY)-HEXANE	≤ 100					OP5	+20	+25	
	DI- <i>n</i> -PROPYL PEROXYDICARBONATE	≤ 100					OP3	-25	-15	
3114	DI-(4- <i>tert</i> -BUTYL-CYCLOHEXYL)-PEROXYDICARBONATE	≤ 100					OP5	-20	-10	(11)
	DI-(<i>n</i> -PROPYL PEROXYDICARBONATE	≤ 77		≥ 23			OP2			
	DICYCLOHEXYL PEROXYDICARBONATE	≤ 91					OP6	+30	+35	
	DIDECANOYL PEROXIDE	≤ 100				≥ 9	OP5	+10	+15	
	DI- <i>n</i> -OCTANOYL PEROXIDE	≤ 100					OP6	+30	+35	
ORGANIC PEROXIDE, LIQUID, SAMPLE, TEMPERATURE CONTROLLED	≤ 100					OP5	+10	+15		
ORGANIC PEROXIDE, SOLID, SAMPLE, TEMPERATURE CONTROLLED						OP2			(11)	

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Number (generic entry)	ORGANIC PEROXIDE	Concentration (%)	Diluent type A (%)	Diluent type B (%) ⁽¹⁾	Inert solid (%)	Water (%)	Packing method	Control temperature (°C)	Emergency temperature (°C)	Subsidiary risks and remarks
3115	ACETYL CYCLOHEXANESULPHONYL PEROXIDE	≤ 32		≥ 68			OP7	-10	0	
	<i>tert</i> -AMYL PEROXY-2-ETHYLHEXANOATE	≤ 100					OP7	+20	+25	
	<i>tert</i> -AMYL PEROXYNEODECANOATE	≤ 77		≥ 23			OP7	0	+10	
	<i>tert</i> -BUTYL PEROXY-2-ETHYLHEXANOATE + 2,2-DI-(<i>tert</i> -BUTYLPEROXY)BUTANE	≤ 31 + ≤ 36		≥ 33			OP7	+35	+40	
	<i>tert</i> -BUTYL PEROXYISOBUTYRATE	≤ 52		≥ 48			OP7	+15	+20	
	<i>tert</i> -BUTYL PEROXYNEODECANOATE	> 77 – 100					OP7	-5	+5	
	<i>tert</i> -BUTYL PEROXYNEODECANOATE	≤ 77		≥ 23			OP7	0	+10	
	<i>tert</i> -BUTYL PEROXYNEOHEPTANOATE	≤ 77	≥ 23				OP7	0	+10	
	<i>tert</i> -BUTYL PEROXYPIVALATE	> 27 – 67		≥ 33			OP7	0	+10	
	CUMYL PEROXYNEODECANOATE	≤ 77		≥ 23			OP7	-10	0	
	CUMYL PEROXYNEODECANOATE	≤ 87	≥ 13				OP7	-10	0	
	CUMYL PEROXYNEOHEPTANOATE	≤ 77	≥ 23				OP7	-10	0	
	CUMYL PEROXYPIVALATE	≤ 77		≥ 23			OP7	-5	+5	
	DIACETONE ALCOHOL PEROXIDES	≤ 57		≥ 26			OP7	+40	+45	(6)
	DIACETYL PEROXIDE	≤ 27		≥ 73			OP7	+20	+25	(7) (13)
	DI- <i>n</i> -BUTYL PEROXYDICARBONATE	> 27 – 52		≥ 48			OP7	-15	-5	
	DI- <i>sec</i> -BUTYL PEROXYDICARBONATE	≤ 52		≥ 48			OP7	-15	-5	
	DI-(2-ETHOXYETHYL)PEROXYDICARBONATE	≤ 52		≥ 48			OP7	-10	0	
	DI-(2-ETHYLHEXYL)PEROXYDICARBONATE	≤ 77		≥ 23			OP7	-15	-5	
	DIISOBUTYRYL PEROXIDE	≤ 32		≥ 68			OP7	-20	-10	
DIISOPROPYL PEROXYDICARBONATE	≤ 52		≥ 48			OP7	-20	-10		
DIISOPROPYL PEROXYDICARBONATE	≤ 32	≥ 68				OP7	-15	-5		
DI-(3-METHOXYBUTYL) PEROXYDICARBONATE	≤ 52		≥ 48			OP7	-5	+5		
DI-(3-METHYLBENZOYL) PEROXIDE + BENZOYL (3-METHYLBENZOYL) PEROXIDE + DIBENZOYL PEROXIDE	≤ 20 + ≤ 18 + ≤ 4		≥ 58			OP7	+35	+40		
DI-(2-NEODECANOYL)PEROXYISOPROPYL)-BENZENE	≤ 52	≥ 48				OP7	-10	0		
DI-(3,5,5-TRIMETHYLHEXANOYL) PEROXIDE	> 52 – 82	≥ 18				OP7	0	+10		
1-(2-ETHYLHEXANOYL)PEROXY)-1,3-DIMETHYLBUTYL PEROXYPIVALATE	≤ 52	≥ 45	≥ 10			OP7	-20	-10		
<i>tert</i> -HEXYL PEROXYNEODECANOATE	≤ 71	≥ 29				OP7	0	+10		
<i>tert</i> -HEXYL PEROXYPIVALATE	≤ 72		≥ 28			OP7	+10	+15		

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3115 (cont.)	3-HYDROXY-1,1-DIMETHYLBUTYL PEROXYNEODECANOATE	≤ 77	≥ 23				OP7	-5	+5	
	ISOPROPYL <i>sec</i> -BUTYL PEROXYDICARBONATE + DI- <i>sec</i> -BUTYL PEROXYDICARBONATE + DI-ISOPROPYL PEROXYDICARBONATE	≤ 32 + ≤ 15 - 18 + ≤ 12 - 15	≥ 38				OP7	-20	-10	
	METHYLCYCLOHEXANONE PEROXIDE(S)	≤ 67		≥ 33			OP7	+35	+40	
	1,1,3,3-TETRAMETHYLBUTYL PEROXY-2-ETHYLHEXANOATE	≤ 100					OP7	+15	+20	
	1,1,3,3-TETRAMETHYLBUTYL PEROXY-NEODECANOATE	≤ 72		≥ 28			OP7	-5	+5	
	1,1,3,3-TETRAMETHYLBUTYL PEROXYPIVALATE	≤ 77	≥ 23				OP7	0	+10	
3116	DIMYRISTYL PEROXYDICARBONATE	≤ 100					OP7	+20	+25	
	DI- <i>n</i> -NONANOYL PEROXIDE	≤ 100					OP7	0	+10	
	DISUCCINIC ACID PEROXIDE	≤ 72			≥ 28		OP7	+10	+15	
	<i>tert</i> -BUTYL PEROXY-2-ETHYLHEXANOATE	> 32 - 52		≥ 48			OP8	+30	+35	
	DI- <i>n</i> -BUTYL PEROXYDICARBONATE	≤ 27		≥ 73			OP8	-10	0	
3117	<i>tert</i> -BUTYL PEROXYNEOHEPTANOATE	≤ 42 as a stable dispersion in water					OP8	0	+10	
	1,1-DIMETHYL-3-HYDROXYBUTYL PEROXY-NEOHEPTANOATE	≤ 52	≥ 48				OP8	0	+10	
	DIPROPIONYL PEROXIDE	≤ 27		≥ 73			OP8	+15	+20	
	3-HYDROXY-1,1-DIMETHYLBUTYL PEROXY-NEODECANOATE	≤ 52	≥ 48				OP8	-5	+5	
	<i>tert</i> -BUTYL PEROXY-2-ETHYLHEXANOATE	≤ 52			≥ 48		OP8	+20	+25	
	<i>tert</i> -BUTYL PEROXYNEODECANOATE	≤ 42 as a stable dispersion in water (frozen)					OP8	0	+10	
3118	DI- <i>n</i> -BUTYL PEROXYDICARBONATE	≤ 42 as a stable dispersion in water (frozen)					OP8	-15	-5	
	DI-2,4-DICHLOROBENZOYL PEROXIDE	≤ 52 as a paste					OP8	+20	+25	
	PEROXYLAURIC ACID	≤ 100					OP8	+35	+40	
	<i>tert</i> -AMYL PEROXYNEODECANOATE	≤ 47	≥ 53				OP8	0	+10	
3119	<i>tert</i> -BUTYL PEROXY-2-ETHYLHEXANOATE	≤ 32		≥ 68			OP8	+40	+45	
	<i>tert</i> -BUTYL PEROXYNEODECANOATE	≤ 52 as a stable dispersion in water					OP8	0	+10	

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3119 (cont.)	<i>tert</i> -BUTYL PEROXYNEODECANOATE	≤ 32	≥ 68				OP8	0	+10	
	<i>tert</i> -BUTYL PEROXYPIVALATE	≤ 27		≥ 73			OP8	+30	+35	
	CUMYL PEROXYNEODECANOATE	≤ 52 as a stable dispersion in water					OP8	-10	0	
	DI-(4- <i>tert</i> -BUTYL)CYCLOHEXYL) PEROXYDICARBONATE	≤ 42 as a stable dispersion in water					OP8	+30	+35	
	DICETYL PEROXYDICARBONATE	≤ 42 as a stable dispersion in water					OP8	+30	+35	
	DI-CYCLOHEXYL PEROXYDICARBONATE	≤ 42 as a stable dispersion in water					OP8	+15	+20	
	DI-(2-ETHYLHEXYL) PEROXYDICARBONATE	≤ 62 as a stable dispersion in water					OP8	-15	-5	
	DIMYRISTYL PEROXYDICARBONATE	≤ 42 as a stable dispersion in water					OP8	+20	+25	
	DI-(3,5,5-TRIMETHYLHEXANOYL) PEROXIDE	≤ 52 as a stable dispersion in water					OP8	+10	+15	
	DI-(3,5,5-TRIMETHYLHEXANOYL) PEROXIDE	≤ 38	≥ 62				OP8	+20	+25	
	DI-(3,5,5-TRIMETHYLHEXANOYL) PEROXIDE	> 38 – 52	≥ 48				OP8	+10	+15	
	3-HYDROXY-1,1-DIMETHYLBUTYL PEROXYNEODECANOATE	≤ 52 as a stable dispersion in water					OP 8	-5	+5	
	1,1,3,3-TETRAMETHYLBUTYL PEROXYNEODECANOATE	≤ 52 as a stable dispersion in water					OP8	-5	+5	
	3120	DI-(2-ETHYLHEXYL)PEROXYDICARBONATE	≤ 52 as a stable dispersion in water (frozen)					OP8	-15	-5
Exempt	DICETYL PEROXYDICARBONATE	≤ 100					OP8	+30	+35	
Exempt	CYCLOHEXANONE PEROXIDE(S)	≤ 32			≥ 68					(29)
Exempt	DIBENZOYL PEROXIDE	≤ 35			≥ 65					(29)
Exempt	DI-(2- <i>tert</i> -BUTYL)PEROXYISOPROPYL)BENZENE(S)	≤ 42			≥ 58					(29)
Exempt	DI-4-CHLOROBENZOYL PEROXIDE	≤ 32			≥ 68					(29)
Exempt	DICUMYL PEROXIDE	≤ 52			≥ 48					(29)

Remarks

- (1) Diluent type B may always be replaced by diluent type A. The boiling point of diluent type B shall be at least 60°C higher than the SADT of the organic peroxide
- (2) Available oxygen \leq 4.7%
- (3) "EXPLOSIVE" subsidiary risk label required. (Model No. 1, see 5.2.2.2.2)
- (4) Diluent may be replaced by di-*tert*-butyl peroxide
- (5) Available oxygen \leq 9%
- (6) With \leq 9% hydrogen peroxide; available oxygen \leq 10%
- (7) Only non-metallic packagings are allowed
- (8) Available oxygen $>$ 10% and \leq 10.7%, with or without water
- (9) Available oxygen \leq 10%, with or without water
- (10) Available oxygen \leq 8.2%, with or without water
- (11) See 2.5.3.2.5.1
- (12) Up to 2000 kg per receptacle assigned to ORGANIC PEROXIDE TYPE F on the basis of large-scale trials
- (13) "CORROSIVE" subsidiary risk label required (Model No. 8, see 5.2.2.2.2)
- (14) Peroxyacetic acid formulations which fulfil the criteria of 2.5.3.3.2.4
- (15) Peroxyacetic acid formulations which fulfil the criteria of 2.5.3.3.2.5
- (16) Peroxyacetic acid formulations which fulfil the criteria of 2.5.3.3.2.6
- (17) Addition of water to this organic peroxide will decrease its thermal stability
- (18) No "CORROSIVE" subsidiary risk label required for concentrations below 80%
- (19) Mixtures with hydrogen peroxide, water and acid(s)
- (20) With diluent type A, with or without water
- (21) With \geq 25% diluent type A by mass, and in addition ethylbenzene
- (22) With \geq 19% diluent type A by mass, and in addition methyl isobutyl ketone
- (23) With $<$ 6% di-*tert*-butyl peroxide
- (24) With \leq 8% 1-isopropylhydroperoxy-4-isopropylhydroxybenzene
- (25) Diluent type B with boiling point $>$ 110°C
- (26) With $<$ 0.5% hydroperoxides content
- (27) For concentrations more than 56%, "CORROSIVE" subsidiary risk label required (Model No. 8, see 5.2.2.2.2)
- (28) Available active oxygen \leq 7.6% in diluent type A having a 95% boil-off point in the range 200–260°C
- (29) Not subject to the provisions for peroxide, class 5.2
- (30) Diluent type B with boiling point $>$ 130°C
- (31) Active oxygen \leq 6.7%

2.5.3.2.5 Classification of organic peroxides not listed in 2.5.3.2.4, packing instruction IBC520 or portable tank instruction T23 and assignment to a generic entry shall be made by the competent authority of the country of origin on the basis of a test report. Principles applying to the classification of such substances are provided in 2.5.3.3. Test methods and criteria and an example of a report are given in the current edition of the Manual of Tests and Criteria, part II. The statement of approval shall contain the classification and the relevant transport conditions (see 5.4.4.1.3).

2.5.3.2.5.1 Samples of new organic peroxides or new formulations of currently assigned organic peroxides for which complete test data are not available and which are to be transported for further testing or evaluation may be assigned to one of the appropriate entries for ORGANIC PEROXIDE TYPE C provided the following conditions are met:

- .1 the available data indicate that the sample would be no more dangerous than ORGANIC PEROXIDE TYPE B;
- .2 the sample is packaged in accordance with packing method OP2 and the quantity per cargo transport unit is limited to 10 kg; and
- .3 the available data indicate that the control temperature, if any, is sufficiently low to prevent any dangerous decomposition and sufficiently high to prevent any dangerous phase separation.

2.5.3.3 Principles for classification of organic peroxides

Note: This section refers only to those properties of organic peroxides which are decisive for their classification. A flow chart, presenting the classification principles in the form of a graphically arranged scheme of questions concerning the decisive properties together with the possible answers, is given in figure 2.5.1 in chapter 2.5 of the United Nations *Recommendations on the Transport of Dangerous Goods*. These properties shall be determined experimentally. Suitable test methods with pertinent evaluation criteria are given in the Manual of Tests and Criteria, part II.

2.5.3.3.1 Any organic peroxide formulation shall be regarded as possessing explosive properties when, in laboratory testing, the formulation is liable to detonate, to deflagrate rapidly or to show a violent effect when heated under confinement.

- 2.5.3.3.2** The following principles apply to the classification of organic peroxide formulations not listed in 2.5.3.2.4:
- .1 Any organic peroxide formulation which can detonate or deflagrate rapidly, as packaged for transport, is prohibited from transport in that packaging under class 5.2 (defined as ORGANIC PEROXIDE TYPE A);
 - .2 Any organic peroxide formulation possessing explosive properties and which, as packaged for transport, neither detonates nor deflagrates rapidly, but is liable to undergo a thermal explosion in that package, shall bear an “EXPLOSIVE” subsidiary risk label (Model No. 1, see 5.2.2.2.2). Such an organic peroxide may be packaged in amounts of up to 25 kg unless the maximum quantity has to be limited to a lower amount to preclude detonation or rapid deflagration in the package (defined as ORGANIC PEROXIDE TYPE B);
 - .3 Any organic peroxide formulation possessing explosive properties may be transported without an “EXPLOSIVE” subsidiary risk label when the substance as packaged (maximum 50 kg) for transport cannot detonate or deflagrate rapidly or undergo a thermal explosion (defined as ORGANIC PEROXIDE TYPE C);
 - .4 Any organic peroxide formulation which, in laboratory testing:
 - .1 detonates partially, does not deflagrate rapidly and shows no violent effect when heated under confinement; or
 - .2 does not detonate at all, deflagrates slowly and shows no violent effect when heated under confinement; or
 - .3 does not detonate or deflagrate at all and shows a medium effect when heated under confinement is acceptable for transport in packages of not more than 50 kg net mass (defined as ORGANIC PEROXIDE TYPE D);
 - .5 Any organic peroxide formulation which, in laboratory testing, neither detonates nor deflagrates at all and shows low or no effect when heated under confinement is acceptable for transport in packages of not more than 400 kg/450 L (defined as ORGANIC PEROXIDE TYPE E);
 - .6 Any organic peroxide formulation which, in laboratory testing, neither detonates in the cavitated state nor deflagrates at all and shows only a low or no effect when heated under confinement as well as low or no explosive power may be considered for transport in IBCs or tanks (defined as ORGANIC PEROXIDE TYPE F); for additional provisions see 4.1.7 and 4.2.1.13;
 - .7 Any organic peroxide formulation which, in laboratory testing, neither detonates in the cavitated state nor deflagrates at all and shows no effect when heated under confinement nor any explosive power shall be exempted from class 5.2, provided that the formulation is thermally stable (self-accelerating decomposition temperature is 60°C or higher for a 50 kg package) and for liquid formulations diluent type A is used for desensitization (defined as ORGANIC PEROXIDE TYPE G). If the formulation is not thermally stable or a diluent other than type A is used for desensitization, the formulation shall be defined as ORGANIC PEROXIDE TYPE F.

2.5.3.4 Temperature control provisions

2.5.3.4.0 The properties of some organic peroxides require that they be transported under temperature control. Control and emergency temperatures for currently assigned organic peroxides are shown in the list 2.5.3.2.4. The controlled temperature provisions are given in chapter 7.3.7.

2.5.3.4.1 The following organic peroxides shall be subjected to temperature control during transport:

- .1 organic peroxides type B and C with a SADT $\leq 50^{\circ}\text{C}$;
- .2 organic peroxides type D showing a medium effect when heated under confinement with a SADT $\leq 50^{\circ}\text{C}$ or showing a low or no effect when heated under confinement with a SADT $\leq 45^{\circ}\text{C}$; and
- .3 organic peroxides types E and F with a SADT $\leq 45^{\circ}\text{C}$.

2.5.3.4.2 Test methods for determining the SADT are given in the Manual of Tests and Criteria, part II, chapter 28. The test selected shall be conducted in a manner which is representative, both in size and material, of the package to be transported.

2.5.3.4.3 Test methods for determining the flammability are given in the Manual of Tests and Criteria, part III, chapter 32.4. Because organic peroxides may react vigorously when heated, it is recommended to determine their flashpoint using small sample sizes such as described in ISO 3679.

2.5.3.5 Desensitization of organic peroxides

2.5.3.5.1 In order to ensure safety during transport, organic peroxides are in many cases desensitized by organic liquids or solids, inorganic solids or water. Where a percentage of a substance is stipulated, this refers to the percentage by mass, rounded to the nearest whole number. In general, desensitization shall be such that, in case of spillage or fire, the organic peroxide will not concentrate to a dangerous extent.

- 2.5.3.5.2 Unless otherwise stated for the individual organic peroxide formulation, the following definitions apply for diluents used for desensitization:
- .1 Diluents type A are organic liquids which are compatible with the organic peroxide and which have a boiling point of not less than 150°C. Type A diluents may be used for desensitizing all organic peroxides.
 - .2 Diluents type B are organic liquids which are compatible with the organic peroxide and which have a boiling point of less than 150°C but not less than 60°C and a flashpoint of not less than 5°C. Type B diluents may be used for desensitization of all organic peroxides provided that the boiling point is at least 60°C higher than the SADT in a 50 kg package.
- 2.5.3.5.3 Diluents, other than type A or type B, may be added to organic peroxide formulations as listed in 2.5.3.2.4 provided that they are compatible. However, replacement of all or part of a type A or type B diluent by another diluent with differing properties requires that the organic peroxide formulation be re-assessed in accordance with the normal acceptance procedure for class 5.2.
- 2.5.3.5.4 Water may only be used for the desensitization of organic peroxides which are shown in 2.5.3.2.4 or in the statement of approval according to 2.5.3.2.5 as being with water or as a stable dispersion in water.
- 2.5.3.5.5 Organic and inorganic solids may be used for desensitization of organic peroxides provided that they are compatible.
- 2.5.3.5.6 Compatible liquids and solids are those which have no detrimental influence on the thermal stability and hazard type of the organic peroxide formulation.

Chapter 2.6

Class 6 – Toxic and infectious substances

2.6.0 Introductory notes

Note 1: The word “toxic” has the same meaning as “poisonous”.

Note 2: Genetically modified microorganisms which do not meet the definition of a toxic or an infectious substance shall be considered for classification in class 9 and assigned to UN 3245.

Note 3: Toxins from plant, animal or bacterial sources which do not contain any infectious substances, or toxins that are contained in substances which are not infectious substances, shall be considered for classification in class 6.1 and assigned to UN 3172.

2.6.1 Definitions

Class 6 is subdivided into two classes as follows:

Class 6.1 – Toxic substances

These are substances liable either to cause death or serious injury or to harm human health if swallowed or inhaled, or by skin contact.

Class 6.2 – Infectious substances

These are substances known or reasonably expected to contain pathogens. Pathogens are defined as microorganisms (including bacteria, viruses, rickettsiae, parasites, fungi) and other agents such as prions, which can cause disease in humans or animals.

2.6.2 Class 6.1 – Toxic substances

2.6.2.1 Definitions and properties

2.6.2.1.1 *LD₅₀ (median lethal dose) for acute oral toxicity* is the statistically derived single dose of a substance that can be expected to cause death within 14 days in 50 per cent of young adult albino rats when administered by the oral route. The *LD₅₀* value is expressed in terms of mass of test substance per mass of test animal (mg/kg).

2.6.2.1.2 *LD₅₀ for acute dermal toxicity* is that dose of the substance which, administered by continuous contact for 24 hours with the bare skin of the albino rabbit, is most likely to cause death within 14 days in one half of the animals tested. The number of animals tested shall be sufficient to give a statistically significant result and be in conformity with good pharmacological practices. The result is expressed in milligrams per kilogram body mass.

2.6.2.1.3 *LC₅₀ for acute toxicity on inhalation* is that concentration of vapour, mist or dust which, administered by continuous inhalation to both male and female young adult albino rats for one hour, is most likely to cause death within 14 days in one half of the animals tested. A solid substance shall be tested if at least 10% (by mass) of its total mass is likely to be dust in the respirable range, such as the aerodynamic diameter of that particle fraction is 10 microns or less. A liquid substance shall be tested if a mist is likely to be generated in a leakage of the transport containment. For both solid and liquid substances, more than 90% (by mass) of a specimen prepared for inhalation toxicity testing shall be in the respirable range as defined above. The result is expressed in milligrams per litre of air for dusts and mists or in millilitres per cubic metre of air (parts per million) for vapours.

2.6.2.1.4 Properties

.1 The dangers of poisoning which are inherent in these substances depend upon contact with the human body, that is by inhalation of vapours by unsuspecting persons at some distance from the cargo or the immediate dangers of physical contact with the substance. These have been considered in the context of the probability of accident occurring during transport by sea.

- .2 Nearly all toxic substances evolve toxic gases when involved in a fire or when heated to decomposition.
- .3 A substance specified as “stabilized” shall not be transported in an unstabilized condition.

2.6.2.2 Assignment of packing groups to toxic substances

2.6.2.2.1 Toxic substances have for packing purposes been apportioned among packing groups according to the degree of their toxic hazards in transport:

- .1 Packing group I: substances and preparations presenting a high toxicity risk;
- .2 Packing group II: substances and preparations presenting a medium toxicity risk;
- .3 Packing group III: substances and preparations presenting a low toxicity risk.

2.6.2.2.2 In making this grouping, account has been taken of human experience in instances of accidental poisoning, and of special properties possessed by any individual substance, such as liquid state, high volatility, any special likelihood of penetration, and special biological effects.

2.6.2.2.3 In the absence of human experience, the grouping has been based on data obtained from animal experiments. Three possible routes of administration have been examined. These routes are exposure through:

- oral ingestion;
- dermal contact; and
- inhalation of dusts, mists or vapours.

2.6.2.2.3.1 For appropriate animal test data for the various routes of exposure, see 2.6.2.1. When a substance exhibits a different order of toxicity by two or more routes of administration, the highest degree of danger indicated by the tests has been used in assigning the packing group.

2.6.2.2.4 The criteria to be applied for grouping a substance according to the toxicity it exhibits by all three routes of administration are presented in the following paragraphs.

2.6.2.2.4.1 The grouping criteria for the oral and dermal routes as well as for inhalation of dusts and mists are shown in the following table:

**Grouping criteria for administration through oral ingestion,
dermal contact and inhalation of dusts and mists**

Packing group	Oral toxicity LD ₅₀ (mg/kg)	Dermal toxicity LD ₅₀ (mg/kg)	Inhalation toxicity by dusts and mists LC ₅₀ (mg/L)
I	≤ 5.0	≤ 50	≤ 0.2
II	> 5.0 and ≤ 50	> 50 and ≤ 200	> 0.2 and ≤ 2.0
III*	> 50 and ≤ 300	> 200 and ≤ 1000	> 2.0 and ≤ 4.0

* Tear gas substances shall be included in packing group II even if their toxicity data correspond to packing group III values.

Note: Substances meeting the criteria of class 8 and with an inhalation toxicity of dusts and mists (LC₅₀) leading to packing group I are only accepted for an allocation to class 6.1 if the toxicity through oral ingestion or dermal contact is at least in the range of packing group I or II. Otherwise an allocation to class 8 is made when appropriate (see 2.8.2.3).

2.6.2.2.4.2 The criteria for inhalation toxicity of dusts and mists in 2.6.2.2.4.1 are based on LC₅₀ data relating to one hour exposures, and where such information is available it shall be used. However, where only LC₅₀ data relating to 4-hour exposures to dusts and mists are available, such figures can be multiplied by four and the product substituted in the above criteria, i.e. LC₅₀ (4 hours) × 4 is considered the equivalent of LC₅₀ (1 hour).

2.6.2.2.4.3 Liquids having toxic vapours shall be assigned to the following packing groups, where “V” is the saturated vapour concentration in mL/m³ air at 20°C and standard atmospheric pressure:

Packing group I: if $V \geq 10 LC_{50}$ and $LC_{50} \leq 1,000 \text{ mL/m}^3$.

Packing group II: if $V \geq LC_{50}$ and $LC_{50} \leq 3,000 \text{ mL/m}^3$, and do not meet the criteria for packing group I.

Packing group III: if $V \geq \frac{1}{5} LC_{50}$ and $LC_{50} \leq 5,000 \text{ mL/m}^3$, and do not meet the criteria for packing groups I or II.

Note: Tear gas substances shall be included in packing group II even if their toxicity data correspond to packing group III values.

2.6.2.2.4.4 In figure 2-3 the criteria according to 2.6.2.2.4.3 are expressed in graphical form, as an aid to easy classification. Because of approximations inherent in the use of graphs, substances falling on or near packing group borderlines shall be checked using numerical criteria.

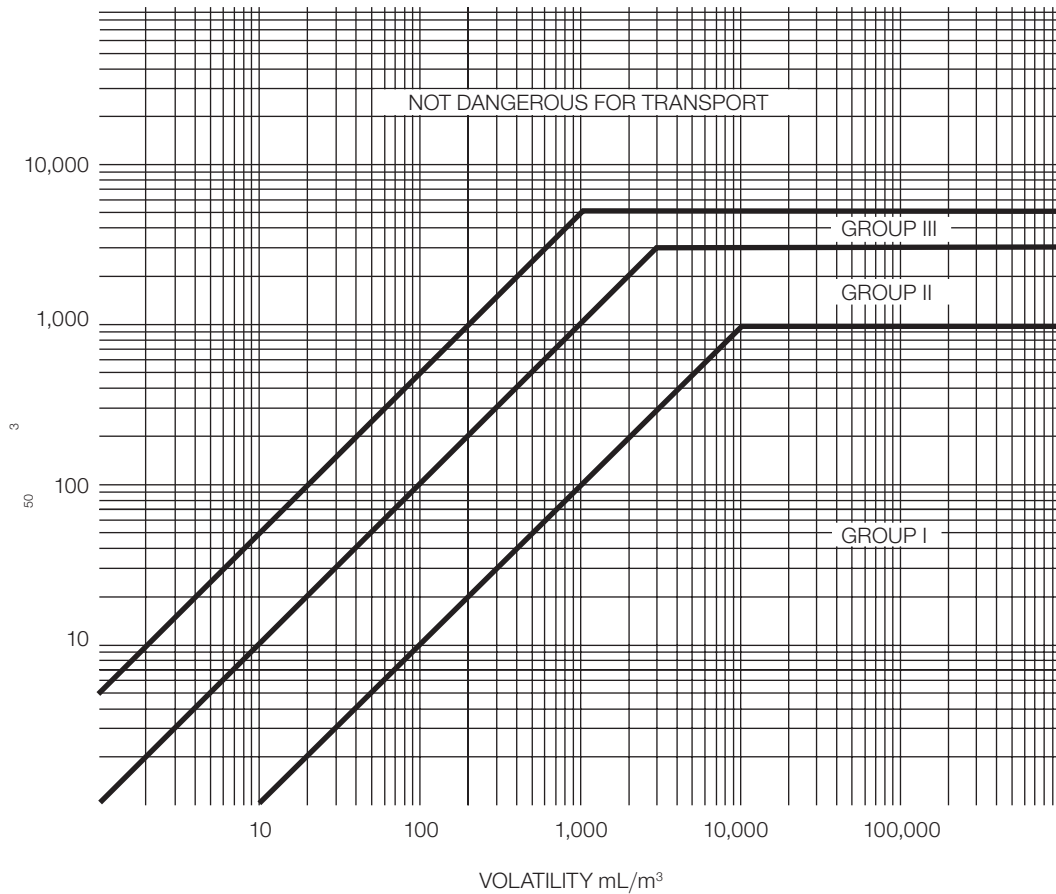


Figure 2-3 – Inhalation toxicity: packing group borderlines

2.6.2.2.4.5 The criteria for inhalation toxicity of vapours in 2.6.2.2.4.3 are based on LC₅₀ data relating to one hour exposures, and where such information is available it shall be used. However, where only LC₅₀ data relating to 4-hour exposures to the vapours are available, such figures can be multiplied by two and the product substituted in the above criteria, i.e. LC₅₀ (4 hours) × 2 is considered the equivalent of LC₅₀ (1 hour).

2.6.2.2.4.6 Mixtures of liquids that are toxic by inhalation shall be assigned to packing groups according to 2.6.2.2.4.7 or 2.6.2.2.4.8.

2.6.2.2.4.7 If LC₅₀ data are available for each of the toxic substances comprising a mixture, the packing group may be determined as follows:

.1 Estimate the LC₅₀ of the mixture using the formula:

$$LC_{50} (\text{mixture}) = \frac{1}{\sum_{i=1}^n \left(\frac{f_i}{LC_{50i}} \right)}$$

where: f_i = mole fraction of the i^{th} component substance of the mixture

LC_{50i} = mean lethal concentration of the i^{th} component substance in mL/m³.

.2 Estimate the volatility of each component substance comprising the mixture using the formula:

$$V_i = \left(\frac{P_i \times 10^6}{101.3} \right) \text{mL/m}^3$$

where: P_i = the partial pressure of the i^{th} component substance in kPa at 20°C and one atmosphere pressure.

.3 Calculate the ratio of the volatility to the LC₅₀ using the formula:

$$R = \sum_{i=1}^n \left(\frac{V_i}{LC_{50i}} \right)$$

- .4 Using the calculated values of LC_{50} (mixture) and R , the packing group for the mixture is determined:
- Packing group I: $R \geq 10$ and LC_{50} (mixture) $\leq 1,000$ mL/m³.
- Packing group II: $R \geq 1$ and LC_{50} (mixture) $\leq 3,000$ mL/m³ and not meeting criteria for packing group I.
- Packing group III: $R \geq \frac{1}{5}$ and LC_{50} (mixture) $\leq 5,000$ mL/m³ and not meeting criteria for packing groups I or II.

2.6.2.2.4.8 In the absence of LC_{50} data on the toxic constituent substances, the mixture may be assigned a packing group based on the following simplified threshold toxicity tests. When these threshold tests are used, the most restrictive packing group shall be determined and used for transporting the mixture.

- .1 A mixture is assigned to packing group I only if it meets both of the following criteria:
- A sample of the liquid mixture is vaporized and diluted with air to create a test atmosphere of 1,000 mL/m³ vaporized mixture in air. Ten albino rats (five male and five female) are exposed to the test atmosphere for one hour and observed for 14 days. If five or more of the animals die within the 14-day observation period, the mixture is presumed to have an LC_{50} equal to or less than 1,000 mL/m³.
 - A sample of the vapour in equilibrium with the liquid mixture at 20°C is diluted with 9 equal volumes of air to form a test atmosphere. Ten albino rats (five male and five female) are exposed to the test atmosphere for one hour and observed for 14 days. If five or more of the animals die within the 14-day observation period, the mixture is presumed to have a volatility equal to or greater than 10 times the mixture LC_{50} .
- .2 A mixture is assigned to packing group II only if it meets both of the following criteria, and the mixture does not meet the criteria for packing group I:
- A sample of the liquid mixture is vaporized and diluted with air to create a test atmosphere of 3,000 mL/m³ vaporized mixture in air. Ten albino rats (five male and five female) are exposed to the test atmosphere for one hour and observed for 14 days. If five or more of the animals die within the 14-day observation period, the mixture is presumed to have an LC_{50} equal to or less than 3,000 mL/m³.
 - A sample of the vapour in equilibrium with the liquid mixture at 20°C is used to form a test atmosphere. Ten albino rats (five male and five female) are exposed to the test atmosphere for one hour and observed for 14 days. If five or more of the animals die within the 14-day observation period, the mixture is presumed to have a volatility equal to or greater than the mixture LC_{50} .
- .3 A mixture is assigned to packing group III only if it meets both of the following criteria, and the mixture does not meet the criteria for packing groups I or II:
- A sample of the liquid mixture is vaporized and diluted with air to create a test atmosphere of 5,000 mL/m³ vaporized mixture in air. Ten albino rats (five male and five female) are exposed to the test atmosphere for one hour and observed for 14 days. If five or more of the animals die within the 14-day observation period, the mixture is presumed to have an LC_{50} equal to or less than 5,000 mL/m³.
 - The vapour pressure of the liquid mixture is measured and if the vapour concentration is equal to or greater than 1,000 mL/m³, the mixture is presumed to have a volatility equal to or greater than $\frac{1}{5}$ the mixture LC_{50} .

2.6.2.3 Methods for determining oral and dermal toxicity of mixtures

2.6.2.3.1 When classifying and assigning the appropriate packing group to mixtures in class 6.1, in accordance with the oral and dermal toxicity criteria in 2.6.2.2, it is necessary to determine the acute LD_{50} of the mixture.

2.6.2.3.2 If a mixture contains only one active substance, and the LD_{50} of that constituent is known, in the absence of reliable acute oral and dermal toxicity data on the actual mixture to be transported, the oral or dermal LD_{50} may be obtained by the following method:

$$LD_{50} \text{ value of preparation} = \frac{LD_{50} \text{ value of active substance} \times 100}{\text{percentage of active substance by mass}}$$

2.6.2.3.3 If a mixture contains more than one active constituent, there are three possible approaches that may be used to determine the oral or dermal LD_{50} of the mixture. The preferred method is to obtain reliable acute oral and dermal toxicity data on the actual mixture to be transported. If reliable, accurate data are not available, then either of the following methods may be performed:

- .1 Classify the formulation according to the most hazardous constituent of the mixture as if that constituent were present in the same concentration as the total concentration of all active constituents; or

.2 Apply the formula:

$$\frac{C_A}{T_A} + \frac{C_B}{T_B} + \dots + \frac{C_Z}{T_Z} = \frac{100}{T_M}$$

where:

C = the % concentration of constituent A, B ... Z in the mixture;

T = the oral LD₅₀ value of constituent A, B ... Z;

T_M = the oral LD₅₀ value of the mixture.

Note: This formula can also be used for dermal toxicities provided that this information is available on the same species for all constituents. The use of this formula does not take into account any potentiation or protective phenomena.

2.6.2.4 Classification of pesticides

2.6.2.4.1 All active pesticide substances and their preparations for which the LC₅₀ and/or LD₅₀ values are known and which are classified in class 6.1 shall be classified under appropriate packing groups in accordance with the criteria given in 2.6.2.2. Substances and preparations which are characterized by subsidiary risks shall be classified according to the precedence of hazard table in 2.0.3 with the assignment of appropriate packing groups.

2.6.2.4.2 If the oral or dermal LD₅₀ value for a pesticide preparation is not known, but the LD₅₀ value of its active substance(s) is known, the LD₅₀ value for the preparation may be obtained by applying the procedures in 2.6.2.3.

Note: LD₅₀ toxicity data for a number of common pesticides may be obtained from the most current edition of "The WHO Recommended Classification of Pesticides by Hazard and Guidelines to Classification", available from the International Programme on Chemical Safety, World Health Organization (WHO), 1211 Geneva 27, Switzerland. While that publication may be used as a source of LD₅₀ data for pesticides, its classification system shall not be used for purposes of transport classification of, or assignment of packing groups to, pesticides, which shall be in accordance with the provisions of this Code.

2.6.2.4.3 The proper shipping name used in the transport of the pesticide shall be selected from those referenced on the basis of the active ingredient, of the physical state of the pesticide and any subsidiary risks which it may exhibit.

2.6.2.5 Substances not accepted for transport

Chemically unstable substances of class 6.1 shall not be accepted for transport unless the necessary precautions have been taken to prevent the possibility of a dangerous decomposition or polymerization under normal conditions of transport. For the precautions necessary to prevent polymerization, see special provision 386 of chapter 3.3. To this end particular care shall be taken to ensure that receptacles and tanks do not contain any substances liable to promote these reactions.

2.6.3 Class 6.2 – Infectious substances

2.6.3.1 Definitions

For the purposes of this Code:

2.6.3.1.1 *Infectious substances* are substances which are known or are reasonably expected to contain pathogens. Pathogens are defined as micro-organisms (including bacteria, viruses, rickettsiae, parasites, fungi) and other agents such as prions, which can cause disease in humans or animals.

2.6.3.1.2 *Biological products* are those products derived from living organisms which are manufactured and distributed in accordance with the requirements of appropriate national authorities, which may have special licensing requirements, and are used either for prevention, treatment, or diagnosis of disease in humans or animals, or for development, experimental or investigation purposes related thereto. They include, but are not limited to, finished or unfinished products such as vaccines.

2.6.3.1.3 *Cultures* are the result of a process by which pathogens are intentionally propagated. This definition does not include human or animal patient specimens as defined in 2.6.3.1.4.

2.6.3.1.4 *Patient specimens* are human or animal materials, collected directly from humans or animals, including, but not limited to, excreta, secretions, blood and its components, tissue and tissue fluid swabs, and body parts being transported for purposes such as research, diagnosis, investigational activities, disease treatment and prevention.

2.6.3.1.5 [Reserved]

2.6.3.1.6 *Medical or clinical wastes* are wastes derived from the medical treatment of animals or humans or from bio-research.

2.6.3.2 Classification of infectious substances

2.6.3.2.1 Infectious substances shall be classified in class 6.2 and assigned to UN 2814, UN 2900, UN 3291 or UN 3373, as appropriate.

2.6.3.2.2 Infectious substances are divided into the following categories:

2.6.3.2.2.1 *Category A*: An infectious substance which is transported in a form that, when exposure to it occurs, is capable of causing permanent disability, life-threatening or fatal disease in otherwise healthy humans or animals. Indicative examples of substances that meet these criteria are given in the table in this paragraph.

Note: An exposure occurs when an infectious substance is released outside the protective packaging, resulting in physical contact with humans or animals.

.1 Infectious substances meeting these criteria which cause disease in humans or in both humans and animals shall be assigned to UN 2814. Infectious substances which cause disease only in animals shall be assigned to UN 2900.

.2 Assignment to UN 2814 or UN 2900 shall be based on the known medical history and symptoms of the source, human or animal, endemic local conditions, or professional judgement concerning individual circumstances of the human or animal source.

Note 1: The proper shipping name for UN 2814 is INFECTIOUS SUBSTANCE, AFFECTING HUMANS. The proper shipping name for UN 2900 is INFECTIOUS SUBSTANCE, AFFECTING ANIMALS only.

Note 2: The following table is not exhaustive. Infectious substances, including new or emerging pathogens, which do not appear in the table but which meet the same criteria shall be assigned to category A. In addition, if there is doubt as to whether or not a substance meets the criteria it shall be included in category A.

Note 3: In the following table, the microorganism names written in italics are bacteria, mycoplasmas, rickettsiae or fungi.

Indicative examples of infectious substances included in category A in any form unless otherwise indicated (2.6.3.2.2.1)

UN number and proper shipping name	Microorganism
UN 2814 Infectious substance, affecting humans	<i>Bacillus anthracis</i> (cultures only) <i>Brucella abortus</i> (cultures only) <i>Brucella melitensis</i> (cultures only) <i>Brucella suis</i> (cultures only) <i>Burkholderia mallei</i> – <i>Pseudomonas mallei</i> – Glanders (cultures only) <i>Burkholderia pseudomallei</i> – <i>Pseudomonas pseudomallei</i> (cultures only) <i>Chlamydia psittaci</i> – avian strains (cultures only) <i>Clostridium botulinum</i> (cultures only) <i>Coccidioides immitis</i> (cultures only) <i>Coxiella burnetii</i> (cultures only) Crimean-Congo hemorrhagic fever virus Dengue virus (cultures only) Eastern equine encephalitis virus (cultures only) <i>Escherichia coli</i> , verotoxigenic (cultures only) Ebola virus Flexal virus <i>Francisella tularensis</i> (cultures only) Guanarito virus Hantaan virus

RESOLUTION MSC.406(96) (adopted on 13 May 2016)
 AMENDMENTS TO THE INTERNATIONAL MARITIME
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UN number and proper shipping name	Microorganism
UN 2814 Infectious substance, affecting humans <i>(cont.)</i>	Hantavirus causing hemorrhagic fever with renal syndrome Hendra virus Hepatitis B virus (cultures only) Herpes B virus (cultures only) Human immunodeficiency virus (cultures only) Highly pathogenic avian influenza virus (cultures only) Japanese Encephalitis virus (cultures only) Junin virus Kyasanur Forest disease virus Lassa virus Machupo virus Marburg virus Monkeypox virus <i>Mycobacterium tuberculosis</i> (cultures only) Nipah virus Omsk hemorrhagic fever virus Poliovirus (cultures only) Rabies virus (cultures only) <i>Rickettsia prowazekii</i> (cultures only) <i>Rickettsia rickettsii</i> (cultures only) Rift Valley fever virus (cultures only) Russian spring–summer encephalitis virus (cultures only) Sabia virus <i>Shigella dysenteriae</i> type 1 (cultures only) Tick-borne encephalitis virus (cultures only) Variola virus Venezuelan equine encephalitis virus (cultures only) West Nile virus (cultures only) Yellow fever virus (cultures only) <i>Yersinia pestis</i> (cultures only)
UN 2900 Infectious substance, affecting animals only	African swine fever virus (cultures only) Avian paramyxovirus Type 1 – Velogenic Newcastle disease virus (cultures only) Classical swine fever virus (cultures only) Foot and mouth disease virus (cultures only) Lumpy skin disease virus (cultures only) <i>Mycoplasma mycoides</i> – Contagious bovine pleuropneumonia (cultures only) Peste des petits ruminants virus (cultures only) Rinderpest virus (cultures only) Sheep-pox virus (cultures only) Goatpox virus (cultures only) Swine vesicular disease virus (cultures only) Vesicular stomatitis virus (cultures only)

2.6.3.2.2.2 *Category B*: An infectious substance which does not meet the criteria for inclusion in category A. Infectious substances in category B shall be assigned to UN 3373.

Note: The proper shipping name for UN 3373 is BIOLOGICAL SUBSTANCE, CATEGORY B.

2.6.3.2.3 Exemptions

2.6.3.2.3.1 Substances which do not contain infectious substances or substances which are unlikely to cause disease in humans or animals are not subject to the provisions of this Code, unless they meet the criteria for inclusion in another class.

2.6.3.2.3.2 Substances containing microorganisms which are non-pathogenic to humans or animals are not subject to the provisions of this Code unless they meet the criteria for inclusion in another class.

2.6.3.2.3.3 Substances in a form that any present pathogens have been neutralized or inactivated such that they no longer pose a health risk are not subject to the provisions of this Code unless they meet the criteria for inclusion in another class.

Note: Medical equipment which has been drained of free liquid is deemed to meet the requirements of this paragraph and is not subject to the provisions of this Code.

- 2.6.3.2.3.4 Environmental samples (including food and water samples) which are not considered to pose a significant risk of infection are not subject to the provisions of this Code unless they meet the criteria for inclusion in another class.
- 2.6.3.2.3.5 Dried blood spots, collected by applying a drop of blood onto absorbent material, are not subject to the provisions of this Code.
- 2.6.3.2.3.6 Faecal occult blood screening samples are not subject to the provisions of this Code.
- 2.6.3.2.3.7 Blood or blood components which have been collected for the purposes of transfusion or for the preparation of blood products to be used for transfusion or transplantation and any tissues or organs intended for use in transplantation as well as samples drawn in connection with such purposes are not subject to the provisions of this Code.
- 2.6.3.2.3.8 Human or animal specimens for which there is minimal likelihood that pathogens are present are not subject to the provisions of this Code if the specimen is transported in a packaging which will prevent any leakage and which is marked with the words "EXEMPT HUMAN SPECIMEN" or "EXEMPT ANIMAL SPECIMEN", as appropriate. The packaging should meet the following conditions:

- .1 The packaging should consist of three components:
 - .1 a leak-proof primary receptacle(s);
 - .2 a leak-proof secondary packaging; and
 - .3 an outer packaging of adequate strength for its capacity, mass and intended use, and with at least one surface having minimum dimensions of 100 mm × 100 mm.
- .2 For liquids, absorbent material in sufficient quantity to absorb the entire contents should be placed between the primary receptacle(s) and the secondary packaging so that, during transport, any release or leak of a liquid substance will not reach the outer packaging and will not compromise the integrity of the cushioning material.
- .3 When multiple fragile primary receptacles are placed in a single secondary packaging, they should be either individually wrapped or separated to prevent contact between them.

Note: An element of professional judgement is required to determine if a substance is exempt under this paragraph. That judgement should be based on the known medical history, symptoms and individual circumstances of the source, human or animal, and endemic local conditions. Examples of specimens which may be transported under this paragraph include the blood or urine tests to monitor cholesterol levels, blood glucose levels, hormone levels, or prostate specific antibodies (PSA); those required to monitor organ function such as heart, liver or kidney function for humans or animals with non-infectious diseases, or therapeutic drug monitoring; those conducted for insurance or employment purposes and are intended to determine the presence of drugs or alcohol; pregnancy test; biopsies to detect cancer; and antibody detection in humans or animals in the absence of any concern for infection (e.g. evaluation of vaccine-induced immunity, diagnosis of autoimmune disease, etc.).

- 2.6.3.2.3.9 Except for:
- .1 medical waste (UN 3291);
 - .2 medical devices or equipment contaminated with or containing infectious substances in category A (UN 2814 or UN 2900); and
 - .3 medical devices or equipment contaminated with or containing other dangerous goods that meet the definition of another hazard class,

medical devices or equipment potentially contaminated with or containing infectious substances which are being transported for disinfection, cleaning, sterilization, repair, or equipment evaluation are not subject to the provisions of this Code if packed in packagings designed and constructed in such a way that, under normal conditions of transport, they cannot break, be punctured or leak their contents. Packagings shall be designed to meet the construction requirements listed in 6.1.4 or 6.6.4.

These packagings shall meet the general packing requirements of 4.1.1.1 and 4.1.1.2 and be capable of retaining the medical devices and equipment when dropped from a height of 1.2 m.

The packagings shall be marked "USED MEDICAL DEVICE" or "USED MEDICAL EQUIPMENT". When using overpacks or unit loads these shall be marked in the same way, except when the inscription remains visible.

2.6.3.3 Biological products

- 2.6.3.3.1 For the purposes of this Code, biological products are divided into the following groups:

- .1 those which are manufactured and packaged in accordance with the requirements of appropriate national authorities and transported for the purposes of final packaging or distribution, and use for personal health care by medical professionals or individuals. Substances in this group are not subject to the provisions of this Code;
- .2 those which do not fall under .1 and are known or reasonably believed to contain infectious substances and which meet the criteria for inclusion in category A or category B. Substances in this group shall be assigned to UN 2814, UN 2900 or UN 3373, as appropriate.

Note: Some licensed biological products may present a biohazard only in certain parts of the world. Competent authorities may require that such biological products comply with local requirements for infectious substances or may impose other restrictions.

2.6.3.4 Genetically modified microorganisms and organisms

2.6.3.4.1 Genetically modified microorganisms not meeting the definition of infectious substance shall be classified in accordance with chapter 2.9.

2.6.3.5 Medical or clinical wastes

2.6.3.5.1 Medical or clinical wastes containing category A infectious substances shall be assigned to UN 2814 or UN 2900, as appropriate. Medical or clinical wastes containing infectious substances in category B shall be assigned to UN 3291.

2.6.3.5.2 Medical or clinical wastes which are reasonably believed to have a low probability of containing infectious substances shall be assigned to UN 3291. For the assignment, international, regional or national waste catalogues may be taken into account.

Note: The proper shipping name for UN 3291 is CLINICAL WASTE, UNSPECIFIED, N.O.S. or (BIO) MEDICAL WASTE, N.O.S. or REGULATED MEDICAL WASTE, N.O.S.

2.6.3.5.3 Decontaminated medical or clinical wastes which previously contained infectious substances are not subject to the provisions of this Code unless they meet the criteria for inclusion in another class.

2.6.3.6 Infected animals

2.6.3.6.1 Unless an infectious substance cannot be consigned by any other means, live animals shall not be used to consign such a substance. A live animal which has been intentionally infected and is known or suspected to contain an infectious substance shall only be transported under terms and conditions approved by the competent authority.

2.6.3.6.2 Animal material affected by pathogens of category A or which would be assigned to category A in cultures only, shall be assigned to UN 2814 or UN 2900 as appropriate. Animal material affected by pathogens of category B other than those which would be assigned to category A if they were in cultures shall be assigned to UN 3373.

Chapter 2.7

Class 7 – Radioactive material

Note: For class 7, the type of packaging may have a decisive effect on classification.

2.7.1 Definitions

2.7.1.1 *Radioactive material* means any material containing radionuclides where both the activity concentration and the total activity in the consignment exceed the values specified in 2.7.2.2.1 to 2.7.2.2.6.

2.7.1.2 Contamination

Contamination means the presence of a radioactive substance on a surface in quantities in excess of 0.4 Bq/cm² for beta and gamma emitters and low-toxicity alpha emitters, or 0.04 Bq/cm² for all other alpha emitters.

Non-fixed contamination means contamination that can be removed from a surface during routine conditions of transport.

Fixed contamination means contamination other than non-fixed contamination.

2.7.1.3 Definitions of specific terms

A_1 and A_2

A_1 means the activity value of special form radioactive material which is listed in the table in 2.7.2.2.1 or derived in 2.7.2.2.2 and is used to determine the activity limits for the provisions of this Code.

A_2 means the activity value of radioactive material, other than special form radioactive material, which is listed in the table in 2.7.2.2.1 or derived in 2.7.2.2.2 and is used to determine the activity limits for the provisions of this Code.

Fissile nuclides means uranium-233, uranium-235, plutonium-239 and plutonium-241. *Fissile material* means a material containing any of the fissile nuclides. Excluded from the definition of fissile material are the following:

- .1 natural uranium or depleted uranium which is unirradiated;
- .2 natural uranium or depleted uranium which has been irradiated in thermal reactors only;
- .3 material with fissile nuclides less than a total of 0.25 g;
- .4 any combination of .1, .2 and/or .3.

These exclusions are only valid if there is no other material with fissile nuclides in the package or in the consignment if shipped unpackaged.

Low dispersible radioactive material means either a solid radioactive material or a solid radioactive material in a sealed capsule, that has limited dispersibility and is not in powder form.

Low specific activity (LSA) material means radioactive material which by its nature has a limited specific activity, or radioactive material for which limits of estimated average specific activity apply. External shielding materials surrounding the LSA material shall not be considered in determining the estimated average specific activity.

Low toxicity alpha emitters are: natural uranium; depleted uranium; natural thorium; uranium-235 or uranium-238; thorium-232; thorium-228 and thorium-230 when contained in ores or physical and chemical concentrates; or alpha emitters with a half-life of less than 10 days.

Specific activity of a radionuclide means the activity per unit mass of that nuclide. The specific activity of a material shall mean the activity per unit mass of the material in which the radionuclides are essentially uniformly distributed.

Special form radioactive material means either:

- .1 an indispersible solid radioactive material; or
- .2 a sealed capsule containing radioactive material.

Surface contaminated object (SCO) means a solid object which is not itself radioactive but which has radioactive material distributed on its surface.

Unirradiated thorium means thorium containing not more than 10^{-7} g of uranium-233 per gram of thorium-232.

Unirradiated uranium means uranium containing not more than 2×10^3 Bq of plutonium per gram of uranium-235, not more than 9×10^6 Bq of fission products per gram of uranium-235 and not more than 5×10^{-3} g of uranium-236 per gram of uranium-235.

Uranium – natural, depleted, enriched means the following:

Natural uranium means uranium (which may be chemically separated) containing the naturally occurring distribution of uranium isotopes (approximately 99.28% uranium-238, and 0.72% uranium-235 by mass).

Depleted uranium means uranium containing a lesser mass percentage of uranium-235 than in natural uranium.

Enriched uranium means uranium containing a greater mass percentage of uranium-235 than 0.72%.

In all cases, a very small mass percentage of uranium-234 is present.

2.7.2 Classification

2.7.2.1 General provisions

2.7.2.1.1 Radioactive material shall be assigned to one of the UN numbers specified in table 2.7.2.1.1, in accordance with 2.7.2.4 and 2.7.2.5, taking into account the material characteristics determined in 2.7.2.3.

Table 2.7.2.1.1 – Assignment of UN numbers

UN numbers	Proper shipping name ^a and description
Excepted packages (1.5.1.5)	
2908	RADIOACTIVE MATERIAL, EXCEPTED PACKAGE – EMPTY PACKAGING
2909	RADIOACTIVE MATERIAL, EXCEPTED PACKAGE – ARTICLES MANUFACTURED FROM NATURAL URANIUM or DEPLETED URANIUM or NATURAL THORIUM
2910	RADIOACTIVE MATERIAL, EXCEPTED PACKAGE – LIMITED QUANTITY OF MATERIAL
2911	RADIOACTIVE MATERIAL, EXCEPTED PACKAGE – INSTRUMENTS or ARTICLES
3507	URANIUM HEXAFLUORIDE, RADIOACTIVE MATERIAL, EXCEPTED PACKAGE less than 0.1 kg per package, non-fissile or fissile-excepted ^{b, c}
Low specific activity radioactive material (2.7.2.3.1)	
2912	RADIOACTIVE MATERIAL, LOW SPECIFIC ACTIVITY (LSA-I), non-fissile or fissile-excepted ^b
3321	RADIOACTIVE MATERIAL, LOW SPECIFIC ACTIVITY (LSA-II), non-fissile or fissile-excepted ^b
3322	RADIOACTIVE MATERIAL, LOW SPECIFIC ACTIVITY (LSA-III), non-fissile or fissile-excepted ^b
3324	RADIOACTIVE MATERIAL, LOW SPECIFIC ACTIVITY (LSA-II), FISSILE
3325	RADIOACTIVE MATERIAL, LOW SPECIFIC ACTIVITY (LSA-III), FISSILE
Surface contaminated objects (2.7.2.3.2)	
2913	RADIOACTIVE MATERIAL, SURFACE CONTAMINATED OBJECTS (SCO-I or SCO-II), non-fissile or fissile-excepted ^b
3326	RADIOACTIVE MATERIAL, SURFACE CONTAMINATED OBJECTS (SCO-I or SCO-II), FISSILE
Type A packages (2.7.2.4.4)	
2915	RADIOACTIVE MATERIAL, TYPE A PACKAGE, non-special form, non-fissile or fissile-excepted ^b
3327	RADIOACTIVE MATERIAL, TYPE A PACKAGE, FISSILE, non-special form
3332	RADIOACTIVE MATERIAL, TYPE A PACKAGE, SPECIAL FORM, non-fissile or fissile-excepted ^b
3333	RADIOACTIVE MATERIAL, TYPE A PACKAGE, SPECIAL FORM, FISSILE
Type B(U) package (2.7.2.4.6)	
2916	RADIOACTIVE MATERIAL, TYPE B(U) PACKAGE, non-fissile or fissile-excepted ^b
3328	RADIOACTIVE MATERIAL, TYPE B(U) PACKAGE, FISSILE

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UN numbers	Proper shipping name ^a and description
Type B(M) package (2.7.2.4.6)	
2917	RADIOACTIVE MATERIAL, TYPE B(M) PACKAGE, non-fissile or fissile-excepted ^b
3329	RADIOACTIVE MATERIAL, TYPE B(M) PACKAGE, FISSILE
Type C package (2.7.2.4.6)	
3323	RADIOACTIVE MATERIAL, TYPE C PACKAGE, non-fissile or fissile-excepted ^b
3330	RADIOACTIVE MATERIAL, TYPE C PACKAGE, FISSILE
Special arrangement (2.7.2.5)	
2919	RADIOACTIVE MATERIAL, TRANSPORTED UNDER SPECIAL ARRANGEMENT, non-fissile or fissile-excepted ^b
3331	RADIOACTIVE MATERIAL, TRANSPORTED UNDER SPECIAL ARRANGEMENT, FISSILE
Uranium hexafluoride (2.7.2.4.5)	
2977	RADIOACTIVE MATERIAL, URANIUM HEXAFLUORIDE, FISSILE
2978	RADIOACTIVE MATERIAL, URANIUM HEXAFLUORIDE, non-fissile or fissile-excepted ^b
3507	URANIUM HEXAFLUORIDE, RADIOACTIVE MATERIAL, EXCEPTED PACKAGE less than 0.1 kg per package, non-fissile or fissile-excepted ^{b, c}

^a The proper shipping name is found in the column “Proper shipping name and description” and is restricted to that part shown in capital letters. In the cases of UN Nos. 2909, 2911, 2913 and 3326, where alternative proper shipping names are separated by the word “or”, only the relevant proper shipping name shall be used.

^b The term “fissile-excepted” refers only to material excepted under 2.7.2.3.5.

^c For UN 3507, see also special provision 369 in chapter 3.3.

2.7.2.2 Determination of activity level

2.7.2.2.1 The following basic values for individual radionuclides are given in table 2.7.2.2.1:

- .1 A_1 and A_2 in TBq;
- .2 Activity concentration limits for exempt material in Bq/g; and
- .3 Activity limits for exempt consignments in Bq.

Table 2.7.2.2.1 – Basic radionuclides values for individual radionuclides

Radionuclide (atomic number)	A_1 (TBq)	A_2 (TBq)	Activity concentration limit for exempt material (Bq/g)	Activity limit for an exempt consignment (Bq)
Actinium (89)				
Ac-225 (a)	8×10^{-1}	6×10^{-3}	1×10^1	1×10^4
Ac-227 (a)	9×10^{-1}	9×10^{-5}	1×10^{-1}	1×10^3
Ac-228	6×10^{-1}	5×10^{-1}	1×10^1	1×10^6
Silver (47)				
Ag-105	2×10^0	2×10^0	1×10^2	1×10^6
Ag-108m (a)	7×10^{-1}	7×10^{-1}	1×10^1 (b)	1×10^6 (b)
Ag-110m (a)	4×10^{-1}	4×10^{-1}	1×10^1	1×10^6
Ag-111	2×10^0	6×10^{-1}	1×10^3	1×10^6
Aluminium (13)				
Al-26	1×10^{-1}	1×10^{-1}	1×10^1	1×10^5
Americium (95)				
Am-241	1×10^1	1×10^{-3}	1×10^0	1×10^4
Am-242m (a)	1×10^1	1×10^{-3}	1×10^0 (b)	1×10^4 (b)
Am-243 (a)	5×10^0	1×10^{-3}	1×10^0 (b)	1×10^3 (b)
Argon (18)				
Ar-37	4×10^1	4×10^1	1×10^6	1×10^8
Ar-39	4×10^1	2×10^1	1×10^7	1×10^4
Ar-41	3×10^{-1}	3×10^{-1}	1×10^2	1×10^9

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Radionuclide (atomic number)	A ₁ (TBq)	A ₂ (TBq)	Activity concentration limit for exempt material (Bq/g)	Activity limit for an exempt consignment (Bq)
Arsenic (33)				
As-72	3 × 10 ⁻¹	3 × 10 ⁻¹	1 × 10 ¹	1 × 10 ⁵
As-73	4 × 10 ¹	4 × 10 ¹	1 × 10 ³	1 × 10 ⁷
As-74	1 × 10 ⁰	9 × 10 ⁻¹	1 × 10 ¹	1 × 10 ⁶
As-76	3 × 10 ⁻¹	3 × 10 ⁻¹	1 × 10 ²	1 × 10 ⁵
As-77	2 × 10 ¹	7 × 10 ⁻¹	1 × 10 ³	1 × 10 ⁶
Astatine (85)				
At-211 (a)	2 × 10 ¹	5 × 10 ⁻¹	1 × 10 ³	1 × 10 ⁷
Gold (79)				
Au-193	7 × 10 ⁰	2 × 10 ⁰	1 × 10 ²	1 × 10 ⁷
Au-194	1 × 10 ⁰	1 × 10 ⁰	1 × 10 ¹	1 × 10 ⁶
Au-195	1 × 10 ¹	6 × 10 ⁰	1 × 10 ²	1 × 10 ⁷
Au-198	1 × 10 ⁰	6 × 10 ⁻¹	1 × 10 ²	1 × 10 ⁶
Au-199	1 × 10 ¹	6 × 10 ⁻¹	1 × 10 ²	1 × 10 ⁶
Barium (56)				
Ba-131 (a)	2 × 10 ⁰	2 × 10 ⁰	1 × 10 ²	1 × 10 ⁶
Ba-133	3 × 10 ⁰	3 × 10 ⁰	1 × 10 ²	1 × 10 ⁶
Ba-133m	2 × 10 ¹	6 × 10 ⁻¹	1 × 10 ²	1 × 10 ⁶
Ba-140 (a)	5 × 10 ⁻¹	3 × 10 ⁻¹	1 × 10 ¹ (b)	1 × 10 ⁵ (b)
Beryllium (4)				
Be-7	2 × 10 ¹	2 × 10 ¹	1 × 10 ³	1 × 10 ⁷
Be-10	4 × 10 ¹	6 × 10 ⁻¹	1 × 10 ⁴	1 × 10 ⁶
Bismuth (83)				
Bi-205	7 × 10 ⁻¹	7 × 10 ⁻¹	1 × 10 ¹	1 × 10 ⁶
Bi-206	3 × 10 ⁻¹	3 × 10 ⁻¹	1 × 10 ¹	1 × 10 ⁵
Bi-207	7 × 10 ⁻¹	7 × 10 ⁻¹	1 × 10 ¹	1 × 10 ⁶
Bi-210	1 × 10 ⁰	6 × 10 ⁻¹	1 × 10 ³	1 × 10 ⁶
Bi-210m (a)	6 × 10 ⁻¹	2 × 10 ⁻²	1 × 10 ¹	1 × 10 ⁵
Bi-212 (a)	7 × 10 ⁻¹	6 × 10 ⁻¹	1 × 10 ¹ (b)	1 × 10 ⁵ (b)
Berkelium (97)				
Bk-247	8 × 10 ⁰	8 × 10 ⁻⁴	1 × 10 ⁰	1 × 10 ⁴
Bk-249 (a)	4 × 10 ¹	3 × 10 ⁻¹	1 × 10 ³	1 × 10 ⁶
Bromine (35)				
Br-76	4 × 10 ⁻¹	4 × 10 ⁻¹	1 × 10 ¹	1 × 10 ⁵
Br-77	3 × 10 ⁰	3 × 10 ⁰	1 × 10 ²	1 × 10 ⁶
Br-82	4 × 10 ⁻¹	4 × 10 ⁻¹	1 × 10 ¹	1 × 10 ⁶
Carbon (6)				
C-11	1 × 10 ⁰	6 × 10 ⁻¹	1 × 10 ¹	1 × 10 ⁶
C-14	4 × 10 ¹	3 × 10 ⁰	1 × 10 ⁴	1 × 10 ⁷
Calcium (20)				
Ca-41	Unlimited	Unlimited	1 × 10 ⁵	1 × 10 ⁷
Ca-45	4 × 10 ¹	1 × 10 ⁰	1 × 10 ⁴	1 × 10 ⁷
Ca-47 (a)	3 × 10 ⁰	3 × 10 ⁻¹	1 × 10 ¹	1 × 10 ⁶
Cadmium (48)				
Cd-109	3 × 10 ¹	2 × 10 ⁰	1 × 10 ⁴	1 × 10 ⁶
Cd-113m	4 × 10 ¹	5 × 10 ⁻¹	1 × 10 ³	1 × 10 ⁶
Cd-115 (a)	3 × 10 ⁰	4 × 10 ⁻¹	1 × 10 ²	1 × 10 ⁶
Cd-115m	5 × 10 ⁻¹	5 × 10 ⁻¹	1 × 10 ³	1 × 10 ⁶
Cerium (58)				
Ce-139	7 × 10 ⁰	2 × 10 ⁰	1 × 10 ²	1 × 10 ⁶
Ce-141	2 × 10 ¹	6 × 10 ⁻¹	1 × 10 ²	1 × 10 ⁷
Ce-143	9 × 10 ⁻¹	6 × 10 ⁻¹	1 × 10 ²	1 × 10 ⁶
Ce-144 (a)	2 × 10 ⁻¹	2 × 10 ⁻¹	1 × 10 ² (b)	1 × 10 ⁵ (b)
Californium (98)				
Cf-248	4 × 10 ¹	6 × 10 ⁻³	1 × 10 ¹	1 × 10 ⁴
Cf-249	3 × 10 ⁰	8 × 10 ⁻⁴	1 × 10 ⁰	1 × 10 ³
Cf-250	2 × 10 ¹	2 × 10 ⁻³	1 × 10 ¹	1 × 10 ⁴
Cf-251	7 × 10 ⁰	7 × 10 ⁻⁴	1 × 10 ⁰	1 × 10 ³

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Radionuclide (atomic number)	A ₁ (TBq)	A ₂ (TBq)	Activity concentration limit for exempt material (Bq/g)	Activity limit for an exempt consignment (Bq)
Cf-252	1 × 10 ⁻¹	3 × 10 ⁻³	1 × 10 ¹	1 × 10 ⁴
Cf-253 (a)	4 × 10 ¹	4 × 10 ⁻²	1 × 10 ²	1 × 10 ⁵
Cf-254	1 × 10 ⁻³	1 × 10 ⁻³	1 × 10 ⁰	1 × 10 ³
Chlorine (17)				
Cl-36	1 × 10 ¹	6 × 10 ⁻¹	1 × 10 ⁴	1 × 10 ⁶
Cl-38	2 × 10 ⁻¹	2 × 10 ⁻¹	1 × 10 ¹	1 × 10 ⁵
Curium (96)				
Cm-240	4 × 10 ¹	2 × 10 ⁻²	1 × 10 ²	1 × 10 ⁵
Cm-241	2 × 10 ⁰	1 × 10 ⁰	1 × 10 ²	1 × 10 ⁶
Cm-242	4 × 10 ¹	1 × 10 ⁻²	1 × 10 ²	1 × 10 ⁵
Cm-243	9 × 10 ⁰	1 × 10 ⁻³	1 × 10 ⁰	1 × 10 ⁴
Cm-244	2 × 10 ¹	2 × 10 ⁻³	1 × 10 ¹	1 × 10 ⁴
Cm-245	9 × 10 ⁰	9 × 10 ⁻⁴	1 × 10 ⁰	1 × 10 ³
Cm-246	9 × 10 ⁰	9 × 10 ⁻⁴	1 × 10 ⁰	1 × 10 ³
Cm-247 (a)	3 × 10 ⁰	1 × 10 ⁻³	1 × 10 ⁰	1 × 10 ⁴
Cm-248	2 × 10 ⁻²	3 × 10 ⁻⁴	1 × 10 ⁰	1 × 10 ³
Cobalt (27)				
Co-55	5 × 10 ⁻¹	5 × 10 ⁻¹	1 × 10 ¹	1 × 10 ⁶
Co-56	3 × 10 ⁻¹	3 × 10 ⁻¹	1 × 10 ¹	1 × 10 ⁵
Co-57	1 × 10 ¹	1 × 10 ¹	1 × 10 ²	1 × 10 ⁶
Co-58	1 × 10 ⁰	1 × 10 ⁰	1 × 10 ¹	1 × 10 ⁶
Co-58m	4 × 10 ¹	4 × 10 ¹	1 × 10 ⁴	1 × 10 ⁷
Co-60	4 × 10 ⁻¹	4 × 10 ⁻¹	1 × 10 ¹	1 × 10 ⁵
Chromium (24)				
Cr-51	3 × 10 ¹	3 × 10 ¹	1 × 10 ³	1 × 10 ⁷
Caesium (55)				
Cs-129	4 × 10 ⁰	4 × 10 ⁰	1 × 10 ²	1 × 10 ⁵
Cs-131	3 × 10 ¹	3 × 10 ¹	1 × 10 ³	1 × 10 ⁶
Cs-132	1 × 10 ⁰	1 × 10 ⁰	1 × 10 ¹	1 × 10 ⁵
Cs-134	7 × 10 ⁻¹	7 × 10 ⁻¹	1 × 10 ¹	1 × 10 ⁴
Cs-134m	4 × 10 ¹	6 × 10 ⁻¹	1 × 10 ³	1 × 10 ⁵
Cs-135	4 × 10 ¹	1 × 10 ⁰	1 × 10 ⁴	1 × 10 ⁷
Cs-136	5 × 10 ⁻¹	5 × 10 ⁻¹	1 × 10 ¹	1 × 10 ⁵
Cs-137 (a)	2 × 10 ⁰	6 × 10 ⁻¹	1 × 10 ¹ (b)	1 × 10 ⁴ (b)
Copper (29)				
Cu-64	6 × 10 ⁰	1 × 10 ⁰	1 × 10 ²	1 × 10 ⁶
Cu-67	1 × 10 ¹	7 × 10 ⁻¹	1 × 10 ²	1 × 10 ⁶
Dysprosium (66)				
Dy-159	2 × 10 ¹	2 × 10 ¹	1 × 10 ³	1 × 10 ⁷
Dy-165	9 × 10 ⁻¹	6 × 10 ⁻¹	1 × 10 ³	1 × 10 ⁶
Dy-166 (a)	9 × 10 ⁻¹	3 × 10 ⁻¹	1 × 10 ³	1 × 10 ⁶
Erbium (68)				
Er-169	4 × 10 ¹	1 × 10 ⁰	1 × 10 ⁴	1 × 10 ⁷
Er-171	8 × 10 ⁻¹	5 × 10 ⁻¹	1 × 10 ²	1 × 10 ⁶
Europium (63)				
Eu-147	2 × 10 ⁰	2 × 10 ⁰	1 × 10 ²	1 × 10 ⁶
Eu-148	5 × 10 ⁻¹	5 × 10 ⁻¹	1 × 10 ¹	1 × 10 ⁶
Eu-149	2 × 10 ¹	2 × 10 ¹	1 × 10 ²	1 × 10 ⁷
Eu-150 (short-lived)	2 × 10 ⁰	7 × 10 ⁻¹	1 × 10 ³	1 × 10 ⁶
Eu-150 (long-lived)	7 × 10 ⁻¹	7 × 10 ⁻¹	1 × 10 ¹	1 × 10 ⁶
Eu-152	1 × 10 ⁰	1 × 10 ⁰	1 × 10 ¹	1 × 10 ⁶
Eu-152m	8 × 10 ⁻¹	8 × 10 ⁻¹	1 × 10 ²	1 × 10 ⁶
Eu-154	9 × 10 ⁻¹	6 × 10 ⁻¹	1 × 10 ¹	1 × 10 ⁶
Eu-155	2 × 10 ¹	3 × 10 ⁰	1 × 10 ²	1 × 10 ⁷
Eu-156	7 × 10 ⁻¹	7 × 10 ⁻¹	1 × 10 ¹	1 × 10 ⁶
Fluorine (9)				
F-18	1 × 10 ⁰	6 × 10 ⁻¹	1 × 10 ¹	1 × 10 ⁶

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Radionuclide (atomic number)	A ₁ (TBq)	A ₂ (TBq)	Activity concentration limit for exempt material (Bq/g)	Activity limit for an exempt consignment (Bq)
Iron (26)				
Fe-52 (a)	3×10^{-1}	3×10^{-1}	1×10^1	1×10^6
Fe-55	4×10^1	4×10^1	1×10^4	1×10^6
Fe-59	9×10^{-1}	9×10^{-1}	1×10^1	1×10^6
Fe-60 (a)	4×10^1	2×10^{-1}	1×10^2	1×10^5
Gallium (31)				
Ga-67	7×10^0	3×10^0	1×10^2	1×10^6
Ga-68	5×10^{-1}	5×10^{-1}	1×10^1	1×10^5
Ga-72	4×10^{-1}	4×10^{-1}	1×10^1	1×10^5
Gadolinium (64)				
Gd-146 (a)	5×10^{-1}	5×10^{-1}	1×10^1	1×10^6
Gd-148	2×10^1	2×10^{-3}	1×10^1	1×10^4
Gd-153	1×10^1	9×10^0	1×10^2	1×10^7
Gd-159	3×10^0	6×10^{-1}	1×10^3	1×10^6
Germanium (32)				
Ge-68 (a)	5×10^{-1}	5×10^{-1}	1×10^1	1×10^5
Ge-71	4×10^1	4×10^1	1×10^4	1×10^8
Ge-77	3×10^{-1}	3×10^{-1}	1×10^1	1×10^5
Hafnium (72)				
Hf-172 (a)	6×10^{-1}	6×10^{-1}	1×10^1	1×10^6
Hf-175	3×10^0	3×10^0	1×10^2	1×10^6
Hf-181	2×10^0	5×10^{-1}	1×10^1	1×10^6
Hf-182	Unlimited	Unlimited	1×10^2	1×10^6
Mercury (80)				
Hg-194 (a)	1×10^0	1×10^0	1×10^1	1×10^6
Hg-195m (a)	3×10^0	7×10^{-1}	1×10^2	1×10^6
Hg-197	2×10^1	1×10^1	1×10^2	1×10^7
Hg-197m	1×10^1	4×10^{-1}	1×10^2	1×10^6
Hg-203	5×10^0	1×10^0	1×10^2	1×10^5
Holmium (67)				
Ho-166	4×10^{-1}	4×10^{-1}	1×10^3	1×10^5
Ho-166m	6×10^{-1}	5×10^{-1}	1×10^1	1×10^6
Iodine (53)				
I-123	6×10^0	3×10^0	1×10^2	1×10^7
I-124	1×10^0	1×10^0	1×10^1	1×10^6
I-125	2×10^1	3×10^0	1×10^3	1×10^6
I-126	2×10^0	1×10^0	1×10^2	1×10^6
I-129	Unlimited	Unlimited	1×10^2	1×10^5
I-131	3×10^0	7×10^{-1}	1×10^2	1×10^6
I-132	4×10^{-1}	4×10^{-1}	1×10^1	1×10^5
I-133	7×10^{-1}	6×10^{-1}	1×10^1	1×10^6
I-134	3×10^{-1}	3×10^{-1}	1×10^1	1×10^5
I-135 (a)	6×10^{-1}	6×10^{-1}	1×10^1	1×10^6
Indium (49)				
In-111	3×10^0	3×10^0	1×10^2	1×10^6
In-113m	4×10^0	2×10^0	1×10^2	1×10^6
In-114m (a)	1×10^1	5×10^{-1}	1×10^2	1×10^6
In-115m	7×10^0	1×10^0	1×10^2	1×10^6
Iridium (77)				
Ir-189 (a)	1×10^1	1×10^1	1×10^2	1×10^7
Ir-190	7×10^{-1}	7×10^{-1}	1×10^1	1×10^6
Ir-192	1×10^0 (c)	6×10^{-1}	1×10^1	1×10^4
Ir-194	3×10^{-1}	3×10^{-1}	1×10^2	1×10^5
Potassium (19)				
K-40	9×10^{-1}	9×10^{-1}	1×10^2	1×10^6
K-42	2×10^{-1}	2×10^{-1}	1×10^2	1×10^6
K-43	7×10^{-1}	6×10^{-1}	1×10^1	1×10^6

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Radionuclide (atomic number)	A ₁ (TBq)	A ₂ (TBq)	Activity concentration limit for exempt material (Bq/g)	Activity limit for an exempt consignment (Bq)
Krypton (36)				
Kr-79	4 × 10 ⁰	2 × 10 ⁰	1 × 10 ³	1 × 10 ⁵
Kr-81	4 × 10 ¹	4 × 10 ¹	1 × 10 ⁴	1 × 10 ⁷
Kr-85	1 × 10 ¹	1 × 10 ¹	1 × 10 ⁵	1 × 10 ⁴
Kr-85m	8 × 10 ⁰	3 × 10 ⁰	1 × 10 ³	1 × 10 ¹⁰
Kr-87	2 × 10 ⁻¹	2 × 10 ⁻¹	1 × 10 ²	1 × 10 ⁹
Lanthanum (57)				
La-137	3 × 10 ¹	6 × 10 ⁰	1 × 10 ³	1 × 10 ⁷
La-140	4 × 10 ⁻¹	4 × 10 ⁻¹	1 × 10 ¹	1 × 10 ⁵
Lutetium (71)				
Lu-172	6 × 10 ⁻¹	6 × 10 ⁻¹	1 × 10 ¹	1 × 10 ⁶
Lu-173	8 × 10 ⁰	8 × 10 ⁰	1 × 10 ²	1 × 10 ⁷
Lu-174	9 × 10 ⁰	9 × 10 ⁰	1 × 10 ²	1 × 10 ⁷
Lu-174m	2 × 10 ¹	1 × 10 ¹	1 × 10 ²	1 × 10 ⁷
Lu-177	3 × 10 ¹	7 × 10 ⁻¹	1 × 10 ³	1 × 10 ⁷
Magnesium (12)				
Mg-28 (a)	3 × 10 ⁻¹	3 × 10 ⁻¹	1 × 10 ¹	1 × 10 ⁵
Manganese (25)				
Mn-52	3 × 10 ⁻¹	3 × 10 ⁻¹	1 × 10 ¹	1 × 10 ⁵
Mn-53	Unlimited	Unlimited	1 × 10 ⁴	1 × 10 ⁹
Mn-54	1 × 10 ⁰	1 × 10 ⁰	1 × 10 ¹	1 × 10 ⁶
Mn-56	3 × 10 ⁻¹	3 × 10 ⁻¹	1 × 10 ¹	1 × 10 ⁵
Molybdenum (42)				
Mo-93	4 × 10 ¹	2 × 10 ¹	1 × 10 ³	1 × 10 ⁸
Mo-99 (a)	1 × 10 ⁰	6 × 10 ⁻¹	1 × 10 ²	1 × 10 ⁶
Nitrogen (7)				
N-13	9 × 10 ⁻¹	6 × 10 ⁻¹	1 × 10 ²	1 × 10 ⁹
Sodium (11)				
Na-22	5 × 10 ⁻¹	5 × 10 ⁻¹	1 × 10 ¹	1 × 10 ⁶
Na-24	2 × 10 ⁻¹	2 × 10 ⁻¹	1 × 10 ¹	1 × 10 ⁵
Niobium (41)				
Nb-93m	4 × 10 ¹	3 × 10 ¹	1 × 10 ⁴	1 × 10 ⁷
Nb-94	7 × 10 ⁻¹	7 × 10 ⁻¹	1 × 10 ¹	1 × 10 ⁶
Nb-95	1 × 10 ⁰	1 × 10 ⁰	1 × 10 ¹	1 × 10 ⁶
Nb-97	9 × 10 ⁻¹	6 × 10 ⁻¹	1 × 10 ¹	1 × 10 ⁶
Neodymium (60)				
Nd-147	6 × 10 ⁰	6 × 10 ⁻¹	1 × 10 ²	1 × 10 ⁶
Nd-149	6 × 10 ⁻¹	5 × 10 ⁻¹	1 × 10 ²	1 × 10 ⁶
Nickel (28)				
Ni-59	Unlimited	Unlimited	1 × 10 ⁴	1 × 10 ⁸
Ni-63	4 × 10 ¹	3 × 10 ¹	1 × 10 ⁵	1 × 10 ⁸
Ni-65	4 × 10 ⁻¹	4 × 10 ⁻¹	1 × 10 ¹	1 × 10 ⁶
Neptunium (93)				
Np-235	4 × 10 ¹	4 × 10 ¹	1 × 10 ³	1 × 10 ⁷
Np-236 (short-lived)	2 × 10 ¹	2 × 10 ⁰	1 × 10 ³	1 × 10 ⁷
Np-236 (long-lived)	9 × 10 ⁰	2 × 10 ⁻²	1 × 10 ²	1 × 10 ⁵
Np-237	2 × 10 ¹	2 × 10 ⁻³	1 × 10 ⁰ (b)	1 × 10 ³ (b)
Np-239	7 × 10 ⁰	4 × 10 ⁻¹	1 × 10 ²	1 × 10 ⁷
Osmium (76)				
Os-185	1 × 10 ⁰	1 × 10 ⁰	1 × 10 ¹	1 × 10 ⁶
Os-191	1 × 10 ¹	2 × 10 ⁰	1 × 10 ²	1 × 10 ⁷
Os-191m	4 × 10 ¹	3 × 10 ¹	1 × 10 ³	1 × 10 ⁷
Os-193	2 × 10 ⁰	6 × 10 ⁻¹	1 × 10 ²	1 × 10 ⁶
Os-194 (a)	3 × 10 ⁻¹	3 × 10 ⁻¹	1 × 10 ²	1 × 10 ⁵
Phosphorus (15)				
P-32	5 × 10 ⁻¹	5 × 10 ⁻¹	1 × 10 ³	1 × 10 ⁵
P-33	4 × 10 ¹	1 × 10 ⁰	1 × 10 ⁵	1 × 10 ⁸

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Radionuclide (atomic number)	A ₁ (TBq)	A ₂ (TBq)	Activity concentration limit for exempt material (Bq/g)	Activity limit for an exempt consignment (Bq)
Protactinium (91)				
Pa-230 (a)	2 × 10 ⁰	7 × 10 ⁻²	1 × 10 ¹	1 × 10 ⁶
Pa-231	4 × 10 ⁰	4 × 10 ⁻⁴	1 × 10 ⁰	1 × 10 ³
Pa-233	5 × 10 ⁰	7 × 10 ⁻¹	1 × 10 ²	1 × 10 ⁷
Lead (82)				
Pb-201	1 × 10 ⁰	1 × 10 ⁰	1 × 10 ¹	1 × 10 ⁶
Pb-202	4 × 10 ¹	2 × 10 ¹	1 × 10 ³	1 × 10 ⁶
Pb-203	4 × 10 ⁰	3 × 10 ⁰	1 × 10 ²	1 × 10 ⁶
Pb-205	Unlimited	Unlimited	1 × 10 ⁴	1 × 10 ⁷
Pb-210 (a)	1 × 10 ⁰	5 × 10 ⁻²	1 × 10 ¹ (b)	1 × 10 ⁴ (b)
Pb-212 (a)	7 × 10 ⁻¹	2 × 10 ⁻¹	1 × 10 ¹ (b)	1 × 10 ⁵ (b)
Palladium (46)				
Pd-103 (a)	4 × 10 ¹	4 × 10 ¹	1 × 10 ³	1 × 10 ⁸
Pd-107	Unlimited	Unlimited	1 × 10 ⁵	1 × 10 ⁸
Pd-109	2 × 10 ⁰	5 × 10 ⁻¹	1 × 10 ³	1 × 10 ⁶
Promethium (61)				
Pm-143	3 × 10 ⁰	3 × 10 ⁰	1 × 10 ²	1 × 10 ⁶
Pm-144	7 × 10 ⁻¹	7 × 10 ⁻¹	1 × 10 ¹	1 × 10 ⁶
Pm-145	3 × 10 ¹	1 × 10 ¹	1 × 10 ³	1 × 10 ⁷
Pm-147	4 × 10 ¹	2 × 10 ⁰	1 × 10 ⁴	1 × 10 ⁷
Pm-148m (a)	8 × 10 ⁻¹	7 × 10 ⁻¹	1 × 10 ¹	1 × 10 ⁶
Pm-149	2 × 10 ⁰	6 × 10 ⁻¹	1 × 10 ³	1 × 10 ⁶
Pm-151	2 × 10 ⁰	6 × 10 ⁻¹	1 × 10 ²	1 × 10 ⁶
Polonium (84)				
Po-210	4 × 10 ¹	2 × 10 ⁻²	1 × 10 ¹	1 × 10 ⁴
Praseodymium (59)				
Pr-142	4 × 10 ⁻¹	4 × 10 ⁻¹	1 × 10 ²	1 × 10 ⁵
Pr-143	3 × 10 ⁰	6 × 10 ⁻¹	1 × 10 ⁴	1 × 10 ⁶
Platinum (78)				
Pt-188 (a)	1 × 10 ⁰	8 × 10 ⁻¹	1 × 10 ¹	1 × 10 ⁶
Pt-191	4 × 10 ⁰	3 × 10 ⁰	1 × 10 ²	1 × 10 ⁶
Pt-193	4 × 10 ¹	4 × 10 ¹	1 × 10 ⁴	1 × 10 ⁷
Pt-193m	4 × 10 ¹	5 × 10 ⁻¹	1 × 10 ³	1 × 10 ⁷
Pt-195m	1 × 10 ¹	5 × 10 ⁻¹	1 × 10 ²	1 × 10 ⁶
Pt-197	2 × 10 ¹	6 × 10 ⁻¹	1 × 10 ³	1 × 10 ⁶
Pt-197m	1 × 10 ¹	6 × 10 ⁻¹	1 × 10 ²	1 × 10 ⁶
Plutonium (94)				
Pu-236	3 × 10 ¹	3 × 10 ⁻³	1 × 10 ¹	1 × 10 ⁴
Pu-237	2 × 10 ¹	2 × 10 ¹	1 × 10 ³	1 × 10 ⁷
Pu-238	1 × 10 ¹	1 × 10 ⁻³	1 × 10 ⁰	1 × 10 ⁴
Pu-239	1 × 10 ¹	1 × 10 ⁻³	1 × 10 ⁰	1 × 10 ⁴
Pu-240	1 × 10 ¹	1 × 10 ⁻³	1 × 10 ⁰	1 × 10 ³
Pu-241 (a)	4 × 10 ¹	6 × 10 ⁻²	1 × 10 ²	1 × 10 ⁵
Pu-242	1 × 10 ¹	1 × 10 ⁻³	1 × 10 ⁰	1 × 10 ⁴
Pu-244 (a)	4 × 10 ⁻¹	1 × 10 ⁻³	1 × 10 ⁰	1 × 10 ⁴
Radium (88)				
Ra-223 (a)	4 × 10 ⁻¹	7 × 10 ⁻³	1 × 10 ² (b)	1 × 10 ⁵ (b)
Ra-224 (a)	4 × 10 ⁻¹	2 × 10 ⁻²	1 × 10 ¹ (b)	1 × 10 ⁵ (b)
Ra-225 (a)	2 × 10 ⁻¹	4 × 10 ⁻³	1 × 10 ²	1 × 10 ⁵
Ra-226 (a)	2 × 10 ⁻¹	3 × 10 ⁻³	1 × 10 ¹ (b)	1 × 10 ⁴ (b)
Ra-228 (a)	6 × 10 ⁻¹	2 × 10 ⁻²	1 × 10 ¹ (b)	1 × 10 ⁵ (b)
Rubidium (37)				
Rb-81	2 × 10 ⁰	8 × 10 ⁻¹	1 × 10 ¹	1 × 10 ⁶
Rb-83 (a)	2 × 10 ⁰	2 × 10 ⁰	1 × 10 ²	1 × 10 ⁶
Rb-84	1 × 10 ⁰	1 × 10 ⁰	1 × 10 ¹	1 × 10 ⁶
Rb-86	5 × 10 ⁻¹	5 × 10 ⁻¹	1 × 10 ²	1 × 10 ⁵
Rb-87	Unlimited	Unlimited	1 × 10 ⁴	1 × 10 ⁷
Rb (nat)	Unlimited	Unlimited	1 × 10 ⁴	1 × 10 ⁷

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Rhenium (75)				
Re-184	1 × 10 ⁰	1 × 10 ⁰	1 × 10 ¹	1 × 10 ⁶
Re-184m	3 × 10 ⁰	1 × 10 ⁰	1 × 10 ²	1 × 10 ⁶
Re-186	2 × 10 ⁰	6 × 10 ⁻¹	1 × 10 ³	1 × 10 ⁶
Re-187	Unlimited	Unlimited	1 × 10 ⁶	1 × 10 ⁹
Re-188	4 × 10 ⁻¹	4 × 10 ⁻¹	1 × 10 ²	1 × 10 ⁵
Re-189 (a)	3 × 10 ⁰	6 × 10 ⁻¹	1 × 10 ²	1 × 10 ⁶
Re (nat)	Unlimited	Unlimited	1 × 10 ⁶	1 × 10 ⁹
Rhodium (45)				
Rh-99	2 × 10 ⁰	2 × 10 ⁰	1 × 10 ¹	1 × 10 ⁶
Rh-101	4 × 10 ⁰	3 × 10 ⁰	1 × 10 ²	1 × 10 ⁷
Rh-102	5 × 10 ⁻¹	5 × 10 ⁻¹	1 × 10 ¹	1 × 10 ⁶
Rh-102m	2 × 10 ⁰	2 × 10 ⁰	1 × 10 ²	1 × 10 ⁶
Rh-103m	4 × 10 ¹	4 × 10 ¹	1 × 10 ⁴	1 × 10 ⁸
Rh-105	1 × 10 ¹	8 × 10 ⁻¹	1 × 10 ²	1 × 10 ⁷
Radon (86)				
Rn-222 (a)	3 × 10 ⁻¹	4 × 10 ⁻³	1 × 10 ¹ (b)	1 × 10 ⁸ (b)
Ruthenium (44)				
Ru-97	5 × 10 ⁰	5 × 10 ⁰	1 × 10 ²	1 × 10 ⁷
Ru-103 (a)	2 × 10 ⁰	2 × 10 ⁰	1 × 10 ²	1 × 10 ⁶
Ru-105	1 × 10 ⁰	6 × 10 ⁻¹	1 × 10 ¹	1 × 10 ⁶
Ru-106 (a)	2 × 10 ⁻¹	2 × 10 ⁻¹	1 × 10 ² (b)	1 × 10 ⁵ (b)
Sulphur (16)				
S-35	4 × 10 ¹	3 × 10 ⁰	1 × 10 ⁵	1 × 10 ⁸
Antimony (51)				
Sb-122	4 × 10 ⁻¹	4 × 10 ⁻¹	1 × 10 ²	1 × 10 ⁴
Sb-124	6 × 10 ⁻¹	6 × 10 ⁻¹	1 × 10 ¹	1 × 10 ⁶
Sb-125	2 × 10 ⁰	1 × 10 ⁰	1 × 10 ²	1 × 10 ⁶
Sb-126	4 × 10 ⁻¹	4 × 10 ⁻¹	1 × 10 ¹	1 × 10 ⁵
Scandium (21)				
Sc-44	5 × 10 ⁻¹	5 × 10 ⁻¹	1 × 10 ¹	1 × 10 ⁵
Sc-46	5 × 10 ⁻¹	5 × 10 ⁻¹	1 × 10 ¹	1 × 10 ⁶
Sc-47	1 × 10 ¹	7 × 10 ⁻¹	1 × 10 ²	1 × 10 ⁶
Sc-48	3 × 10 ⁻¹	3 × 10 ⁻¹	1 × 10 ¹	1 × 10 ⁵
Selenium (34)				
Se-75	3 × 10 ⁰	3 × 10 ⁰	1 × 10 ²	1 × 10 ⁶
Se-79	4 × 10 ¹	2 × 10 ⁰	1 × 10 ⁴	1 × 10 ⁷
Silicon (14)				
Si-31	6 × 10 ⁻¹	6 × 10 ⁻¹	1 × 10 ³	1 × 10 ⁶
Si-32	4 × 10 ¹	5 × 10 ⁻¹	1 × 10 ³	1 × 10 ⁶
Samarium (62)				
Sm-145	1 × 10 ¹	1 × 10 ¹	1 × 10 ²	1 × 10 ⁷
Sm-147	Unlimited	Unlimited	1 × 10 ¹	1 × 10 ⁴
Sm-151	4 × 10 ¹	1 × 10 ¹	1 × 10 ⁴	1 × 10 ⁸
Sm-153	9 × 10 ⁰	6 × 10 ⁻¹	1 × 10 ²	1 × 10 ⁶
Tin (50)				
Sn-113 (a)	4 × 10 ⁰	2 × 10 ⁰	1 × 10 ³	1 × 10 ⁷
Sn-117m	7 × 10 ⁰	4 × 10 ⁻¹	1 × 10 ²	1 × 10 ⁶
Sn-119m	4 × 10 ¹	3 × 10 ¹	1 × 10 ³	1 × 10 ⁷
Sn-121m (a)	4 × 10 ¹	9 × 10 ⁻¹	1 × 10 ³	1 × 10 ⁷
Sn-123	8 × 10 ⁻¹	6 × 10 ⁻¹	1 × 10 ³	1 × 10 ⁶
Sn-125	4 × 10 ⁻¹	4 × 10 ⁻¹	1 × 10 ²	1 × 10 ⁵
Sn-126 (a)	6 × 10 ⁻¹	4 × 10 ⁻¹	1 × 10 ¹	1 × 10 ⁵
Strontium (38)				
Sr-82 (a)	2 × 10 ⁻¹	2 × 10 ⁻¹	1 × 10 ¹	1 × 10 ⁵
Sr-85	2 × 10 ⁰	2 × 10 ⁰	1 × 10 ²	1 × 10 ⁶
Sr-85m	5 × 10 ⁰	5 × 10 ⁰	1 × 10 ²	1 × 10 ⁷
Sr-87m	3 × 10 ⁰	3 × 10 ⁰	1 × 10 ²	1 × 10 ⁶

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Sr-89	6 × 10 ⁻¹	6 × 10 ⁻¹	1 × 10 ³	1 × 10 ⁶
Sr-90 (a)	3 × 10 ⁻¹	3 × 10 ⁻¹	1 × 10 ² (b)	1 × 10 ⁴ (b)
Sr-91 (a)	3 × 10 ⁻¹	3 × 10 ⁻¹	1 × 10 ¹	1 × 10 ⁵
Sr-92 (a)	1 × 10 ⁰	3 × 10 ⁻¹	1 × 10 ¹	1 × 10 ⁶
Tritium (1)				
T (H-3)	4 × 10 ¹	4 × 10 ¹	1 × 10 ⁶	1 × 10 ⁹
Tantalum (73)				
Ta-178 (long-lived)	1 × 10 ⁰	8 × 10 ⁻¹	1 × 10 ¹	1 × 10 ⁶
Ta-179	3 × 10 ¹	3 × 10 ¹	1 × 10 ³	1 × 10 ⁷
Ta-182	9 × 10 ⁻¹	5 × 10 ⁻¹	1 × 10 ¹	1 × 10 ⁴
Terbium (65)				
Tb-157	4 × 10 ¹	4 × 10 ¹	1 × 10 ⁴	1 × 10 ⁷
Tb-158	1 × 10 ⁰	1 × 10 ⁰	1 × 10 ¹	1 × 10 ⁶
Tb-160	1 × 10 ⁰	6 × 10 ⁻¹	1 × 10 ¹	1 × 10 ⁶
Technetium (43)				
Tc-95m (a)	2 × 10 ⁰	2 × 10 ⁰	1 × 10 ¹	1 × 10 ⁶
Tc-96	4 × 10 ⁻¹	4 × 10 ⁻¹	1 × 10 ¹	1 × 10 ⁶
Tc-96m (a)	4 × 10 ⁻¹	4 × 10 ⁻¹	1 × 10 ³	1 × 10 ⁷
Tc-97	Unlimited	Unlimited	1 × 10 ³	1 × 10 ⁸
Tc-97m	4 × 10 ¹	1 × 10 ⁰	1 × 10 ³	1 × 10 ⁷
Tc-98	8 × 10 ⁻¹	7 × 10 ⁻¹	1 × 10 ¹	1 × 10 ⁶
Tc-99	4 × 10 ¹	9 × 10 ⁻¹	1 × 10 ⁴	1 × 10 ⁷
Tc-99m	1 × 10 ¹	4 × 10 ⁰	1 × 10 ²	1 × 10 ⁷
Tellurium (52)				
Te-121	2 × 10 ⁰	2 × 10 ⁰	1 × 10 ¹	1 × 10 ⁶
Te-121m	5 × 10 ⁰	3 × 10 ⁰	1 × 10 ²	1 × 10 ⁶
Te-123m	8 × 10 ⁰	1 × 10 ⁰	1 × 10 ²	1 × 10 ⁷
Te-125m	2 × 10 ¹	9 × 10 ⁻¹	1 × 10 ³	1 × 10 ⁷
Te-127	2 × 10 ¹	7 × 10 ⁻¹	1 × 10 ³	1 × 10 ⁶
Te-127m (a)	2 × 10 ¹	5 × 10 ⁻¹	1 × 10 ³	1 × 10 ⁷
Te-129	7 × 10 ⁻¹	6 × 10 ⁻¹	1 × 10 ²	1 × 10 ⁶
Te-129m (a)	8 × 10 ⁻¹	4 × 10 ⁻¹	1 × 10 ³	1 × 10 ⁶
Te-131m (a)	7 × 10 ⁻¹	5 × 10 ⁻¹	1 × 10 ¹	1 × 10 ⁶
Te-132 (a)	5 × 10 ⁻¹	4 × 10 ⁻¹	1 × 10 ²	1 × 10 ⁷
Thorium (90)				
Th-227	1 × 10 ¹	5 × 10 ⁻³	1 × 10 ¹	1 × 10 ⁴
Th-228 (a)	5 × 10 ⁻¹	1 × 10 ⁻³	1 × 10 ⁰ (b)	1 × 10 ⁴ (b)
Th-229	5 × 10 ⁰	1 × 10 ⁻⁴	1 × 10 ⁰ (b)	1 × 10 ³ (b)
Th-230	1 × 10 ¹	1 × 10 ⁻³	1 × 10 ⁰	1 × 10 ⁴
Th-231	4 × 10 ¹	2 × 10 ⁻²	1 × 10 ³	1 × 10 ⁷
Th-232	Unlimited	Unlimited	1 × 10 ¹	1 × 10 ⁴
Th-234 (a)	3 × 10 ⁻¹	3 × 10 ⁻¹	1 × 10 ³ (b)	1 × 10 ⁵ (b)
Th (nat)	Unlimited	Unlimited	1 × 10 ⁰ (b)	1 × 10 ³ (b)
Titanium (22)				
Ti-44 (a)	5 × 10 ⁻¹	4 × 10 ⁻¹	1 × 10 ¹	1 × 10 ⁵
Thallium (81)				
Tl-200	9 × 10 ⁻¹	9 × 10 ⁻¹	1 × 10 ¹	1 × 10 ⁶
Tl-201	1 × 10 ¹	4 × 10 ⁰	1 × 10 ²	1 × 10 ⁶
Tl-202	2 × 10 ⁰	2 × 10 ⁰	1 × 10 ²	1 × 10 ⁶
Tl-204	1 × 10 ¹	7 × 10 ⁻¹	1 × 10 ⁴	1 × 10 ⁴
Thulium (69)				
Tm-167	7 × 10 ⁰	8 × 10 ⁻¹	1 × 10 ²	1 × 10 ⁶
Tm-170	3 × 10 ⁰	6 × 10 ⁻¹	1 × 10 ³	1 × 10 ⁶
Tm-171	4 × 10 ¹	4 × 10 ¹	1 × 10 ⁴	1 × 10 ⁸
Uranium (92)				
U-230 (fast lung absorption) (a) (d)	4 × 10 ¹	1 × 10 ⁻¹	1 × 10 ¹ (b)	1 × 10 ⁵ (b)
U-230 (medium lung absorption) (a) (e)	4 × 10 ¹	4 × 10 ⁻³	1 × 10 ¹	1 × 10 ⁴

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Radionuclide (atomic number)	A ₁ (TBq)	A ₂ (TBq)	Activity concentration limit for exempt material (Bq/g)	Activity limit for an exempt consignment (Bq)
U-230 (slow lung absorption) (a) (f)	3 × 10 ¹	3 × 10 ⁻³	1 × 10 ¹	1 × 10 ⁴
U-232 (fast lung absorption) (d)	4 × 10 ¹	1 × 10 ⁻²	1 × 10 ⁰ (b)	1 × 10 ³ (b)
U-232 (medium lung absorption) (e)	4 × 10 ¹	7 × 10 ⁻³	1 × 10 ¹	1 × 10 ⁴
U-232 (slow lung absorption) (f)	1 × 10 ¹	1 × 10 ⁻³	1 × 10 ¹	1 × 10 ⁴
U-233 (fast lung absorption) (d)	4 × 10 ¹	9 × 10 ⁻²	1 × 10 ¹	1 × 10 ⁴
U-233 (medium lung absorption) (e)	4 × 10 ¹	2 × 10 ⁻²	1 × 10 ²	1 × 10 ⁵
U-233 (slow lung absorption) (f)	4 × 10 ¹	6 × 10 ⁻³	1 × 10 ¹	1 × 10 ⁵
U-234 (fast lung absorption) (d)	4 × 10 ¹	9 × 10 ⁻²	1 × 10 ¹	1 × 10 ⁴
U-234 (medium lung absorption) (e)	4 × 10 ¹	2 × 10 ⁻²	1 × 10 ²	1 × 10 ⁵
U-234 (slow lung absorption) (f)	4 × 10 ¹	6 × 10 ⁻³	1 × 10 ¹	1 × 10 ⁵
U-235 (all lung absorption types) (a) (d) (e) (f)	Unlimited	Unlimited	1 × 10 ¹ (b)	1 × 10 ⁴ (b)
U-236 (fast lung absorption) (d)	Unlimited	Unlimited	1 × 10 ¹	1 × 10 ⁴
U-236 (medium lung absorption) (e)	4 × 10 ¹	2 × 10 ⁻²	1 × 10 ²	1 × 10 ⁵
U-236 (slow lung absorption) (f)	4 × 10 ¹	6 × 10 ⁻³	1 × 10 ¹	1 × 10 ⁴
U-238 (all lung absorption types) (d) (e) (f)	Unlimited	Unlimited	1 × 10 ¹ (b)	1 × 10 ⁴ (b)
U (nat)	Unlimited	Unlimited	1 × 10 ⁰ (b)	1 × 10 ³ (b)
U (enriched to 20% or less) (g)	Unlimited	Unlimited	1 × 10 ⁰	1 × 10 ³
U (dep)	Unlimited	Unlimited	1 × 10 ⁰	1 × 10 ³
Vanadium (23)				
V-48	4 × 10 ⁻¹	4 × 10 ⁻¹	1 × 10 ¹	1 × 10 ⁵
V-49	4 × 10 ¹	4 × 10 ¹	1 × 10 ⁴	1 × 10 ⁷
Tungsten (74)				
W-178 (a)	9 × 10 ⁰	5 × 10 ⁰	1 × 10 ¹	1 × 10 ⁶
W-181	3 × 10 ¹	3 × 10 ¹	1 × 10 ³	1 × 10 ⁷
W-185	4 × 10 ¹	8 × 10 ⁻¹	1 × 10 ⁴	1 × 10 ⁷
W-187	2 × 10 ⁰	6 × 10 ⁻¹	1 × 10 ²	1 × 10 ⁶
W-188 (a)	4 × 10 ⁻¹	3 × 10 ⁻¹	1 × 10 ²	1 × 10 ⁵
Xenon (54)				
Xe-122 (a)	4 × 10 ⁻¹	4 × 10 ⁻¹	1 × 10 ²	1 × 10 ⁹
Xe-123	2 × 10 ⁰	7 × 10 ⁻¹	1 × 10 ²	1 × 10 ⁹
Xe-127	4 × 10 ⁰	2 × 10 ⁰	1 × 10 ³	1 × 10 ⁵
Xe-131m	4 × 10 ¹	4 × 10 ¹	1 × 10 ⁴	1 × 10 ⁴
Xe-133	2 × 10 ¹	1 × 10 ¹	1 × 10 ³	1 × 10 ⁴
Xe-135	3 × 10 ⁰	2 × 10 ⁰	1 × 10 ³	1 × 10 ¹⁰
Yttrium (39)				
Y-87 (a)	1 × 10 ⁰	1 × 10 ⁰	1 × 10 ¹	1 × 10 ⁶
Y-88	4 × 10 ⁻¹	4 × 10 ⁻¹	1 × 10 ¹	1 × 10 ⁶
Y-90	3 × 10 ⁻¹	3 × 10 ⁻¹	1 × 10 ³	1 × 10 ⁵
Y-91	6 × 10 ⁻¹	6 × 10 ⁻¹	1 × 10 ³	1 × 10 ⁶
Y-91m	2 × 10 ⁰	2 × 10 ⁰	1 × 10 ²	1 × 10 ⁶
Y-92	2 × 10 ⁻¹	2 × 10 ⁻¹	1 × 10 ²	1 × 10 ⁵
Y-93	3 × 10 ⁻¹	3 × 10 ⁻¹	1 × 10 ²	1 × 10 ⁵
Ytterbium (70)				
Yb-169	4 × 10 ⁰	1 × 10 ⁰	1 × 10 ²	1 × 10 ⁷
Yb-175	3 × 10 ¹	9 × 10 ⁻¹	1 × 10 ³	1 × 10 ⁷
Zinc (30)				
Zn-65	2 × 10 ⁰	2 × 10 ⁰	1 × 10 ¹	1 × 10 ⁶
Zn-69	3 × 10 ⁰	6 × 10 ⁻¹	1 × 10 ⁴	1 × 10 ⁶
Zn-69m (a)	3 × 10 ⁰	6 × 10 ⁻¹	1 × 10 ²	1 × 10 ⁶
Zirconium (40)				
Zr-88	3 × 10 ⁰	3 × 10 ⁰	1 × 10 ²	1 × 10 ⁶
Zr-93	Unlimited	Unlimited	1 × 10 ³ (b)	1 × 10 ⁷ (b)
Zr-95 (a)	2 × 10 ⁰	8 × 10 ⁻¹	1 × 10 ¹	1 × 10 ⁶
Zr-97 (a)	4 × 10 ⁻¹	4 × 10 ⁻¹	1 × 10 ¹ (b)	1 × 10 ⁵ (b)

(a) A₁ and/or A₂ values for these parent radionuclides include contributions from their progeny with half-lives less than 10 days, as listed in the following:

Mg-28 Al-28

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Ar-42	K-42
Ca-47	Sc-47
Ti-44	Sc-44
Fe-52	Mn-52m
Fe-60	Co-60m
Zn-69m	Zn-69
Ge-68	Ga-68
Rb-83	Kr-83m
Sr-82	Rb-82
Sr-90	Y-90
Sr-91	Y-91m
Sr-92	Y-92
Y-87	Sr-87m
Zr-95	Nb-95m
Zr-97	Nb-97m, Nb-97
Mo-99	Tc-99m
Tc-95m	Tc-95
Tc-96m	Tc-96
Ru-103	Rh-103m
Ru-106	Rh-106
Pd-103	Rh-103m
Ag-108m	Ag-108
Ag-110m	Ag-110
Cd-115	In-115m
In-114m	In-114
Sn-113	In-113m
Sn-121m	Sn-121
Sn-126	Sb-126m
Te-118	Sb-118
Te-127m	Te-127
Te-129m	Te-129
Te-131m	Te-131
Te-132	I-132
I-135	Xe-135m
Xe-122	I-122
Cs-137	Ba-137m
Ba-131	Cs-131
Ba-140	La-140
Ce-144	Pr-144m, Pr-144
Pm-148m	Pm-148
Gd-146	Eu-146
Dy-166	Ho-166
Hf-172	Lu-172
W-178	Ta-178
W-188	Re-188
Re-189	Os-189m
Os-194	Ir-194
Ir-189	Os-189m
Pt-188	Ir-188
Hg-194	Au-194
Hg-195m	Hg-195
Pb-210	Bi-210
Pb-212	Bi-212, Tl-208, Po-212
Bi-210m	Tl-206

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Bi-212	Tl-208, Po-212
At-211	Po-211
Rn-222	Po-218, Pb-214, At-218, Bi-214, Po-214
Ra-223	Rn-219, Po-215, Pb-211, Bi-211, Po-211, Tl-207
Ra-224	Rn-220, Po-216, Pb-212, Bi-212, Tl-208, Po-212
Ra-225	Ac-225, Fr-221, At-217, Bi-213, Tl-209, Po-213, Pb-209
Ra-226	Rn-222, Po-218, Pb-214, At-218, Bi-214, Po-214
Ra-228	Ac-228
Ac-225	Fr-221, At-217, Bi-213, Tl-209, Po-213, Pb-209
Ac-227	Fr-223
Th-228	Ra-224, Rn-220, Po-216, Pb-212, Bi-212, Tl-208, Po-212
Th-234	Pa-234m, Pa-234
Pa-230	Ac-226, Th-226, Fr-222, Ra-222, Rn-218, Po-214
U-230	Th-226, Ra-222, Rn-218, Po-214
U-235	Th-231
Pu-241	U-237
Pu-244	U-240, Np-240m
Am-242m	Am-242, Np-238
Am-243	Np-239
Cm-247	Pu-243
Bk-249	Am-245
Cf-253	Cm-249

(b) Parent nuclides and their progeny included in secular equilibrium are listed in the following:

Sr-90	Y-90
Zr-93	Nb-93m
Zr-97	Nb-97
Ru-106	Rh-106
Ag-108m	Ag-108
Cs-137	Ba-137m
Ce-144	Pr-144
Ba-140	La-140
Bi-212	Tl-208 (0.36), Po-212 (0.64)
Pb-210	Bi-210, Po-210
Pb-212	Bi-212, Tl-208 (0.36), Po-212 (0.64)
Rn-222	Po-218, Pb-214, Bi-214, Po-214
Ra-223	Rn-219, Po-215, Pb-211, Bi-211, Tl-207
Ra-224	Rn-220, Po-216, Pb-212, Bi-212, Tl-208 (0.36), Po-212 (0.64)
Ra-226	Rn-222, Po-218, Pb-214, Bi-214, Po-214, Pb-210, Bi-210, Po-210
Ra-228	Ac-228
Th-228	Ra-224, Rn-220, Po-216, Pb-212, Bi-212, Tl-208 (0.36), Po-212 (0.64)
Th-229	Ra-225, Ac-225, Fr-221, At-217, Bi-213, Po-213, Pb-209
Th (nat)	Ra-228, Ac-228, Th-228, Ra-224, Rn-220, Po-216, Pb-212, Bi-212, Tl-208 (0.36), Po-212 (0.64)
Th-234	Pa-234m
U-230	Th-226, Ra-222, Rn-218, Po-214
U-232	Th-228, Ra-224, Rn-220, Po-216, Pb-212, Bi-212, Tl-208 (0.36), Po-212 (0.64)
U-235	Th-231
U-238	Th-234, Pa-234m
U (nat)	Th-234, Pa-234m, U-234, Th-230, Ra-226, Rn-222, Po-218, Pb-214, Bi-214, Po-214, Pb-210, Bi-210, Po-210
Np-237	Pa-233
Am-242m	Am-242
Am-243	Np-239

(c) The quantity may be determined from a measurement of the rate of decay or a measurement of the radiation level at a prescribed distance from the source.

- (d) These values apply only to compounds of uranium that take the chemical form of UF₆, UO₂F₂ and UO₂(NO₃)₂ in both normal and accident conditions of transport.
- (e) These values apply only to compounds of uranium that take the chemical form of UO₃, UF₄, UCl₄ and hexavalent compounds in both normal and accident conditions of transport.
- (f) These values apply to all compounds of uranium other than those specified in (d) and (e) above.
- (g) These values apply to unirradiated uranium only.

2.7.2.2.2 For individual radionuclides:

- .1 which are not listed in table 2.7.2.2.1, the determination of the basic radionuclide values referred to in 2.7.2.2.1 shall require multilateral approval. For these radionuclides, activity concentration limits for exempt material and activity limits for exempt consignments shall be calculated in accordance with the principles established in the *International Basic Safety Standards for Protection against Ionizing Radiation and for the Safety of Radiation Sources*, Safety Series No. 115, IAEA, Vienna (1996). It is permissible to use an A₂ value calculated using a dose coefficient for the appropriate lung absorption type as recommended by the International Commission on Radiological Protection, if the chemical forms of each radionuclide under both normal and accident conditions of transport are taken into consideration. Alternatively, the radionuclide values in table 2.7.2.2.2 may be used without obtaining competent authority approval;
- .2 In instruments or articles in which the radioactive material is enclosed or is included as a component part of the instrument or other manufactured article and which meet 2.7.2.4.1.3.3, alternative basic radionuclide values to those in table 2.7.2.2.1 for the activity limit for an exempt consignment are permitted and shall require multilateral approval. Such alternative activity limits for an exempt consignment shall be calculated in accordance with the principles set out in the *International Basic Safety Standards for Protection against Ionizing Radiation and for the Safety of Radiation Sources*, Safety Series No. 115, IAEA, Vienna (1996).

Table 2.7.2.2.2 – Basic radionuclide values for unknown radionuclides or mixtures

Radioactive contents	A ₁ (TBq)	A ₂ (TBq)	Activity concentration limit for exempt material (Bq/g)	Activity limit for exempt consignments (Bq)
Only beta or gamma emitting nuclides are known to be present	0.1	0.02	1 × 10 ¹	1 × 10 ⁴
Alpha emitting nuclides but no neutron emitters are known to be present	0.2	9 × 10 ⁻⁵	1 × 10 ⁻¹	1 × 10 ³
Neutron emitting nuclides are known to be present or no relevant data are available	0.001	9 × 10 ⁻⁵	1 × 10 ⁻¹	1 × 10 ³

2.7.2.2.3 In the calculations of A₁ and A₂ for a radionuclide not in table 2.7.2.2.1, a single radioactive decay chain in which the radionuclides are present in their naturally occurring proportions, and in which no daughter nuclide has a half-life either longer than 10 days or longer than that of the parent nuclide, shall be considered as a single radionuclide; and the activity to be taken into account and the A₁ or A₂ value to be applied shall be those corresponding to the parent nuclide of that chain. In the case of radioactive decay chains in which any daughter nuclide has a half-life either longer than 10 days or greater than that of the parent nuclide, the parent and such daughter nuclides shall be considered as mixtures of different nuclides.

2.7.2.2.4 For mixtures of radionuclides, the basic radionuclide values referred to in 2.7.2.2.1 may be determined as follows:

$$X_m = \frac{1}{\sum_i \frac{f(i)}{X(i)}}$$

where:

- f(i) is the fraction of activity or activity concentration of radionuclide i in the mixture;
- X(i) is the appropriate value of A₁ or A₂, or the activity concentration limit for exempt material or the activity limit for an exempt consignment, as appropriate, for the radionuclide i; and
- X_m is the derived value of A₁ or A₂, or the activity concentration limit for exempt material or the activity limit for an exempt consignment in the case of a mixture.

2.7.2.2.5 When the identity of each radionuclide is known but the individual activities of some of the radionuclides are not known, the radionuclides may be grouped and the lowest radionuclide value, as appropriate, for the radionuclides in each group may be used in applying the formulae in 2.7.2.2.4 and 2.7.2.4.4. Groups may be based on the total alpha activity and the total beta/gamma activity when these are known, using the lowest radionuclide values for the alpha emitters or beta/gamma emitters, respectively.

2.7.2.2.6 For individual radionuclides or for mixtures of radionuclides for which relevant data are not available, the values shown in table 2.7.2.2.2 shall be used.

2.7.2.3 Determination of other material characteristics

2.7.2.3.1 *Low specific activity (LSA) material*

2.7.2.3.1.1 [Reserved]

2.7.2.3.1.2 LSA material shall be in one of three groups:

.1 LSA-I

- .1 uranium and thorium ores and concentrates of such ores, and other ores containing naturally occurring radionuclides;
- .2 Natural uranium, depleted uranium, natural thorium or their compounds or mixtures, that are unirradiated and in solid or liquid form;
- .3 radioactive material for which the A_2 value is unlimited. Fissile material may be included only if excepted under 2.7.2.3.5; or
- .4 other radioactive material in which the activity is distributed throughout and the estimated average specific activity does not exceed 30 times the values for activity concentration specified in 2.7.2.2.1 to 2.7.2.2.6. Fissile material may be included only if excepted under 2.7.2.3.5;

.2 LSA-II

- .1 water with tritium concentration up to 0.8 TBq/L;
- .2 other material in which the activity is distributed throughout and the estimated average specific activity does not exceed $10^{-4}A_2/g$ for solids and gases, and $10^{-5}A_2/g$ for liquids;

.3 LSA-III – Solids (e.g. consolidated wastes, activated materials), excluding powders, that meet the requirements of 2.7.2.3.1.3, in which:

- .1 the radioactive material is distributed throughout a solid or a collection of solid objects, or is essentially uniformly distributed in a solid compact binding agent (such as concrete, bitumen and ceramic);
- .2 the radioactive material is relatively insoluble, or it is intrinsically contained in a relatively insoluble matrix, so that, even under loss of packaging, the loss of radioactive material per package by leaching when placed in water for seven days would not exceed $0.1A_2$; and
- .3 the estimated average specific activity of the solid, excluding any shielding material, does not exceed $2 \times 10^{-3}A_2/g$.

2.7.2.3.1.3 LSA-III material shall be a solid of such a nature that, if the entire contents of a package were subjected to the test specified in 2.7.2.3.1.4, the activity in the water would not exceed $0.1A_2$.

2.7.2.3.1.4 LSA-III material shall be tested as follows:

A solid material sample representing the entire contents of the package shall be immersed for 7 days in water at ambient temperature. The volume of water to be used in the test shall be sufficient to ensure that at the end of the 7-day test period the free volume of the unabsorbed and unreacted water remaining shall be at least 10% of the volume of the solid test sample itself. The water shall have an initial pH of 6 to 8 and a maximum conductivity of 1 mS/m at 20°C. The total activity of the free volume of water shall be measured following the 7-day immersion of the test sample.

2.7.2.3.1.5 Demonstration of compliance with the performance standards in 2.7.2.3.1.4 shall be in accordance with 6.4.12.1 and 6.4.12.2.

2.7.2.3.2 *Surface contaminated object (SCO)*

SCO is classified in one of two groups:

.1 SCO-I: A solid object on which:

- .1 the non-fixed contamination on the accessible surface averaged over 300 cm² (or the area of the surface if less than 300 cm²) does not exceed 4 Bq/cm² for beta and gamma emitters and low-toxicity alpha emitters, or 0.4 Bq/cm² for all other alpha emitters;

- .2 the fixed contamination on the accessible surface averaged over 300 cm² (or the area of the surface if less than 300 cm²) does not exceed 4 × 10⁴ Bq/cm² for beta and gamma emitters and low-toxicity alpha emitters, or 4 × 10³ Bq/cm² for all other alpha emitters; or
 - .3 the non-fixed contamination plus the fixed contamination on the inaccessible surface averaged over 300 cm² (or the area of the surface if less than 300 cm²) does not exceed 4 × 10⁴ Bq/cm² for beta and gamma emitters and low-toxicity alpha emitters, or 4 × 10³ Bq/cm² for all other alpha emitters;
- .2 SCO-II: A solid object on which either the fixed or non-fixed contamination on the surface exceeds the applicable limits specified for SCO-I in 2.7.2.3.2.1 above and on which:
- .1 the non-fixed contamination on the accessible surface averaged over 300 cm² (or the area of the surface if less than 300 cm²) does not exceed 400 Bq/cm² for beta and gamma emitters and low-toxicity alpha emitters, or 40 Bq/cm² for all other alpha emitters;
 - .2 the fixed contamination on the accessible surface averaged over 300 cm² (or the area of the surface if less than 300 cm²) does not exceed 8 × 10⁵ Bq/cm² for beta and gamma emitters and low-toxicity alpha emitters, or 8 × 10⁴ Bq/cm² for all other alpha emitters; or
 - .3 the non-fixed contamination plus the fixed contamination on the inaccessible surface averaged over 300 cm² (or the area of the surface if less than 300 cm²) does not exceed 8 × 10⁵ Bq/cm² for beta and gamma emitters and low-toxicity alpha emitters, or 8 × 10⁴ Bq/cm² for all other alpha emitters.

2.7.2.3.3 *Special form radioactive material*

- 2.7.2.3.3.1 .1 Special form radioactive material shall have at least one dimension not less than 5 mm.
- .2 When a sealed capsule constitutes part of the special form radioactive material, the capsule shall be so manufactured that it can be opened only by destroying it.
- .3 The design for special form radioactive material requires unilateral approval.
- 2.7.2.3.3.2 Special form radioactive material shall be of such a nature or shall be so designed that, if it is subjected to the tests specified in 2.7.2.3.3.4 to 2.7.2.3.3.8, it shall meet the following requirements:
- .1 It would not break or shatter under the impact, percussion and bending tests 2.7.2.3.3.5.1, 2.7.2.3.3.5.2, 2.7.2.3.3.5.3, and 2.7.2.3.3.6.1 as applicable;
 - .2 It would not melt or disperse in the applicable heat test 2.7.2.3.3.5.4 or 2.7.2.3.3.6.2 as applicable; and
 - .3 The activity in the water from the leaching tests specified in 2.7.2.3.3.7 and 2.7.2.3.3.8 would not exceed 2 kBq; or alternatively for sealed sources, the leakage rate for the volumetric leakage assessment test specified in ISO 9978:1992, *Radiation protection – Sealed radioactive sources – Leakage test methods*, would not exceed the applicable acceptance threshold acceptable to the competent authority.
- 2.7.2.3.3.3 Demonstration of compliance with the performance standards in 2.7.2.3.3.2 shall be in accordance with 6.4.12.1 and 6.4.12.2.
- 2.7.2.3.3.4 Specimens that comprise or simulate special form radioactive material shall be subjected to the impact test, the percussion test, the bending test, and the heat test specified in 2.7.2.3.3.5 or alternative tests as authorized in 2.7.2.3.3.6. A different specimen may be used for each of the tests. Following each test, a leaching assessment or volumetric leakage test shall be performed on the specimen by a method no less sensitive than the methods given in 2.7.2.3.3.7 for indispersible solid material or 2.7.2.3.3.8 for encapsulated material.
- 2.7.2.3.3.5 The relevant test methods are:
- .1 Impact test: The specimen shall drop onto the target from a height of 9 m. The target shall be as defined in 6.4.14;
 - .2 Percussion test: The specimen shall be placed on a sheet of lead which is supported by a smooth solid surface and struck by the flat face of a mild steel bar so as to cause an impact equivalent to that resulting from a free drop of 1.4 kg through 1 m. The lower part of the bar shall be 25 mm in diameter with the edges rounded off to a radius of (3.0 ± 0.3) mm. The lead, of hardness number 3.5 to 4.5 on the Vickers scale and not more than 25 mm thick, shall cover an area greater than that covered by the specimen. A fresh surface of lead shall be used for each impact. The bar shall strike the specimen so as to cause maximum damage;
 - .3 Bending test: The test shall apply only to long, slender sources with both a minimum length of 10 cm and a length to minimum width ratio of not less than 10. The specimen shall be rigidly clamped in a horizontal position so that one half of its length protrudes from the face of the clamp. The orientation of the specimen shall be such that the specimen will suffer maximum damage when its free end is struck by the flat face of a steel bar. The bar shall strike the specimen so as to cause an impact equivalent to that resulting from a free vertical drop of 1.4 kg through 1 m. The lower part of the bar shall be 25 mm in diameter with the edges rounded off to a radius of (3.0 ± 0.3) mm;
 - .4 Heat test: The specimen shall be heated in air to a temperature of 800°C and held at that temperature for a period of 10 minutes and shall then be allowed to cool.

- 2.7.2.3.3.6** Specimens that comprise or simulate radioactive material enclosed in a sealed capsule may be excepted from:
- .1 The tests prescribed in 2.7.2.3.3.5.1 and 2.7.2.3.3.5.2 provided that the specimens are alternatively subjected to the impact test prescribed in ISO 2919:2012, *Radiation Protection – Sealed Radioactive Sources – General requirements and classification*:
 - .1 the class 4 impact test if the mass of the special form radioactive material is less than 200 g; and
 - .2 the class 5 impact test if the mass of the special form radioactive material is equal to or more than 200 g but is less than 500 g.
 - .2 The test prescribed in 2.7.2.3.3.5.4 provided they are alternatively subjected to the class 6 temperature test specified in ISO 2919:2012, *Radiation protection – Sealed radioactive sources – General requirements and classification*.
- 2.7.2.3.3.7** For specimens which comprise or simulate indispersible solid material, a leaching assessment shall be performed as follows:
- .1 The specimen shall be immersed for 7 days in water at ambient temperature. The volume of water to be used in the test shall be sufficient to ensure that at the end of the 7-day test period the free volume of the unabsorbed and unreacted water remaining shall be at least 10% of the volume of the solid test sample itself. The water shall have an initial pH of 6 to 8 and a maximum conductivity of 1 mS/m at 20°C;
 - .2 The water with specimen shall then be heated to a temperature of (50 ± 5)°C and maintained at this temperature for 4 hours;
 - .3 The activity of the water shall then be determined;
 - .4 The specimen shall then be kept for at least 7 days in still air at not less than 30°C and relative humidity not less than 90%;
 - .5 The specimen shall then be immersed in water of the same specification as in 2.7.2.3.3.7.1 above and the water with the specimen heated to (50 ± 5)°C and maintained at this temperature for 4 hours;
 - .6 The activity of the water shall then be determined.
- 2.7.2.3.3.8** For specimens which comprise or simulate radioactive material enclosed in a sealed capsule, either a leaching assessment or a volumetric leakage assessment shall be performed as follows:
- .1 The leaching assessment shall consist of the following steps:
 - .1 the specimen shall be immersed in water at ambient temperature. The water shall have an initial pH of 6 to 8 with a maximum conductivity of 1 mS/m at 20°C;
 - .2 the water and specimen shall be heated to a temperature of (50 ± 5)°C and maintained at this temperature for 4 hours;
 - .3 the activity of the water shall then be determined;
 - .4 the specimen shall then be kept for at least 7 days in still air at not less than 30°C and relative humidity of not less than 90%;
 - .5 the process in .1, .2 and .3 shall be repeated.
 - .2 The alternative volumetric leakage assessment shall comprise any of the tests prescribed in ISO 9978:1992, *Radiation protection – Sealed radioactive sources – Leakage test methods*, provided that they are acceptable to the competent authority.
- 2.7.2.3.4** *Low dispersible material*
- 2.7.2.3.4.1** The design for low dispersible radioactive material shall require multilateral approval. Low dispersible radioactive material shall be such that the total amount of this radioactive material in a package, taking into account the provisions of 6.4.8.14, shall meet the following provisions:
- .1 The radiation level at 3 m from the unshielded radioactive material does not exceed 10 mSv/h;
 - .2 If subjected to the tests specified in 6.4.20.3 and 6.4.20.4, the airborne release in gaseous and particulate forms of up to 100 µm aerodynamic equivalent diameter would not exceed 100A₂. A separate specimen may be used for each test; and
 - .3 If subjected to the test specified in 2.7.2.3.1.4, the activity in the water would not exceed 100A₂. In the application of this test, the damaging effects of the tests specified in 2.7.2.3.4.1.2 above shall be taken into account.
- 2.7.2.3.4.2** Low dispersible material shall be tested as follows:
- A specimen that comprises or simulates low dispersible radioactive material shall be subjected to the enhanced thermal test specified in 6.4.20.3 and the impact test specified in 6.4.20.4. A different specimen may be used for each of the tests. Following each test, the specimen shall be subjected to the leach test specified in 2.7.2.3.1.4. After each test it shall be determined if the applicable provisions of 2.7.2.3.4.1 have been met.

2.7.2.3.4.3 Demonstration of compliance with the performance standards in 2.7.2.3.4.1 and 2.7.2.3.4.2 shall be in accordance with 6.4.12.1 and 6.4.12.2.

2.7.2.3.5 Fissile material

Fissile material and packages containing fissile material shall be classified under the relevant entry as "FISSILE" in accordance with table 2.7.2.1.1 unless excepted by one of the provisions of subparagraphs .1 to .6 below and transported subject to the requirements of 5.1.5.5. All provisions apply only to material in packages that meets the requirements of 6.4.7.2 unless unpackaged material is specifically allowed in the provision.

- .1 uranium enriched in uranium-235 to a maximum of 1% by mass, and with a total plutonium and uranium-233 content not exceeding 1% of the mass of uranium-235, provided that the fissile nuclides are distributed essentially homogeneously throughout the material. In addition, if uranium-235 is present in metallic, oxide or carbide forms, it shall not form a lattice arrangement;
- .2 liquid solutions of uranyl nitrate enriched in uranium-235 to a maximum of 2% by mass, with a total plutonium and uranium-233 content not exceeding 0.002% of the mass of uranium, and with a minimum nitrogen to uranium atomic ratio (N/U) of 2;
- .3 uranium with a maximum uranium enrichment of 5% by mass uranium-235 provided:
 - .1 there is no more than 3.5 g of uranium-235 per package;
 - .2 the total plutonium and uranium-233 content does not exceed 1% of the mass of uranium-235 per package;
 - .3 Transport of the package is subject to the consignment limit provided in 5.1.5.5.3;
- .4 fissile nuclides with a total mass not greater than 2 g per package provided the package is transported subject to the consignment limit provided in 5.1.5.5.4;
- .5 fissile nuclides with a total mass not greater than 45 g either packaged or unpackaged subject to limits provided in 5.1.5.5.5;
- .6 a fissile material that meets the requirements of 5.1.5.5.2, 2.7.2.3.6 and 5.1.5.2.1.

2.7.2.3.6 A fissile material excepted from classification as "FISSILE" under 2.7.2.3.5.6 shall be subcritical without the need for accumulation control under the following conditions:

- .1 the conditions of 6.4.11.1 (a);
- .2 the conditions consistent with the assessment provisions stated in 6.4.11.12 (b) and 6.4.11.13 (b) for packages; and
- .3 the conditions specified in 6.4.11.11 (a), if transported by air.

2.7.2.4 Classification of packages or unpacked material

The quantity of radioactive material in a package shall not exceed the relevant limits for the package type as specified below.

2.7.2.4.1 Classification as excepted package

2.7.2.4.1.1 A package may be classified as an excepted package if it meets one of the following conditions:

- .1 it is an empty package having contained radioactive material;
- .2 it contains instruments or articles not exceeding the activity limits specified in columns (2) and (3) of table 2.7.2.4.1.2;
- .3 it contains articles manufactured of natural uranium, depleted uranium or natural thorium;
- .4 it contains radioactive material not exceeding the activity limits specified in column (4) of table 2.7.2.4.1.2; or
- .5 it contains less than 0.1 kg of uranium hexafluoride not exceeding the activity limits specified in column (4) of table 2.7.2.4.1.2.

2.7.2.4.1.2 A package containing radioactive material may be classified as an excepted package provided that the radiation level at any point on its external surface does not exceed 5 μ Sv/h.

Table 2.7.2.4.1.2 – Activity limits for excepted packages

Physical state of contents	Instruments or article		Material package limits ^a
	Item limits ^a	Package limits ^a	
(1)	(2)	(3)	(4)
Solids			
special form	$10^{-2} A_1$	A_1	$10^{-3} A_1$
other form	$10^{-2} A_2$	A_2	$10^{-3} A_2$
Liquids	$10^{-3} A_2$	$10^{-1} A_2$	$10^{-4} A_2$
Gases			
tritium	$2 \times 10^{-2} A_2$	$2 \times 10^{-1} A_2$	$2 \times 10^{-2} A_2$
special form	$10^{-3} A_1$	$10^{-2} A_1$	$10^{-3} A_1$
other forms	$10^{-3} A_2$	$10^{-2} A_2$	$10^{-3} A_2$

^a For mixtures of radionuclides, see 2.7.2.2.4 to 2.7.2.2.6.

2.7.2.4.1.3 Radioactive material which is enclosed in or is included as a component part of an instrument or other manufactured article may be classified under UN 2911, RADIOACTIVE MATERIAL, EXCEPTED PACKAGE – INSTRUMENTS or ARTICLES provided that:

- .1 the radiation level at 10 cm from any point on the external surface of any unpackaged instrument or article is not greater than 0.1 mSv/h; and
- .2 each instrument or manufactured article bears the mark “RADIOACTIVE” on its external surface except for the following:
 - .1 radioluminescent time-pieces or devices;
 - .2 consumer products that either have received regulatory approval in accordance with 1.5.1.4.5 or do not individually exceed the activity limit for an exempt consignment in table 2.7.2.2.1 (column 5), provided such products are transported in a package that bears the mark “RADIOACTIVE” on its internal surface in such a manner that a warning of the presence of radioactive material is visible on opening the package;
 - .3 other instruments or articles too small to bear the mark “RADIOACTIVE”, provided that they are transported in a package that bears the mark “RADIOACTIVE” on its internal surface in such a manner that a warning of the presence of radioactive material is visible on opening the package; and
- .3 the active material is completely enclosed by non-active components (a device performing the sole function of containing radioactive material shall not be considered to be an instrument or manufactured article); and
- .4 the limits specified in columns 2 and 3 of table 2.7.2.4.1.2 are met for each individual item and each package, respectively.

2.7.2.4.1.4 Radioactive material in forms other than as specified in 2.7.2.4.1.3 and with an activity not exceeding the limits specified in column 4 of table 2.7.2.4.1.2, may be classified under UN 2910, RADIOACTIVE MATERIAL, EXCEPTED PACKAGE – LIMITED QUANTITY OF MATERIAL provided that:

- .1 the package retains its radioactive contents under routine conditions of transport; and
- .2 the package bears the mark “RADIOACTIVE” on either:
 - .1 an internal surface in such a manner that a warning of the presence of radioactive material is visible on opening the package; or
 - .2 the outside of the package, where it is impractical to mark an internal surface.

2.7.2.4.1.5 Uranium hexafluoride not exceeding the limits specified in column 4 of table 2.7.2.4.1.2 may be classified under UN 3507 URANIUM HEXAFLUORIDE, RADIOACTIVE MATERIAL, EXCEPTED PACKAGE, less than 0.1 kg per package, non-fissile or fissile-excepted, provided that:

- .1 the mass of uranium hexafluoride in the package is less than 0.1 kg; and
- .2 the conditions of 2.7.2.4.5.1 and 2.7.2.4.1.4.1 and 2.7.2.4.1.4.2 are met.

2.7.2.4.1.6 Articles manufactured of natural uranium, depleted uranium or natural thorium and articles in which the sole radioactive material is unirradiated natural uranium, unirradiated depleted uranium or unirradiated natural thorium may be classified under UN 2909, RADIOACTIVE MATERIAL, EXCEPTED PACKAGE – ARTICLES MANUFACTURED FROM NATURAL URANIUM or DEPLETED URANIUM or NATURAL THORIUM, provided that the outer surface of the uranium or thorium is enclosed in an inactive sheath made of metal or some other substantial material.

2.7.2.4.1.7 An empty packaging which had previously contained radioactive material may be classified under UN 2908, RADIOACTIVE MATERIAL, EXCEPTED PACKAGE – EMPTY PACKAGING, provided that:

- .1 it is in a well-maintained condition and securely closed;
- .2 the outer surface of any uranium or thorium in its structure is covered with an inactive sheath made of metal or some other substantial material;
- .3 the level of internal non-fixed contamination, when averaged over any 300 cm², does not exceed:
 - .1 400 Bq/cm² for beta and gamma emitters and low-toxicity alpha emitters; and
 - .2 40 Bq/cm² for all other alpha emitters; and
- .4 any labels which may have been displayed on it in conformity with 5.2.2.1.12.1 are no longer visible.

2.7.2.4.2 *Classification as Low specific activity (LSA) material*

Radioactive material may only be classified as LSA material if the definition of LSA in 2.7.1.3 and the conditions of 2.7.2.3.1, 4.1.9.2 and 7.1.4.5.1 are met.

2.7.2.4.3 *Classification as Surface contaminated object (SCO)*

Radioactive material may be classified as SCO if the definition of SCO in 2.7.1.3 and the conditions of 2.7.2.3.2, 4.1.9.2 and 7.1.4.5.1 are met.

2.7.2.4.4 *Classification as Type A package*

Packages containing radioactive material may be classified as Type A packages provided that the following conditions are met:

Type A packages shall not contain activities greater than either of the following:

- .1 for special form radioactive material – A_1 ;
- .2 for all other radioactive material – A_2 .

For mixtures of radionuclides whose identities and respective activities are known, the following condition shall apply to the radioactive contents of a Type A package:

$$\sum_i \frac{B(i)}{A_1(i)} + \sum_j \frac{C(j)}{A_2(j)} \leq 1$$

where:

- $B(i)$ is the activity of radionuclide i as special form radioactive material;
- $A_1(i)$ is the A_1 value for radionuclide i ;
- $C(j)$ is the activity of radionuclide j as other than special form radioactive material;
- $A_2(j)$ is the A_2 value for radionuclide j .

2.7.2.4.5 *Classification of uranium hexafluoride*

2.7.2.4.5.1 Uranium hexafluoride shall only be assigned to:

- .1 UN 2977, RADIOACTIVE MATERIAL, URANIUM HEXAFLUORIDE, FISSILE;
- .2 UN 2978, RADIOACTIVE MATERIAL, URANIUM HEXAFLUORIDE, non-fissile or fissile-excepted; or
- .3 UN 3507, URANIUM HEXAFLUORIDE, RADIOACTIVE MATERIAL, EXCEPTED PACKAGE less than 0.1 kg per package, non-fissile or fissile-excepted.

2.7.2.4.5.2 The contents of a package containing uranium hexafluoride shall comply with the following requirements:

- .1 for UN Nos. 2977 and 2978, the mass of uranium hexafluoride shall not be different from that allowed for the package design, and for UN 3507, the mass of uranium hexafluoride shall be less than 0.1 kg;
- .2 the mass of uranium hexafluoride shall not be greater than a value that would lead to an ullage smaller than 5% at the maximum temperature of the package as specified for the plant systems where the package shall be used; and
- .3 the uranium hexafluoride shall be in solid form and the internal pressure shall not be above atmospheric pressure when presented for transport.

2.7.2.4.6 *Classification as Type B(U), Type B(M) or Type C packages*

2.7.2.4.6.1 Packages not otherwise classified in 2.7.2.4 (2.7.2.4.1 to 2.7.2.4.5) shall be classified in accordance with the competent authority certificate of approval for the package issued by the country of origin of design.

2.7.2.4.6.2 The contents of a Type B(U), Type B(M) or Type C package shall be as specified in the certificate of approval.

2.7.2.5 Special arrangements

Radioactive material shall be classified as transported under special arrangement when it is intended to be transported in accordance with 1.5.4.

Chapter 2.8

Class 8 – Corrosive substances

2.8.1 Definition and properties

2.8.1.1 Definition

Class 8 substances (corrosive substances) means substances which, by chemical action, will cause severe damage when in contact with living tissue or, in the case of leakage, will materially damage, or even destroy, other goods or the means of transport.

2.8.1.2 Properties

2.8.1.2.1 In cases where particularly severe personal damage is to be expected, a note to that effect is made in the Dangerous Goods List in chapter 3.2 in the wording “causes (severe) burns to skin, eyes and mucous membranes”.

2.8.1.2.2 Many substances are sufficiently volatile to evolve vapour irritating to the nose and eyes. If so, this fact is mentioned in the Dangerous Goods List in chapter 3.2 in the wording “vapour irritates mucous membranes”.

2.8.1.2.3 A few substances may produce toxic gases when decomposed by very high temperatures. In these cases the statement “when involved in a fire, evolves toxic gases” appears in the Dangerous Goods List in chapter 3.2.

2.8.1.2.4 In addition to direct destructive action in contact with skin or mucous membranes, some substances in this class are toxic or harmful. Poisoning may result if they are swallowed, or if their vapour is inhaled; some of them even may penetrate the skin. Where appropriate, a statement is made to that effect in the Dangerous Goods List in chapter 3.2.

2.8.1.2.5 All substances in this class have a more or less destructive effect on materials such as metals and textiles.

2.8.1.2.5.1 In the Dangerous Goods List, the term “corrosive to most metals” means that any metal likely to be present in a ship, or in its cargo, may be attacked by the substance or its vapour.

2.8.1.2.5.2 The term “corrosive to aluminium, zinc, and tin” implies that iron or steel is not damaged in contact with the substance.

2.8.1.2.5.3 A few substances in this class can corrode glass, earthenware and other siliceous materials. Where appropriate, this is stated in the Dangerous Goods List in chapter 3.2.

2.8.1.2.6 Many substances in this class only become corrosive after having reacted with water, or with moisture in the air. This fact is indicated in the Dangerous Goods List in chapter 3.2 by the words “in the presence of moisture...”. The reaction of water with many substances is accompanied by the liberation of irritating and corrosive gases. Such gases usually become visible as fumes in the air.

2.8.1.2.7 A few substances in this class generate heat in reaction with water or organic materials, including wood, paper, fibres, some cushioning materials and certain fats and oils. Where appropriate, this is indicated in the Dangerous Goods List in chapter 3.2.

2.8.1.2.8 A substance which is designated as “stabilized” shall not be transported in the unstabilized state.

2.8.2 Assignment of packing groups

2.8.2.1 Substances and preparations of class 8 are divided among the three packing groups according to their degree of hazard in transport as follows:

Packing group I: Very dangerous substances and preparations;

Packing group II: Substances and preparations presenting medium danger;

Packing group III: Substances and preparations presenting minor danger.

The packing group to which a substance has been assigned is given in the Dangerous Goods List in chapter 3.2.

- 2.8.2.2** Allocation of substances listed in the Dangerous Goods List in chapter 3.2 to the packing groups in class 8 has been on the basis of experience, taking into account such additional factors as inhalation risk (see 2.8.2.3) and reactivity with water (including the formation of dangerous decomposition products). New substances, including mixtures, can be assigned to packing groups on the basis of the length of time of contact necessary to produce full thickness destruction of human skin in accordance with the criteria in 2.8.2.5. Liquids, and solids which may become liquid during transport, which are judged not to cause full thickness destruction of human skin shall still be considered for their potential to cause corrosion in certain metal surfaces in accordance with the criteria in 2.8.2.5.3.2.
- 2.8.2.3** A substance or preparation meeting the criteria of class 8 and having an inhalation toxicity of dusts and mists (LC_{50}) in the range of packing group I, but toxicity through oral ingestion or dermal contact only in the range of packing group III or less, shall be allocated to class 8 (see note under 2.6.2.2.4.1).
- 2.8.2.4** In assigning the packing group to a substance in accordance with 2.8.2.2, account shall be taken of human experience in instances of accidental exposure. In the absence of human experience, the grouping shall be based on data obtained from experiments in accordance with OECD Test Guideline 404 or 435. A substance which is determined not to be corrosive in accordance with OECD Test Guideline 430 or 431 may be considered not to be corrosive to skin for the purposes of this Code without further testing.
- 2.8.2.5** Packing groups are assigned to corrosive substances in accordance with the following criteria:
- .1 Packing group I is assigned to substances that cause full thickness destruction of intact skin tissue within an observation period of up to 60 minutes starting after an exposure time of 3 minutes or less.
 - .2 Packing group II is assigned to substances that cause full thickness destruction of intact skin tissue within an observation period of up to 14 days starting after an exposure time of more than 3 but not more than 60 minutes.
 - .3 Packing group III is assigned to substances that:
 - .1 cause full thickness destruction of intact skin tissue within an observation period of up to 14 days starting after an exposure time of more than 60 minutes but not more than 4 hours; or
 - .2 are judged not to cause full thickness destruction of intact skin tissue but which exhibit a corrosion rate on either steel or aluminium surfaces exceeding 6.25 mm a year at a test temperature of 55°C when tested on both materials. For the purposes of testing steel, type S235JR+CR (1.0037 resp. St 37-2), S275J2G3+CR (1.0144 resp. St 44-3), ISO 3574:1999, Unified Numbering System (UNS) G10200 or SAE 1020, and for testing aluminium, non-clad, types 7075-T6 or AZ5GU T6 shall be used. An acceptable test is prescribed in the Manual of Tests and Criteria, part III, section 37.
- Note:** Where an initial test on either steel or aluminium indicates the substance being tested is corrosive, the follow-up test on the other metal is not required.

Table 2.8.2.5 – Table summarizing the criteria in 2.8.2.5

Packing group	Exposure time	Observation period	Effect
I	≤ 3 min	≤ 60 min	Full thickness destruction of intact skin
II	> 3 min ≤ 1 h	≤ 14 d	Full thickness destruction of intact skin
III	> 1 h ≤ 4 h	≤ 14 d	Full thickness destruction of intact skin
III	–	–	Corrosion rate on either steel or aluminium surfaces exceeding 6.25 mm a year at a test temperature of 55°C when tested on both materials

2.8.3 Substances not accepted for transport

Chemically unstable substances of class 8 shall not be accepted for transport unless the necessary precautions have been taken to prevent the possibility of a dangerous decomposition or polymerization under normal conditions of transport. For the precautions necessary to prevent polymerization, see special provision 386 of chapter 3.3. To this end particular care shall be taken to ensure that receptacles and tanks do not contain any substances liable to promote these reactions.

Chapter 2.9

Miscellaneous dangerous substances and articles (class 9) and environmentally hazardous substances

Note 1: For the purposes of this Code, the environmentally hazardous substances (aquatic environment) criteria contained in this chapter apply to the classification of marine pollutants (see 2.10).

Note 2: Although the environmentally hazardous substances (aquatic environment) criteria apply to all hazard classes, except for class 7 (see paragraphs 2.10.2.3, 2.10.2.5 and 2.10.3.2), the criteria have been included in this chapter.

2.9.1 Definitions

2.9.1.1 *Class 9 substances and articles (miscellaneous dangerous substances and articles)* are substances and articles which, during transport, present a danger not covered by other classes.

2.9.2 Assignment to class 9

2.9.2.1 Class 9 includes, inter alia:

- .1 substances and articles not covered by other classes which experience has shown, or may show, to be of such a dangerous character that the provisions of part A of chapter VII of SOLAS, as amended, shall apply.
- .2 substances not subject to the provisions of part A in chapter VII of the aforementioned Convention, but to which the provisions of Annex III of MARPOL, as amended, apply.

2.9.2.2 The substances and articles of class 9 are subdivided as follows:

Substances which, on inhalation as fine dust, may endanger health

2212 ASBESTOS, AMPHIBOLE (amosite, tremolite, actinolite, anthophyllite, crocidolite)

2590 ASBESTOS, CHRYSOTILE

Substances evolving flammable vapour

2211 POLYMERIC BEADS, EXPANDABLE, evolving flammable vapour

3314 PLASTICS MOULDING COMPOUND in dough, sheet or extruded rope form evolving flammable vapour

Lithium batteries

3090 LITHIUM METAL BATTERIES (including lithium alloy batteries)

3091 LITHIUM METAL BATTERIES CONTAINED IN EQUIPMENT (including lithium alloy batteries) or

3091 LITHIUM METAL BATTERIES PACKED WITH EQUIPMENT (including lithium alloy batteries)

3480 LITHIUM ION BATTERIES (including lithium ion polymer batteries)

3481 LITHIUM ION BATTERIES CONTAINED IN EQUIPMENT (including lithium ion polymer batteries) or

3481 LITHIUM ION BATTERIES PACKED WITH EQUIPMENT (including lithium ion polymer batteries)

Note: See 2.9.4.

Capacitors

- 3499 CAPACITOR, ELECTRIC DOUBLE LAYER (with an energy storage capacity greater than 0.3 Wh)
- 3508 CAPACITOR, ASYMMETRIC (with an energy storage capacity greater than 0.3 Wh)

Life-saving appliances

- 2990 LIFE-SAVING APPLIANCES, SELF-INFLATING
- 3072 LIFE-SAVING APPLIANCES, NOT SELF-INFLATING containing dangerous goods as equipment
- 3268 SAFETY DEVICES, electrically initiated

Substances and articles which, in the event of fire, may form dioxins

This group of substances includes:

- 2315 POLYCHLORINATED BIPHENYLS, LIQUID
- 3432 POLYCHLORINATED BIPHENYLS, SOLID
- 3151 POLYHALOGENATED BIPHENYLS, LIQUID or
- 3151 HALOGENATED MONOMETHYLDIPHENYLMETHANES, LIQUID or
- 3151 POLYHALOGENATED TERPHENYLS, LIQUID
- 3152 POLYHALOGENATED BIPHENYLS, SOLID or
- 3152 HALOGENATED MONOMETHYLDIPHENYLMETHANES, SOLID or
- 3152 POLYHALOGENATED TERPHENYLS, SOLID

Examples of articles are transformers, condensers and apparatus containing those substances.

Substances transported or offered for transport at elevated temperatures

- 3257 ELEVATED TEMPERATURE LIQUID, N.O.S., at or above 100°C and below its flashpoint (including molten metal, molten salts, etc.)
- 3258 ELEVATED TEMPERATURE SOLID, N.O.S., at or above 240°C

Environmentally hazardous substances

- 3077 ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S.
- 3082 ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.

These entries are used for substances and mixtures which are dangerous to the aquatic environment that do not meet the classification criteria of any other class or another substance within class 9. These entries may also be used for wastes not otherwise subject to the provisions of this Code but which are covered under the Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal and for substances designated to be environmentally hazardous substances by the competent authority of the country of origin, transit or destination which do not meet the criteria for an environmentally hazardous substance according to the provisions of this Code or for any other hazard class. The criteria for substances which are hazardous to the aquatic environment are given in section 2.9.3.

Genetically modified microorganisms (GMMOs) and genetically modified organisms (GMOs)

- 3245 GENETICALLY MODIFIED MICROORGANISMS or
- 3245 GENETICALLY MODIFIED ORGANISMS

GMMOs and GMOs which do not meet the definition of toxic substances (see 2.6.2) or infectious substances (see 2.6.3) shall be assigned to UN 3245.

GMMOs or GMOs are not subject to the provisions of this Code when authorized for use by the competent authorities of the countries of origin, transit and destination.

Genetically modified live animals shall be transported under terms and conditions of the competent authorities of the countries of origin and destination.

Other substances or articles presenting a danger during transport, but not meeting the definitions of another class:

- 1841 ACETALDEHYDE AMMONIA
- 1845 CARBON DIOXIDE, SOLID (DRY ICE)
- 1931 ZINC DITHIONITE (ZINC HYDROSULPHITE)
- 1941 DIBROMODIFLUOROMETHANE
- 1990 BENZALDEHYDE
- 2071 AMMONIUM NITRATE BASED FERTILIZER
- 2216 FISH MEAL (FISH SCRAP), STABILIZED
- 2807 MAGNETIZED MATERIAL*
- 2969 CASTOR BEANS or
- 2969 CASTOR MEAL or
- 2969 CASTOR POMACE or
- 2969 CASTOR FLAKE

- 3166 VEHICLE, FLAMMABLE GAS POWERED or
- 3166 VEHICLE, FLAMMABLE LIQUID POWERED or

- 3166 VEHICLE, FUEL CELL, FLAMMABLE GAS POWERED or
- 3166 VEHICLE, FUEL CELL, FLAMMABLE LIQUID POWERED
- 3171 BATTERY-POWERED VEHICLE or
- 3171 BATTERY-POWERED EQUIPMENT
- 3316 CHEMICAL KIT or
- 3316 FIRST AID KIT
- 3334 AVIATION REGULATED LIQUID, N.O.S.
- 3335 AVIATION REGULATED SOLID, N.O.S.
- 3359 FUMIGATED CARGO TRANSPORT UNIT
- 3363 DANGEROUS GOODS IN MACHINERY or
- 3363 DANGEROUS GOODS IN APPARATUS
- 3496 BATTERIES, NICKEL-METAL HYDRIDE
- 3509 PACKAGINGS, DISCARDED, EMPTY, UNCLEANNED[†]
- 3530 ENGINE, INTERNAL COMBUSTION or
- 3530 MACHINERY, INTERNAL COMBUSTION

2.9.3 Environmentally hazardous substances (aquatic environment)

2.9.3.1 General definitions

2.9.3.1.1 Environmentally hazardous substances include, inter alia, liquid or solid substances pollutant to the aquatic environment and solutions and mixtures of such substances (such as preparations and wastes).

For the purposes of this section,

Substance means chemical elements and their compounds in the natural state or obtained by any production process, including any additive necessary to preserve the stability of the product and any impurities deriving from the process used, but excluding any solvent which may be separated without affecting the stability of the substance or changing its composition.

2.9.3.1.2 The aquatic environment may be considered in terms of the aquatic organisms that live in the water, and the aquatic ecosystem of which they are part. The basis, therefore, of the identification of hazard is the aquatic toxicity of the substance or mixture, although this may be modified by further information on the degradation and bioaccumulation behaviour.

2.9.3.1.3 While the following classification procedure is intended to apply to all substances and mixtures, it is recognized that in some cases, e.g. metals or poorly soluble inorganic compounds, special guidance will be necessary.

2.9.3.1.4 The following definitions apply for acronyms or terms used in this section:

BCF	bioconcentration factor;
BOD	biochemical oxygen demand;
COD	chemical oxygen demand;
GLP	good laboratory practices;
EC _x	the concentration associated with x% response;
EC ₅₀	the effective concentration of substance that causes 50% of the maximum response;
ErC ₅₀	EC ₅₀ in terms of reduction of growth;
K _{ow}	octanol/water partition coefficient;
LC ₅₀ (50% lethal concentration)	the concentration of a substance in water which causes the death of 50% (one half) in a group of test animals;
L(E)C ₅₀	LC ₅₀ or EC ₅₀ ;
NOEC (no observed effect concentration)	the test concentration immediately below the lowest tested concentration with statistically significant adverse effect. The NOEC has no statistically significant adverse effect compared to the control;
OECD Test Guidelines	Test guidelines published by the Organization for Economic Co-operation and Development (OECD).

2.9.3.2 Definitions and data requirements

2.9.3.2.1 The basic elements for classification of environmentally hazardous substances (aquatic environment) are:

- .1 acute aquatic toxicity;
- .2 chronic aquatic toxicity;
- .3 potential for or actual bioaccumulation; and
- .4 degradation (biotic or abiotic) for organic chemicals;

2.9.3.2.2 While data from internationally harmonized test methods are preferred, in practice, data from national methods may also be used where they are considered as equivalent. In general, it has been agreed that freshwater and marine species toxicity data can be considered as equivalent data and are preferably to be derived using OECD Test Guidelines or equivalent according to the principles of good laboratory practices (GLP). Where such data are not available, classification shall be based on the best available data.

2.9.3.2.3 *Acute aquatic toxicity* means the intrinsic property of a substance to be injurious to an organism in a short-term aquatic exposure to that substance.

Acute (short-term) hazard, for classification purposes, means the hazard of a chemical caused by its acute toxicity to an organism during short-term aquatic exposure to that chemical.

Acute aquatic toxicity shall normally be determined using a fish 96 h LC₅₀ (OECD Test Guideline 203 or equivalent), a crustacea species 48 h EC₅₀ (OECD Test Guideline 202 or equivalent) and/or an algal species 72 or 96 h EC₅₀ (OECD Test Guideline 201 or equivalent). These species are considered as surrogate for all

aquatic organisms and data on other species such as Lemna may also be considered if the test methodology is suitable.

2.9.3.2.4 Chronic aquatic toxicity means the intrinsic property of a substance to cause adverse effects to aquatic organisms during aquatic exposures which are determined in relation to the life cycle of the organism.

Long-term hazard, for classification purposes, means the hazard of a chemical caused by its chronic toxicity following long-term exposure in the aquatic environment.

Chronic toxicity data are less available than acute data and the range of testing procedures less standardized. Data generated according to the OECD Test Guidelines 210 (Fish Early Life Stage) or 211 (Daphnia Reproduction) and 201 (Algal Growth Inhibition) may be accepted. Other validated and internationally accepted tests may also be used. The NOECs or other equivalent EC_x shall be used.

2.9.3.2.5 *Bioaccumulation* means net result of uptake, transformation and elimination of a substance in an organism due to all routes of exposure (i.e. air, water, sediment/soil and food).

The potential for bioaccumulation shall normally be determined by using the octanol/water partition coefficient, usually reported as a log K_{ow} determined according to OECD Test Guidelines 107, 117 or 123. While this represents a potential to bioaccumulate, an experimentally determined bioconcentration factor (BCF) provides a better measure and shall be used in preference when available. A BCF shall be determined according to OECD Test Guideline 305.

2.9.3.2.6 *Degradation* means the decomposition of organic molecules to smaller molecules and eventually to carbon dioxide, water and salts.

Environmental degradation may be biotic or abiotic (e.g. hydrolysis) and the criteria used reflect this fact. Ready biodegradation is most easily defined using the biodegradability tests (A to F) of OECD Test Guidelines 301. A pass level in these tests may be considered as indicative of rapid degradation in most environments. These are freshwater tests and thus the use of the results from OECD Test Guideline 306, which is more suitable for marine environments, has also been included. Where such data are not available, a BOD(5 days)/COD ratio ≥ 0.5 is considered as indicative of rapid degradation. Abiotic degradation such as hydrolysis, primary degradation, both abiotic and biotic, degradation in non-aquatic media and proven rapid degradation in the environment may all be considered in defining rapid degradability.

Substances are considered rapidly degradable in the environment if the following criteria are met:

- .1 In 28-day ready biodegradation studies, the following levels of degradation are achieved:
 - .1 tests based on dissolved organic carbon: 70%;
 - .2 tests based on oxygen depletion or carbon dioxide generation: 60% of theoretical maxima.

These levels of biodegradation shall be achieved within 10 days of the start of degradation which point is taken as the time when 10% of the substance has been degraded, unless the substance is identified as a complex, multi-component substance with structurally similar constituents. In this case, and where there is sufficient justification, the 10-day window condition may be waived and the pass level applied at 28 days;[†]

- .2 in those cases where only BOD and COD data are available, when the ratio of BOD₅/COD is ≥ 0.5 ; or
- .3 if other convincing scientific evidence is available to demonstrate that the substance or mixture can be degraded (biotically and/or abiotically) in the aquatic environment to a level above 70% within a 28-day period.

2.9.3.3 Substance classification categories and criteria

2.9.3.3.1 Substances shall be classified as “environmentally hazardous substances (aquatic environment)”, if they satisfy the criteria for Acute 1, Chronic 1 or Chronic 2, according to table 2.9.1. These criteria describe in detail the classification categories. They are diagrammatically summarized in table 2.9.2.

Table 2.9.1 – Categories for substances hazardous to the aquatic environment (see note 1)

(a) Acute (short-term) aquatic hazard

Category: Acute 1 (see note 2)	
96 hr LC ₅₀ (for fish)	≤ 1 mg/L and/or
48 hr EC ₅₀ (for crustacea)	≤ 1 mg/L and/or
72 or 96 hr ErC ₅₀ (for algae or other aquatic plants)	≤ 1 mg/L (see note 3)

(b) Long-term aquatic hazard (see also figure 2.9.1)

(i) Non-rapidly degradable substances (see note 4) for which there are adequate chronic toxicity data available

Category: Chronic 1 (see note 2)	
Chronic NOEC or EC _x (for fish)	≤ 0.1 mg/L and/or
Chronic NOEC or EC _x (for crustacea)	≤ 0.1 mg/L and/or
Chronic NOEC or EC _x (for algae or other aquatic plants)	≤ 0.1 mg/L
Category: Chronic 2	
Chronic NOEC or EC _x (for fish)	≤ 1 mg/L and/or
Chronic NOEC or EC _x (for crustacea)	≤ 1 mg/L and/or
Chronic NOEC or EC _x (for algae or other aquatic plants)	≤ 1 mg/L

(ii) Rapidly degradable substances for which there are adequate chronic toxicity data available

Category: Chronic 1 (see note 2)	
Chronic NOEC or EC _x (for fish)	≤ 0.01 mg/L and/or
Chronic NOEC or EC _x (for crustacea)	≤ 0.01 mg/L and/or
Chronic NOEC or EC _x (for algae or other aquatic plants)	≤ 0.01 mg/L
Category: Chronic 2	
Chronic NOEC or EC _x (for fish)	≤ 0.1 mg/L and/or
Chronic NOEC or EC _x (for crustacea)	≤ 0.1 mg/L and/or
Chronic NOEC or EC _x (for algae or other aquatic plants)	≤ 0.1 mg/L

(iii) Substances for which adequate chronic toxicity data are not available

Category: Chronic 1 (see note 2)	
96 hr LC ₅₀ (for fish)	≤ 1 mg/L and/or
48 hr EC ₅₀ (for crustacea)	≤ 1 mg/L and/or
72 or 96 hr ErC ₅₀ (for algae or other aquatic plants)	≤ 1 mg/L (see note 3)
and the substance is not rapidly degradable and/or the experimentally determined BCF is ≥ 500 (or, if absent, the log K _{ow} ≥ 4) (see notes 4 and 5)	
Category: Chronic 2	
96 hr LC ₅₀ (for fish)	> 1 but ≤ 10 mg/L and/or
48 hr EC ₅₀ (for crustacea)	> 1 but ≤ 10 mg/L and/or
72 or 96 hr ErC ₅₀ (for algae or other aquatic plants)	> 1 but ≤ 10 mg/L and/or (see note 3)
and the substance is not rapidly degradable and/or the experimentally determined BCF is ≥ 500 (or, if absent, the log K _{ow} ≥ 4) (see notes 4 and 5)	

Note 1: The organisms fish, crustacea and algae are tested as surrogate species covering a range of trophic levels and taxa, and the test methods are highly standardized. Data on other organisms may also be considered, however, provided they represent equivalent species and test endpoints.

Note 2: When classifying substances as Acute 1 and/or Chronic 1 it is necessary at the same time to indicate an appropriate M factor (see 2.9.3.4.6.4) to apply the summation method.

Note 3: Where the algal toxicity ErC₅₀ (= EC₅₀ (growth rate)) falls more than 100 times below the next most sensitive species and results in a classification based solely on this effect, consideration shall be given to whether this toxicity is representative of the toxicity to aquatic plants. Where it can be shown that this is not the case, professional judgment shall be used in deciding if classification shall be applied. Classification shall be based on the ErC₅₀. In circumstances where the basis of the EC₅₀ is not specified and no ErC₅₀ is recorded, classification shall be based on the lowest EC₅₀ available.

Note 4: Lack of rapid degradability is based on either a lack of ready biodegradability or other evidence of lack of rapid degradation. When no useful data on degradability are available, either experimentally determined or estimated data, the substance shall be regarded as not rapidly degradable.

Note 5: Potential to bioaccumulate, based on an experimentally derived BCF ≥ 500 or, if absent, a log K_{ow} ≥ 4 provided log K_{ow} is an appropriate descriptor for the bioaccumulation potential of the substance. Measured log K_{ow} values take precedence over estimated values and measured BCF values take precedence over log K_{ow} values.

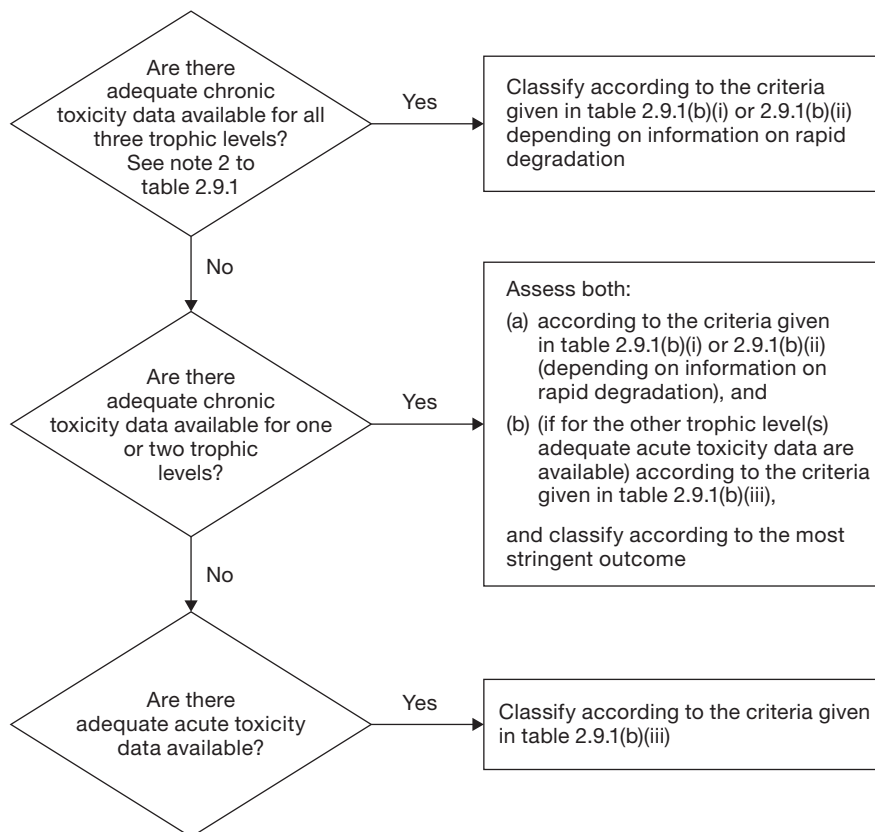


Figure 2.9.1 – Categories for substances long-term hazardous to the aquatic environment

2.9.3.3.2 The classification scheme in table 2.9.2 below summarizes the classification criteria for substances.

Table 2.9.2 – Classification scheme for substances hazardous to the aquatic environment

Classification categories			
Acute hazard (see note 1)	Long-term hazard (see note 2)		
	Adequate chronic toxicity data available		Adequate chronic toxicity data not available (see note 1)
	Non-rapidly degradable substances (see note 3)	Rapidly degradable substances (see note 3)	
Category: Acute 1	Category: Chronic 1	Category: Chronic 1	Category: Chronic 1
$L(E)C_{50} \leq 1.00$	$NOEC \text{ or } EC_x \leq 0.1$	$NOEC \text{ or } EC_x \leq 0.01$	$L(E)C_{50} \leq 1.00$ and lack of rapid degradability and/or $BCF \geq 500$ or, if absent, $\log K_{ow} \geq 4$
	Category: Chronic 2	Category: Chronic 2	Category: Chronic 2
	$0.1 < NOEC \text{ or } EC_x \leq 1$	$0.01 < NOEC \text{ or } EC_x \leq 0.1$	$1.00 < L(E)C_{50} \leq 10.0$ and lack of rapid degradability and/or $BCF \geq 500$ or, if absent, $\log K_{ow} \geq 4$

Note 1: Acute toxicity band based on $L(E)C_{50}$ values in mg/L for fish, crustacea and/or algae or other aquatic plants (or Quantitative Structure Activity Relationships (QSAR) estimation if no experimental data).

Note 2: Substances are classified in the various chronic categories unless there are adequate chronic toxicity data available for all three trophic levels above the water solubility or above 1 mg/L. (“Adequate” means that the data sufficiently cover the endpoint of concern. Generally this would mean measured test data, but in order to avoid unnecessary testing it can on a case by case basis also be estimated data, e.g. (Q)SAR, or for obvious cases expert judgment).

Note 3: Chronic toxicity band based on NOEC or equivalent EC_x values in mg/L for fish or crustacea or other recognized measures for chronic toxicity.

2.9.3.4 Mixtures classification categories and criteria

2.9.3.4.1 The classification system for mixtures covers the classification categories which are used for substances, meaning categories Acute 1 and Chronic 1 and 2. In order to make use of all available data for purposes of classifying the aquatic environmental hazards of the mixture, the following assumption is made and is applied where appropriate:

The “relevant ingredients” of a mixture are those which are present in a concentration equal to or greater than 0.1% (by mass) for ingredients classified as Acute and/or Chronic 1 and equal to or greater than 1% for other ingredients, unless there is a presumption (e.g. in the case of highly toxic ingredients) that an ingredient present at less than 0.1% can still be relevant for classifying the mixture for aquatic environmental hazards.

2.9.3.4.2 The approach for classification of aquatic environmental hazards is tiered, and is dependent upon the type of information available for the mixture itself and for its ingredients. Elements of the tiered approach include:

- .1 classification based on tested mixtures;
- .2 classification based on bridging principles;
- .3 the use of “summation of classified ingredients” and/or an “additivity formula”.

Figure 2.9.2 outlines the process to be followed.

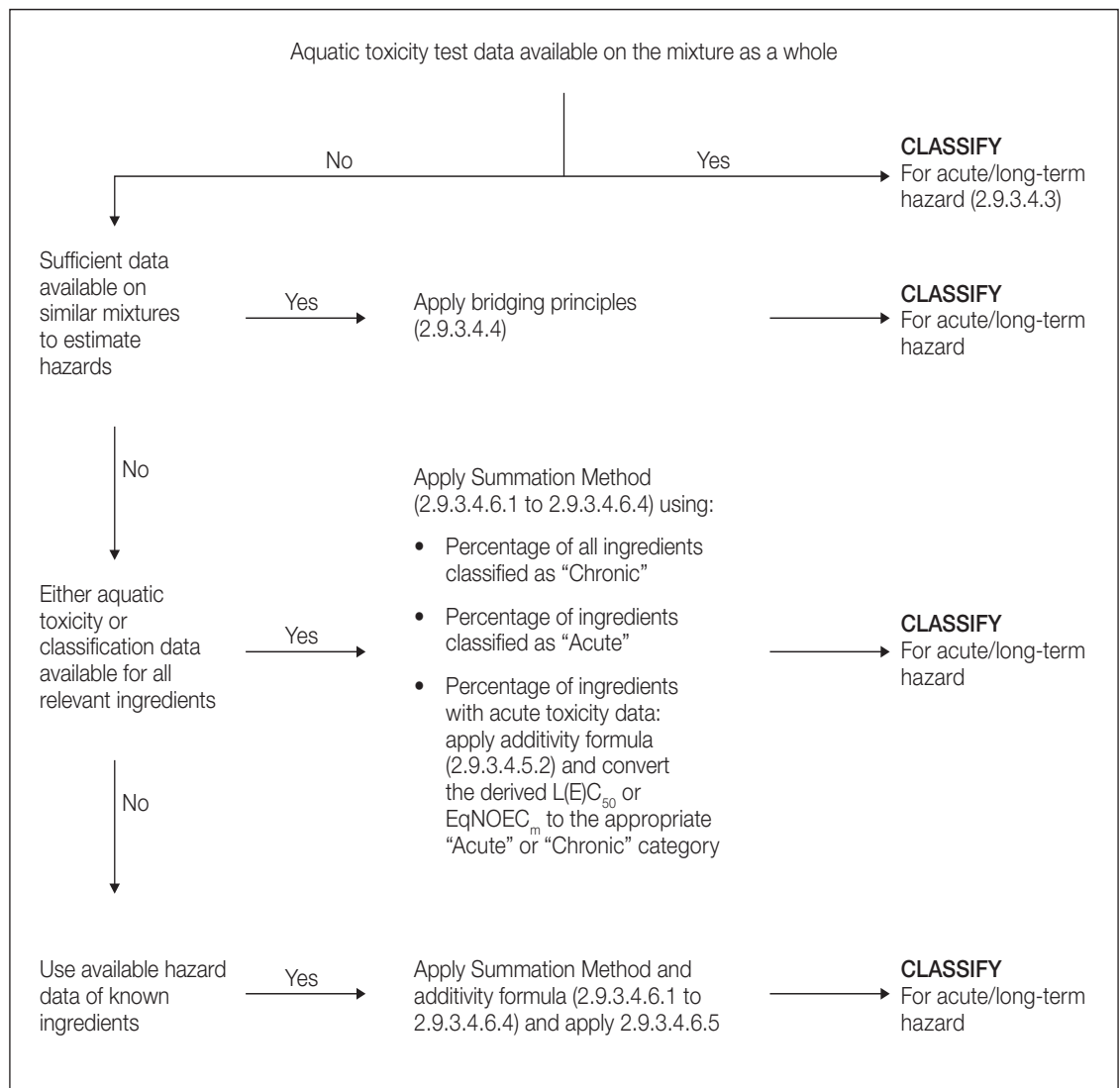


Figure 2.9.2 – Tiered approach to classification of mixtures for acute and long-term aquatic environmental hazards

2.9.3.4.3 Classification of mixtures when toxicity data are available for the complete mixture

2.9.3.4.3.1 When the mixture as a whole has been tested to determine its aquatic toxicity, this information shall be used for classifying the mixture according to the criteria that have been agreed for substances. The classification is normally based on the data for fish, crustacea and algae/plants (see 2.9.3.2.3 and 2.9.3.2.4). When adequate acute or chronic data for the mixture as a whole are lacking, "bridging principles" or "summation method" shall be applied (see 2.9.3.4.4 to 2.9.3.4.6).

2.9.3.4.3.2 The long-term hazard classification of mixtures requires additional information on degradability and in certain cases bioaccumulation. There are no degradability and bioaccumulation data for mixtures as a whole. Degradability and bioaccumulation tests for mixtures are not used as they are usually difficult to interpret, and such tests may be meaningful only for single substances.

2.9.3.4.3.3 Classification for category Acute 1

(a) When there are adequate acute toxicity test data (LC_{50} or EC_{50}) available for the mixture as a whole showing $L(E)C_{50} \leq 1$ mg/L:

Classify the mixture as Acute 1 in accordance with table 2.9.1 (a);

(b) When there are acute toxicity test data ($LC_{50}(s)$ or $EC_{50}(s)$) available for the mixture as a whole showing $L(E)C_{50}(s) > 1$ mg/L, or above the water solubility:

No need to classify for acute hazard under these Regulations.

2.9.3.4.3.4 Classification for categories Chronic 1 and 2

(a) When there are adequate chronic toxicity data (EC_x or NOEC) available for the mixture as a whole showing EC_x or NOEC of the tested mixture ≤ 1 mg/L:

(i) classify the mixture as Chronic 1 or 2 in accordance with table 2.9.1 (b)(ii) (rapidly degradable) if the available information allows the conclusion that all relevant ingredients of the mixture are rapidly degradable;

(ii) classify the mixture as Chronic 1 or 2 in all other cases in accordance with table 2.9.1 (b)(i) (non-rapidly degradable);

(b) When there are adequate chronic toxicity data (EC_x or NOEC) available for the mixture as a whole showing $EC_x(s)$ or NOEC(s) of the tested mixture > 1 mg/L or above the water solubility:

No need to classify for long-term hazard under these Regulations.

2.9.3.4.4 Classification of mixtures when toxicity data are not available for the complete mixture: bridging principles

2.9.3.4.4.1 Where the mixture itself has not been tested to determine its aquatic environmental hazard, but there are sufficient data on the individual ingredients and similar tested mixtures to adequately characterize the hazards of the mixture, these data shall be used in accordance with the following agreed bridging rules. This ensures that the classification process uses the available data to the greatest extent possible in characterizing the hazards of the mixture without the necessity for additional testing in animals.

2.9.3.4.4.2 Dilution

2.9.3.4.4.2.1 Where a new mixture is formed by diluting a tested mixture or a substance with a diluent which has an equivalent or lower aquatic hazard classification than the least toxic original ingredient and which is not expected to affect the aquatic hazards of other ingredients, then the resulting mixture shall be classified as equivalent to the original tested mixture or substance. Alternatively, the method explained in 2.9.3.4.5 may be applied.

2.9.3.4.4.2.2 If a mixture is formed by diluting another classified mixture or a substance with water or other totally non-toxic material, the toxicity of the mixture shall be calculated from the original mixture or substance.

2.9.3.4.4.3 Batching

2.9.3.4.4.3.1 The aquatic hazard classification of a tested production batch of a mixture shall be assumed to be substantially equivalent to that of another untested production batch of the same commercial product when produced by or under the control of the same manufacturer, unless there is reason to believe there is significant variation such that the aquatic hazard classification of the untested batch has changed. If the latter occurs, new classification is necessary.

2.9.3.4.4.4 Concentration of mixtures which are classified with the most severe classification categories (Chronic 1 and Acute 1)

2.9.3.4.4.4.1 If a tested mixture is classified as Chronic 1 and/or Acute 1, and the ingredients of the mixture which are classified as Chronic 1 and/or Acute 1 are further concentrated, the more concentrated untested mixture shall be classified with the same classification category as the original tested mixture without additional testing.

2.9.3.4.4.5 *Interpolation within one toxicity category*

2.9.3.4.4.5.1 For three mixtures (A, B and C) with identical ingredients, where mixtures A and B have been tested and are in the same toxicity category, and where untested mixture C has the same toxicologically active ingredients as mixtures A and B but has concentrations of toxicologically active ingredients intermediate to the concentrations in mixtures A and B, then mixture C is assumed to be in the same category as A and B.

2.9.3.4.4.6 *Substantially similar mixtures*

2.9.3.4.4.6.1 Given the following:

- (a) Two mixtures:
 - (i) A + B
 - (ii) C + B
- (b) The concentration of ingredient B is essentially the same in both mixtures;
- (c) The concentration of ingredient A in mixture (i) equals that of ingredient C in mixture (ii);
- (d) Data on aquatic hazards for A and C are available and are substantially equivalent, i.e. they are in the same hazard category and are not expected to affect the aquatic toxicity of B.

If mixture (i) or (ii) is already classified based on test data, then the other mixture can be assigned the same hazard category.

2.9.3.4.5 *Classification of mixtures when toxicity data are available for all ingredients or only for some ingredients of the mixture*

2.9.3.4.5.1 The classification of a mixture shall be based on summation of the concentrations of its classified ingredients. The percentage of ingredients classified as Acute or Chronic will feed straight into the summation method. Details of the summation method are described in 2.9.3.4.6.1 to 2.9.3.4.6.4.1.

2.9.3.4.5.2 Mixtures may be made of a combination of both ingredients that are classified (as Acute 1 and/or Chronic 1, 2) and those for which adequate toxicity test data are available. When adequate toxicity data are available for more than one ingredient in the mixture, the combined toxicity of those ingredients shall be calculated using the following additivity formulas (a) or (b), depending on the nature of the toxicity data:

(a) Based on acute aquatic toxicity:

$$\frac{\sum C_i}{L(E)C_{50m}} = \sum_n \frac{C_i}{L(E)C_{50i}}$$

- where: C_i = concentration of ingredient i (mass percentage);
- $L(E)C_{50i}$ = LC_{50} or EC_{50} for ingredient i (mg/L);
- n = number of ingredients, and i is running from 1 to n ; and
- $L(E)C_{50m}$ = $L(E)C_{50}$ of the part of the mixture with test data

The calculated toxicity shall be used to assign that portion of the mixture an acute hazard category which is then subsequently used in applying the summation method;

(b) Based on chronic aquatic toxicity:

$$\frac{\sum C_i + \sum C_j}{EqNOEC_m} = \sum_n \frac{C_i}{NOEC_i} + \sum_n \frac{C_j}{0.1 \times NOEC_j}$$

- where: C_i = concentration of ingredient i (mass percentage) covering the rapidly degradable ingredients;
- C_j = concentration of ingredient j (mass percentage) covering the non-rapidly degradable ingredients;
- $NOEC_i$ = NOEC (or other recognized measures for chronic toxicity) for ingredient i covering the rapidly degradable ingredients, in mg/L;
- $NOEC_j$ = NOEC (or other recognized measures for chronic toxicity) for ingredient j covering the non-rapidly degradable ingredients, in mg/L;
- n = number of ingredients, and i and j are running from 1 to n ;
- $EqNOEC_m$ = equivalent NOEC of the part of the mixture with test data;

The equivalent toxicity thus reflects the fact that non-rapidly degrading substances are classified one hazard category level more “severe” than rapidly degrading substances.

The calculated equivalent toxicity shall be used to assign that portion of the mixture a long-term hazard category, in accordance with the criteria for rapidly degradable substances (table 2.9.1 (b)(ii)), which is then subsequently used in applying the summation method.

2.9.3.4.5.3 When applying the additivity formula for part of the mixture, it is preferable to calculate the toxicity of this part of the mixture using for each ingredient toxicity values that relate to the same taxonomic group (i.e. fish, crustacea or algae) and then to use the highest toxicity (lowest value) obtained (i.e. use the most sensitive of the three groups). However, when toxicity data for each ingredient are not available in the same taxonomic group, the toxicity value of each ingredient shall be selected in the same manner that toxicity values are selected for the classification of substances, i.e. the higher toxicity (from the most sensitive test organism) is used. The calculated acute and chronic toxicity shall then be used to classify this part of the mixture as Acute 1 and/or Chronic 1 or 2 using the same criteria described for substances.

2.9.3.4.5.4 If a mixture is classified in more than one way, the method yielding the more conservative result shall be used.

2.9.3.4.6 *Summation method*

2.9.3.4.6.1 *Classification procedure*

2.9.3.4.6.1.1 In general a more severe classification for mixtures overrides a less severe classification, e.g. a classification with Chronic 1 overrides a classification with Chronic 2. As a consequence the classification procedure is already completed if the results of the classification is Chronic 1. A more severe classification than Chronic 1 is not possible; therefore, it is not necessary to pursue the classification procedure further.

2.9.3.4.6.2 *Classification for category Acute 1*

2.9.3.4.6.2.1 First, all ingredients classified as Acute 1 are considered. If the sum of the concentrations (in %) of these ingredients is greater than or equal to 25% the whole mixture shall be classified as Acute 1. If the result of the calculation is a classification of the mixture as Acute 1, the classification process is completed.

2.9.3.4.6.2.2 The classification of mixtures for acute hazards based on this summation of the concentrations of classified ingredients is summarized in table 2.9.3 below.

Table 2.9.3 – Classification of a mixture for acute hazards based on summation of the concentrations of classified ingredients

Sum of the concentrations (in %) of ingredients classified as:	Mixture is classified as:
$Acute\ 1 \times M^* \geq 25\%$	Acute 1

* For explanation of the *M* factor, see 2.9.3.4.6.4.

2.9.3.4.6.3 *Classification for categories Chronic 1 and 2*

2.9.3.4.6.3.1 First, all ingredients classified as Chronic 1 are considered. If the sum of the concentrations (in %) of these ingredients is greater than or equal to 25% the mixture shall be classified as Chronic 1. If the result of the calculation is a classification of the mixture as Chronic 1 the classification procedure is completed

2.9.3.4.6.3.2 In cases where the mixture is not classified as Chronic 1, classification of the mixture as Chronic 2 is considered. A mixture shall be classified as Chronic 2 if 10 times the sum of the concentrations (in %) of all ingredients classified as Chronic 1 plus the sum of the concentrations (in %) of all ingredients classified as Chronic 2 is greater than or equal to 25%. If the result of the calculation is classification of the mixture as Chronic 2, the classification process is completed.

2.9.3.4.6.3.3 The classification of mixtures for long-term hazards based on this summation of the concentrations of classified ingredients is summarized in table 2.9.4 below.

Table 2.9.4 – Classification of a mixture for long-term hazards based on summation of the concentrations of classified ingredients

Sum of the concentrations (in %) of ingredients classified as:	Mixture classified as:
$Chronic\ 1 \times M^* \geq 25\%$	Chronic 1
$(M \times 10 \times Chronic\ 1) + Chronic\ 2 \geq 25\%$	Chronic 2

* For explanation of the *M* factor, see 2.9.3.4.6.4.

2.9.3.4.6.4 *Mixtures with highly toxic ingredients*

2.9.3.4.6.4.1 Acute 1 or Chronic 1 ingredients with acute toxicities well below 1 mg/L and/or chronic toxicities well below 0.1 mg/L (if non-rapidly degradable) and 0.01 mg/L (if rapidly degradable) may influence the toxicity of the mixture and are given increased weight in applying the summation method. When a mixture contains ingredients classified as Acute 1 or Chronic 1, the tiered approach described in 2.9.3.4.6.2 and 2.9.3.4.6.3 shall be applied using a weighted sum by multiplying the concentrations of Acute 1 and Chronic 1 ingredients by a factor, instead of merely adding up the percentages. This means that the concentration of Acute 1 in the left column of table 2.9.3 and the concentration of Chronic 1 in the left column of table 2.9.4 are multiplied by the appropriate multiplying factor. The multiplying factors to be applied to these ingredients are defined using the toxicity value, as summarized in table 2.9.5 below. Therefore, in order to classify a mixture containing Acute 1 and/or Chronic 1 ingredients, the classifier needs to be informed of the value of the *M* factor in order to apply the summation method. Alternatively, the additivity formula (2.9.3.4.5.2) may be used when toxicity data are available for all highly toxic ingredients in the mixture and there is convincing evidence that all other ingredients, including those for which specific acute and/or chronic toxicity data are not available, are of low or no toxicity and do not significantly contribute to the environmental hazard of the mixture.

Table 2.9.5 – Multiplying factors for highly toxic ingredients of mixtures

Acute toxicity L(E)C ₅₀ value	M factor	Chronic toxicity NOEC value	M factor	
			NRD* ingredients	RD† ingredients
0.1 < L(E)C ₅₀ ≤ 1	1	0.01 < NOEC ≤ 0.1	1	–
0.01 < L(E)C ₅₀ ≤ 0.1	10	0.001 < NOEC ≤ 0.01	10	1
0.001 < L(E)C ₅₀ ≤ 0.01	100	0.0001 < NOEC ≤ 0.001	100	10
0.0001 < L(E)C ₅₀ ≤ 0.001	1,000	0.00001 < NOEC ≤ 0.0001	1,000	100
0.00001 < L(E)C ₅₀ ≤ 0.0001	10,000	0.000001 < NOEC ≤ 0.00001	10,000	1,000
(continue in factor 10 intervals)		(continue in factor 10 intervals)		

* Non-rapidly degradable.

† Rapidly degradable.

2.9.3.4.6.5 *Classification of mixtures with ingredients without any useable information*

2.9.3.4.6.5.1 In the event that no useable information on acute and/or chronic aquatic toxicity is available for one or more relevant ingredients, it is concluded that the mixture cannot be attributed (a) definitive hazard category(ies). In this situation the mixture shall be classified based on the known ingredients only with the additional statement that: “x percent of the mixture consists of ingredient(s) of unknown hazards to the aquatic environment.”

2.9.4 **Lithium batteries**

Cells and batteries, cells and batteries contained in equipment, or cells and batteries packed with equipment, containing lithium in any form shall be assigned to UN Nos. 3090, 3091, 3480 or 3481 as appropriate. They may be transported under these entries if they meet the following provisions:

.1 Each cell or battery is of the type proved to meet the requirements of each test of the Manual of Tests and Criteria, part III, subsection 38.3. Cells and batteries manufactured according to a type meeting the requirements of subsection 38.3 of the Manual of Tests and Criteria, revision 3, amendment 1 or any subsequent revision and amendment applicable at the date of the type testing may continue to be transported, unless otherwise provided in this Code.

Cell and battery types only meeting the requirements of the Manual of Tests and Criteria, revision 3, are no longer valid. However, cells and batteries manufactured in conformity with such types before 1 July 2003 may continue to be transported if all other applicable requirements are fulfilled.

Note: Batteries shall be of a type proved to meet the testing requirements of the Manual of Tests and Criteria, part III, subsection 38.3, irrespective of whether the cells of which they are composed are of a tested type.

.2 Each cell and battery incorporates a safety venting device or is designed to preclude a violent rupture under conditions normally incident to transport.

.3 Each cell and battery is equipped with an effective means of preventing external short circuits.

- .4 Each battery containing cells or series of cells connected in parallel is equipped with effective means as necessary to prevent dangerous reverse current flow (e.g. diodes, fuses, etc.).
- .5 Cells and batteries shall be manufactured under a quality management programme that includes:
 - .1 a description of the organizational structure and responsibilities of personnel with regard to design and product quality;
 - .2 the relevant inspection and test, quality control, quality assurance, and process operation instructions that will be used;
 - .3 process controls that should include relevant activities to prevent and detect internal short circuit failure during manufacture of cells;
 - .4 quality records, such as inspection reports, test data, calibration data and certificates. Test data shall be kept and made available to the competent authority upon request;
 - .5 management reviews to ensure the effective operation of the quality management programme;
 - .6 a process for control of documents and their revision;
 - .7 a means for control of cells or batteries that are not conforming to the type tested as mentioned in 2.9.4.1 above;
 - .8 training programmes and qualification procedures for relevant personnel; and
 - .9 procedures to ensure that there is no damage to the final product.

Note: In-house quality management programmes may be accepted. Third party certification is not required, but the procedures listed in .1 to .9 above shall be properly recorded and traceable. A copy of the quality management programme shall be made available to the competent authority upon request.

Chapter 2.10

Marine pollutants

2.10.1 Definition

Marine pollutants means substances which are subject to the provisions of Annex III of MARPOL, as amended.

2.10.2 General provisions

2.10.2.1 Marine pollutants shall be transported under the provisions of Annex III of MARPOL, as amended.

2.10.2.2 The Index indicates by the symbol **P** in the column headed **MP** those substances, materials and articles that are identified as marine pollutants.

2.10.2.3 Marine pollutants shall be transported under the appropriate entry according to their properties if they fall within the criteria of any of the classes 1 to 8. If they do not fall within the criteria of any of these classes, they shall be transported under the entry: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S., UN 3077 or ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S., UN 3082, as appropriate, unless there is a specific entry in class 9.

2.10.2.4 Column 4 of the Dangerous Goods List also provides information on marine pollutants using the symbol **P** for single entries. The absence of the symbol **P** or the presence of a “–” in that column does not preclude the application of 2.10.3.

2.10.2.5 When a substance, material or article possesses properties that meet the criteria of a marine pollutant but is not identified in this Code, such substance, material or article shall be transported as a marine pollutant in accordance with the Code.

2.10.2.6 With the approval of the competent authority (see 7.9.2), substances, materials or articles that are identified as marine pollutants in this Code but which no longer meet the criteria as a marine pollutant need not be transported in accordance with the provisions of this Code applicable to marine pollutants.

2.10.2.7 Marine pollutants packaged in single or combination packagings containing a net quantity per single or inner packaging of 5 L or less for liquids or having a net mass per single or inner packaging of 5 kg or less for solids are not subject to any other provisions of this Code relevant to marine pollutants provided the packagings meet the general provisions of 4.1.1.1, 4.1.1.2 and 4.1.1.4 to 4.1.1.8. In the case of marine pollutants also meeting the criteria for inclusion in another hazard class, all provisions of this Code relevant to any additional hazards continue to apply.

2.10.3 Classification

2.10.3.1 Marine pollutants shall be classified in accordance with chapter 2.9.3.

2.10.3.2 The classification criteria of 2.9.3 are not applicable to substances or materials of class 7.

PART 3

**DANGEROUS GOODS LIST,
SPECIAL PROVISIONS AND EXCEPTIONS**

Chapter 3.1

General

3.1.1 Scope and general provisions

- 3.1.1.1 The Dangerous Goods List in chapter 3.2 lists many of the dangerous goods most commonly transported. The list includes entries for specific chemical substances and articles and generic or “not otherwise specified” entries. Since it is not practical to include a separate entry for every chemical substance or article of commercial importance specifically by name, especially names for mixtures and solutions of various chemical constituents and concentrations, the Dangerous Goods List also includes generic or “not otherwise specified” names (e.g. EXTRACTS, FLAVOURING, LIQUID, UN 1197 or FLAMMABLE LIQUID, N.O.S., UN 1993). On this basis, the Dangerous Goods List is intended to include an appropriate name or entry for any dangerous good which may be transported.
- 3.1.1.2 Where a dangerous good is specifically listed by name in the Dangerous Goods List, it shall be transported in accordance with the provisions in the List which are appropriate for that dangerous good. A generic or “not otherwise specified” entry may be used to permit the transport of substances, materials or articles which do not appear specifically by name in the Dangerous Goods List. Such a dangerous good may be transported only after its dangerous properties have been determined. Dangerous goods shall be classified according to the class definitions, tests and criteria. The name which most appropriately describes the dangerous goods shall be used. Only when the specific name of the dangerous goods does not appear in the Dangerous Goods List or the associated primary or subsidiary hazards assigned to it are not appropriate may a generic or “not otherwise specified” name be used. The classification shall be made by the shipper/consignor or by the appropriate competent authority where so specified in the Code. Once the class of the dangerous good has been so established, all conditions for transport, as provided in this Code, shall be met. Any dangerous good having or suspected of having explosive characteristics shall first be considered for inclusion in class 1. Some collective entries may be of the generic or “not otherwise specified” type provided that the Code contains provisions ensuring safety, both by excluding extremely dangerous goods from normal transport and by covering all subsidiary risks inherent in some goods.
- 3.1.1.3 Inherent instability in goods may take different dangerous forms, for example explosion, polymerization with intense evolution of heat or emission of flammable, toxic, corrosive or asphyxiant gases. The Dangerous Goods List indicates that certain dangerous goods, or dangerous goods in a specific form, concentration or state, are prohibited for transport by sea. This means that the goods specified are not suitable for transport by sea under normal conditions of transport. This does not mean that such goods may not be transported under any circumstances. For most goods, such inherent instability can be controlled by suitable packaging, dilution, stabilization, addition of an inhibitor, temperature control or other measures.
- 3.1.1.4 Where precautionary measures are laid down in the Dangerous Goods List in respect of a given dangerous good (such as that it shall be “stabilized” or “with x% water or phlegmatizer”), such dangerous good may not normally be transported when these measures have not been taken, unless the item in question is listed elsewhere (such as class 1) without any indication of, or with different, precautionary measures.
- 3.1.1.5 Certain substances, by the nature of their chemical composition, tend to polymerize or otherwise react in a dangerous manner under certain conditions of temperature or in contact with a catalyst. Mitigation of this tendency can be carried out either by requiring special transport conditions or by adding adequate amounts of chemical inhibitors or stabilizers to the product. These products shall be sufficiently stabilized to prevent any dangerous reaction during the intended voyage. If this cannot be ensured, the transport of such products is prohibited.
- 3.1.1.6 Where the contents of a portable tank is to be transported heated, the transport temperature is to be maintained during the intended voyage unless it is established that crystallization or solidification on cooling would not result in instability, which can occur with some stabilized or inhibited products.

3.1.2 Proper shipping names

Note 1: The proper shipping names of the dangerous goods are those listed in chapter 3.2, Dangerous Goods List. Synonyms, secondary names, initials, abbreviations of names, etc. have been included in the Index to facilitate the search for the proper shipping name (see part 5, Consignment procedures).

Note 2: For proper shipping names to be used for transport of samples, see 2.0.4. For proper shipping names to be used for transport of wastes, see 5.4.1.4.3.3.

3.1.2.1 The proper shipping name is that portion of the entry most accurately describing the goods in the Dangerous Goods List, which is shown in upper-case characters (plus any numbers, Greek letters, 'sec', 'tert', and the letters *m*, *n*, *o*, *p*, which form an integral part of the name). An alternative proper shipping name may be shown in brackets following the main proper shipping name (such as ETHANOL (ETHYL ALCOHOL)). Portions of an entry appearing in lower case need not be considered as part of the proper shipping name but may be used.

3.1.2.2 When conjunctions such as "and" or "or" are in lower case or when segments of the name are punctuated by commas, the entire name of the entry need not necessarily be shown in the transport document or package marks. This is the case particularly when a combination of several distinct entries are listed under a single UN number. Examples illustrating the selection of the proper shipping name for such entries are:

.1 UN 1057 LIGHTERS or LIGHTER REFILLS – The proper shipping name is the most appropriate of the following possible combinations:

LIGHTERS

LIGHTER REFILLS;

.2 UN 2583 ALKYL SULPHONIC ACIDS, SOLID or ARYL SULPHONIC ACIDS, SOLID with more than 5% free sulphuric acid – The proper shipping name is the most appropriate of the following:

ALKYL SULPHONIC ACIDS, SOLID

ARYL SULPHONIC ACIDS, SOLID;

.3 UN 2793 FERROUS METAL BORINGS, SHAVINGS, TURNINGS or CUTTINGS in a form liable to self-heating. The proper shipping name is the most appropriate of the following combinations:

FERROUS METAL BORINGS

FERROUS METAL SHAVINGS

FERROUS METAL TURNINGS

FERROUS METAL CUTTINGS.

3.1.2.3 Proper shipping names may be used in the singular or plural as appropriate. In addition, when qualifying words are used as part of the proper shipping name, their sequence on documentation or packages is optional. Commercial or military names for goods of class 1, which contain the proper shipping name supplemented by additional text, may be used.

3.1.2.4 Many substances have an entry for both the liquid and solid state (see definitions for *liquids* and *solids* in 1.2.1), or for the solid and solution. These are allocated separate UN numbers which are not necessarily adjacent to each other. Details are provided in the alphabetical index, e.g.:

NITROXYLENES, LIQUID – 6.1 1665

NITROXYLENES, SOLID – 6.1 3447.

3.1.2.5 Where it is not already included, the qualifying word "MOLTEN" shall be added to the proper shipping name when a substance which is solid in accordance with the definition in 1.2.1 is offered for transport in the molten state (such as ALKYLPHENOL, SOLID, N.O.S., MOLTEN). For elevated temperature substances, see 5.4.1.4.3.4.

3.1.2.6 Except for self-reactive substances and organic peroxides and unless it is already included in capital letters in the name indicated in the Dangerous Goods List, the word STABILIZED shall be added as part of the proper shipping name of the substance which without stabilization would be forbidden from transport in accordance with 1.1.3 due to it being liable to dangerously react under conditions normally encountered in transport (such as TOXIC LIQUID, ORGANIC, N.O.S., STABILIZED). When temperature control is used to stabilize such substances to prevent the development of any dangerous excess pressure, or the evolution of excessive heat, or when chemical stabilization is used in combination with temperature control, then:

.1 For liquids and solids where the SAPT (measured without or with inhibitor, when chemical stabilization is applied) is less than or equal to that prescribed in 2.4.2.5.2, special provision 386 of chapter 3.3 and the provisions of 7.3.7 apply;

.2 For gases: the conditions of transport shall be approved by the competent authority.

3.1.2.7 Hydrates may be transported under the proper shipping name for the anhydrous substance.

3.1.2.8 Generic or “not otherwise specified” (N.O.S.) entries

3.1.2.8.1 Generic and “not otherwise specified” proper shipping names that are assigned to special provision 274 or 318 in column 6 of the Dangerous Goods List shall be supplemented with the technical or chemical group names unless a national law or international convention prohibits its disclosure if it is a controlled substance. For explosives of class 1, the dangerous goods description may be supplemented by additional descriptive text to indicate commercial or military names. Technical and chemical group names shall be entered in brackets immediately following the proper shipping name. An appropriate modifier, such as “contains” or “containing” or other qualifying words such as “mixture”, “solution”, etc., and the percentage of the technical constituent may also be used. For example: “UN 1993 Flammable liquid, n.o.s. (contains xylene and benzene), 3, PG II”.

3.1.2.8.1.1 The technical name shall be a recognized chemical or biological name or other name currently used in scientific and technical handbooks, journals and texts. Trade names shall not be used for this purpose. In the case of pesticides, only ISO common name(s), other name(s) in *The WHO Recommended Classification of Pesticides by Hazard and Guidelines to Classification*, or the name(s) of the active substance(s) may be used.

3.1.2.8.1.2 When a mixture of dangerous goods is described by one of the “N.O.S.” or “generic” entries to which special provision 274 has been allocated in the Dangerous Goods List, not more than the two constituents which most predominantly contribute to the hazard or hazards of a mixture need to be shown, excluding controlled substances when their disclosure is prohibited by national law or international convention. If a package containing a mixture is labelled with any subsidiary risk label, one of the two technical names shown in brackets shall be the name of the constituent which compels the use of the subsidiary risk label.

3.1.2.8.1.3 Examples illustrating the selection of the proper shipping name supplemented with the technical name of goods for such N.O.S. entries are:

UN 2902 PESTICIDE, LIQUID, TOXIC, N.O.S. (drazoxolon)

UN 3394 ORGANOMETALLIC SUBSTANCE, LIQUID, PYROPHORIC, WATER-REACTIVE
(trimethylgallium).

3.1.2.9 Marine pollutants

3.1.2.9.1 For the purpose of documentation, the proper shipping name of generic or “not otherwise specified” (N.O.S.) entries which are classified as marine pollutants in accordance with 2.10.3, shall be supplemented with the recognized chemical name of the constituent which most predominantly contributes to the classification as marine pollutant.

3.1.2.9.2 Examples illustrating the selection of the proper shipping name supplemented with the recognized technical name of goods for such entries are indicated below:

UN 1993 FLAMMABLE LIQUID, N.O.S. (propyl acetate, di-n-butyltin di-2-ethylhexanoate) class 3 PG III
(50°C c.c.) MARINE POLLUTANT

UN 1263 PAINT (triethylbenzene) class 3 PG III (27°C c.c.) MARINE POLLUTANT

3.1.3 Mixtures or solutions

Note: Where a substance is specifically listed by name in the Dangerous Goods List, it shall be identified in transport by the proper shipping name in the Dangerous Goods List. Such substances may contain technical impurities (for example those deriving from the production process) or additives for stability or other purposes that do not affect their classification. However, a substance listed by name containing technical impurities or additives for stability or other purposes affecting its classification shall be considered a mixture or solution (see 2.0.2.2 and 2.0.2.5).

3.1.3.1 A mixture or solution is not subject to the provisions of this Code if the characteristics, properties, form or physical state of the mixture or solution are such that it does not meet the criteria, including human experience criteria, for inclusion in any class.

3.1.3.2 A mixture or solution meeting the classification criteria of this Code composed of a single predominant substance identified by name in the Dangerous Goods List and one or more substances not subject to the provisions of this Code and/or traces of one or more substances identified by name in the Dangerous Goods List, shall be assigned the UN number and proper shipping name of the predominant substance named in the Dangerous Goods List unless:

- .1 the mixture or solution is identified by name in the Dangerous Goods List;
- .2 the name and description of the substance named in the Dangerous Goods List specifically indicate that they apply only to the pure substance;
- .3 the hazard class or division, subsidiary risk(s), packing group, or physical state of the mixture or solution is different from that of the substance named in the Dangerous Goods List; or

- .4 the hazard characteristics and properties of the mixture or solution necessitate emergency response measures that are different from those required for the substance identified by name in the Dangerous Goods List.

3.1.3.3 Qualifying words such as "MIXTURE" or "SOLUTION", as appropriate, shall be added as part of the proper shipping name, for example, "ACETONE SOLUTION". In addition, the concentration of the mixture or solution may also be indicated after the basic description of the mixture or solution, for example, "ACETONE 75% SOLUTION".

3.1.3.4 A mixture or solution meeting the classification criteria of this Code that is not identified by name in the Dangerous Goods List and that is composed of two or more dangerous goods shall be assigned to an entry that has the proper shipping name, description, hazard class or division, subsidiary risk(s) and packing group that most precisely describe the mixture or solution.

3.1.4 Segregation groups

3.1.4.1 For the purpose of segregation, dangerous goods having certain similar chemical properties have been grouped together in segregation groups, see 7.2.5. Where, in the Dangerous Goods List entry in column 16b (segregation), a particular segregation requirement refers to a group of substances, the particular segregation requirement applies to the goods allocated to the respective segregation group.

3.1.4.2 It is recognized that not all substances, mixtures, solutions or preparations falling within a segregation group are listed in the IMDG Code by name. These are shipped under N.O.S. entries. Although these N.O.S. entries are not themselves listed in the segregation groups (see 3.1.4.4), the consignor shall decide whether inclusion under the segregation group is appropriate and, if so, shall mention that fact in the transport document (see 5.4.1.5.11).

3.1.4.3 The segregation groups in this Code do not cover substances which fall outside the classification criteria of the Code. It is recognized that some non-hazardous substances have similar chemical properties as substances listed in the segregation groups. A consignor or the person responsible for packing the goods into a cargo transport unit who does have knowledge of the chemical properties of such non-dangerous goods may decide to implement the segregation provisions of a related segregation group on a voluntary basis.

3.1.4.4 The following segregation groups are identified.

1 Acids

1052	Hydrogen fluoride, anhydrous*
1182	Ethyl chloroformate
1183	Ethyldichlorosilane
1238	Methyl chloroformate
1242	Methyldichlorosilane
1250	Methyltrichlorosilane
1295	Trichlorosilane
1298	Trimethylchlorosilane
1305	Vinyltrichlorosilane
1572	Cacodylic acid
1595	Dimethyl sulphate
1715	Acetic anhydride
1716	Acetyl bromide
1717	Acetyl chloride
1718	Butyl acid phosphate
1722	Allyl chloroformate
1723	Allyl iodide
1724	Allyltrichlorosilane, stabilized
1725	Aluminium bromide, anhydrous
1726	Aluminium chloride, anhydrous
1727	Ammonium hydrogendifluoride, solid
1728	Amyltrichlorosilane
1729	Anisoyl chloride

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1730	Antimony pentachloride, liquid
1731	Antimony pentachloride solution
1732	Antimony pentafluoride
1733	Antimony trichloride
1736	Benzoyl chloride
1737	Benzyl bromide
1738	Benzyl chloride
1739	Benzyl chloroformate
1740	Hydrogendifluorides, n.o.s.
1742	Boron trifluoride acetic acid complex, liquid
1743	Boron trifluoride propionic acid complex, liquid
1744	Bromine or bromine solution
1745	Bromine pentafluoride
1746	Bromine trifluoride
1747	Butyltrichlorosilane
1750	Chloroacetic acid solution
1751	Chloroacetic acid, solid
1752	Chloroacetyl chloride
1753	Chlorophenyltrichlorosilane
1754	Chlorosulphonic acid (with or without sulphur trioxide)
1755	Chromic acid solution
1756	Chromic fluoride, solid
1757	Chromic fluoride solution
1758	Chromium oxychloride
1762	Cyclohexenyltrichlorosilane
1763	Cyclohexyltrichlorosilane
1764	Dichloroacetic acid
1765	Dichloroacetyl chloride
1766	Dichlorophenyltrichlorosilane
1767	Diethyldichlorosilane
1768	Difluorophosphoric acid, anhydrous
1769	Diphenyldichlorosilane
1770	Diphenylmethyl bromide
1771	Dodecyltrichlorosilane
1773	Ferric chloride, anhydrous
1775	Fluoroboric acid
1776	Fluorophosphoric acid, anhydrous
1777	Fluorosulphonic acid*
1778	Fluorosilicic acid
1779	Formic acid with more than 85% acid by mass
1780	Fumaryl chloride
1781	Hexadecyltrichlorosilane
1782	Hexafluorophosphoric acid
1784	Hexyltrichlorosilane
1786	Hydrofluoric acid and sulphuric acid mixture*
1787	Hydriodic acid*
1788	Hydrobromic acid*
1789	Hydrochloric acid*
1790	Hydrofluoric acid*
1792	Iodine monochloride, solid

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1793	Isopropyl acid phosphate
1794	Lead sulphate with more than 3% free acid
1796	Nitrating acid mixture*
1798	Nitrohydrochloric acid*
1799	Nonyltrichlorosilane
1800	Octadecyltrichlorosilane
1801	Octyltrichlorosilane
1802	Perchloric acid with not more than 50% acid, by mass*
1803	Phenolsulphonic acid, liquid
1804	Phenyltrichlorosilane
1805	Phosphoric acid, solution
1806	Phosphorus pentachloride
1807	Phosphorus pentoxide
1808	Phosphorus tribromide
1809	Phosphorus trichloride
1810	Phosphorus oxychloride
1811	Potassium hydrogendifluoride, solid
1815	Propionyl chloride
1816	Propyltrichlorosilane
1817	Pyrosulphuryl chloride
1818	Silicon tetrachloride
1826	Nitrating acid mixture, spent*
1827	Stannic chloride, anhydrous
1828	Sulphur chlorides
1829	Sulphur trioxide, inhibited or sulphur trioxide, stabilized
1830	Sulphuric acid with more than 51% acid*
1831	Sulphuric acid, fuming*
1832	Sulphuric acid, spent*
1833	Sulphurous acid
1834	Sulphuryl chloride
1836	Thionyl chloride
1837	Thiophosphoryl chloride
1838	Titanium tetrachloride
1839	Trichloroacetic acid
1840	Zinc chloride solution
1848	Propionic acid with not less than 10% and less than 90% acid, by mass
1873	Perchloric acid with more than 50% but not more than 72% acid, by mass*
1898	Acetyl iodide
1902	Diisooctyl acid phosphate
1905	Selenic acid
1906	Sludge acid*
1938	Bromoacetic acid solution
1939	Phosphorus oxybromide
1940	Thioglycolic acid
2031	Nitric acid, other than red fuming*
2032	Nitric acid, red fuming*
2214	Phthalic anhydride with more than 0.05% of maleic anhydride
2215	Maleic anhydride
2218	Acrylic acid, inhibited
2225	Benzenesulphonyl chloride

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2226	Benzotrichloride
2240	Chromosulphuric acid*
2262	Dimethylcarbamoyl chloride
2267	Dimethyl thiophosphoryl chloride
2305	Nitrobenzenesulphonic acid
2308	Nitrosylsulphuric acid, liquid*
2331	Zinc chloride, anhydrous
2353	Butyryl chloride
2395	Isobutyryl chloride
2407	Isopropyl chloroformate
2434	Dibenzoyldichlorosilane
2435	Ethylphenyldichlorosilane
2437	Methylphenyldichlorosilane
2438	Trimethylacetyl chloride
2439	Sodium hydrogendifluoride
2440	Stannic chloride pentahydrate
2442	Trichloroacetyl chloride
2443	Vanadium oxytrichloride
2444	Vanadium tetrachloride
2475	Vanadium trichloride
2495	Iodine pentafluoride
2496	Propionic anhydride
2502	Valeryl chloride
2503	Zirconium tetrachloride
2506	Ammonium hydrogen sulphate
2507	Chloroplatinic acid, solid
2508	Molybdenum pentachloride
2509	Potassium hydrogen sulphate
2511	2-Chloropropionic acid
2513	Bromoacetyl bromide
2531	Methacrylic acid, stabilized
2564	Trichloroacetic acid solution
2571	Alkylsulphuric acids
2576	Phosphorus oxybromide, molten
2577	Phenylacetyl chloride
2578	Phosphorus trioxide
2580	Aluminium bromide solution
2581	Aluminium chloride solution
2582	Ferric chloride solution
2583	Alkylsulphonic acids, solid or arylsulphonic acids, solid with more than 5% free sulphuric acid
2584	Alkylsulphonic acids, liquid or arylsulphonic acids, liquid with more than 5% free sulphuric acid
2585	Alkylsulphonic acids, solid or arylsulphonic acids, solid with not more than 5% free sulphuric acid
2586	Alkylsulphonic acids, liquid or arylsulphonic acids, liquid with not more than 5% free sulphuric acid
2604	Boron trifluoride diethyl etherate
2626	Chloric acid, aqueous solution with not more than 10% chloric acid
2642	Fluoroacetic acid
2670	Cyanuric chloride
2691	Phosphorus pentabromide
2692	Boron tribromide

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2698	Tetrahydrophthalic anhydrides with more than 0.05% maleic anhydride
2699	Trifluoroacetic acid
2739	Butyric anhydride
2740	Propyl chloroformate
2742	Chloroformates, toxic, corrosive, flammable, n.o.s.
2743	<i>n</i> -Butyl chloroformate
2744	Cyclobutyl chloroformate
2745	Chloromethyl chloroformate
2746	Phenyl chloroformate
2748	2-Ethylhexyl chloroformate
2751	Diethylthiophosphoryl chloride
2789	Acetic acid, glacial or acetic acid solution, more than 80% acid, by mass
2790	Acetic acid solution, more than 10% but not more than 80% acid, by mass
2794	Batteries, wet, filled with acid electric storage
2796	Sulphuric acid with not more than 51% acid or battery fluid, acid*
2798	Phenylphosphorus dichloride
2799	Phenylphosphorus thiodichloride
2802	Copper chloride
2817	Ammonium hydrogendifluoride solution
2819	Amyl acid phosphate
2820	Butyric acid
2823	Crotonic acid, solid
2826	Ethyl chlorothioformate
2829	Caproic acid
2834	Phosphorous acid
2851	Boron trifluoride dihydrate
2865	Hydroxylamine sulphate
2869	Titanium trichloride mixture
2879	Selenium oxychloride
2967	Sulphamic acid
2985	Chlorosilanes, flammable, corrosive, n.o.s.
2986	Chlorosilanes, corrosive, flammable, n.o.s.
2987	Chlorosilanes, corrosive, n.o.s.
2988	Chlorosilanes, water-reactive, flammable, corrosive, n.o.s.
3246	Methanesulphonyl chloride
3250	Chloroacetic acid, molten
3260	Corrosive solid, acidic, inorganic, n.o.s.
3261	Corrosive solid, acidic, organic, n.o.s.
3264	Corrosive liquid, acidic, inorganic, n.o.s.
3265	Corrosive liquid, acidic, organic, n.o.s.
3277	Chloroformates, toxic, corrosive, n.o.s.
3361	Chlorosilanes, toxic, corrosive, n.o.s.
3362	Chlorosilanes, toxic, corrosive, flammable, n.o.s.
3412	Formic acid with not less than 10% but not more than 85% acid by mass
3412	Formic acid with not less than 5% but not more than 10% acid by mass
3419	Boron trifluoride acetic acid complex, solid
3420	Boron trifluoride propionic acid complex, solid
3421	Potassium hydrogendifluoride solution
3425	Bromoacetic acid, solid
3453	Phosphoric acid, solid

- 3456 Nitrosylsulphuric acid, solid
 - 3463 Propionic acid with not less than 90% acid by mass
 - 3472 Crotonic acid, liquid
 - 3498 Iodine monochloride, liquid
- * identifies strong acids

2 Ammonium compounds

- 0004 Ammonium picrate dry or wetted with less than 10% water, by mass
- 0222 Ammonium nitrate, with more than 0.2% combustible substances
- 0402 Ammonium perchlorate
- 1310 Ammonium picrate, wetted with not less than 10% water, by mass
- 1439 Ammonium dichromate
- 1442 Ammonium perchlorate
- 1444 Ammonium persulphate
- 1512 Zinc ammonium nitrite
- 1546 Ammonium arsenate
- 1630 Mercury ammonium chloride
- 1727 Ammonium hydrogendifluoride, solid
- 1835 Tetramethylammonium hydroxide solution
- 1843 Ammonium dinitro-*o*-cresolate, solid
- 1942 Ammonium nitrate with not more than 0.2% combustible substances
- 2067 Ammonium nitrate based fertilizer
- 2071 Ammonium nitrate based fertilizer
- 2073 Ammonia solution, relative density less than 0.880 at 15°C in water, with more than 35% but not more than 50% ammonia
- 2426 Ammonium nitrate, liquid (hot concentrated solution)
- 2505 Ammonium fluoride
- 2506 Ammonium hydrogen sulphate
- 2683 Ammonium sulphide solution
- 2687 Dicyclohexylammonium nitrite
- 2817 Ammonium hydrogendifluoride solution
- 2818 Ammonium polysulphide solution
- 2854 Ammonium fluorosilicate
- 2859 Ammonium metavanadate
- 2861 Ammonium polyvanadate
- 2863 Sodium ammonium vanadate
- 3375 Ammonium nitrate emulsion or suspension or gel intermediate for blasting explosives
- 3423 Tetramethylammonium hydroxide, solid
- 3424 Ammonium dinitro-*o*-cresolate solution

3 Bromates

- 1450 Bromates, inorganic, n.o.s.
- 1473 Magnesium bromate
- 1484 Potassium bromate
- 1494 Sodium bromate
- 2469 Zinc bromate
- 2719 Barium bromate
- 3213 Ammonium bromate
- 3213 Bromates, inorganic, aqueous solution, n.o.s.

4 Chlorates

- 1445 Barium chlorate, solid
- 1452 Calcium chlorate

- 1458 Chlorate and borate mixture
- 1459 Chlorate and magnesium chloride mixture, solid
- 1461 Chlorates, inorganic, n.o.s.
- 1485 Potassium chlorate
- 1495 Sodium chlorate
- 1506 Strontium chlorate
- 1513 Zinc chlorate
- 2427 Potassium chlorate, aqueous solution
- 2428 Sodium chlorate, aqueous solution
- 2429 Calcium chlorate, aqueous solution
- 2573 Thallium chlorate
- 2721 Copper chlorate
- 2723 Magnesium chlorate
- 3405 Barium chlorate solution
- 3407 Chlorate and magnesium chloride mixture solution
- 5 Chlorites**
 - 1453 Calcium chlorite
 - 1462 Chlorites, inorganic, n.o.s.
 - 1496 Sodium chlorite
 - 1908 Chlorite solution
- 6 Cyanides**
 - 1541 Acetone cyanhydrin, stabilized
 - 1565 Barium cyanide
 - 1575 Calcium cyanide
 - 1587 Copper cyanide
 - 1588 Cyanides, inorganic, solid, n.o.s.
 - 1620 Lead cyanide
 - 1626 Mercuric potassium cyanide
 - 1636 Mercury cyanide
 - 1642 Mercury oxycyanide, desensitized
 - 1653 Nickel cyanide
 - 1679 Potassium cuprocyanide
 - 1680 Potassium cyanide, solid
 - 1684 Silver cyanide
 - 1689 Sodium cyanide, solid
 - 1694 Bromobenzyl cyanides, liquid
 - 1713 Zinc cyanide
 - 1889 Cyanogen bromide
 - 1935 Cyanide solution, n.o.s.
 - 2205 Adiponitrile
 - 2316 Sodium cuprocyanide, solid
 - 2317 Sodium cuprocyanide solution
 - 3413 Potassium cyanide solution
 - 3414 Sodium cyanide solution
 - 3449 Bromobenzyl cyanides, solid
- 7 Heavy metals and their salts (including their organometallic compounds)**
 - 0129 Lead azide, wetted, with not less than 20% water, or mixture of alcohol and water, by mass
 - 0130 Lead styphnate (lead trinitroresorcinate), wetted with not less than 20% water, or mixture of alcohol and water, by mass

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0135	Mercury fulminate, wetted with not less than 20% water, or mixture of alcohol and water, by mass
1347	Silver picrate, wetted with not less than 30% water, by mass
1366	Diethylzinc
1370	Dimethylzinc
1389	Alkali metal amalgam, liquid
1392	Alkaline earth metal amalgam, liquid
1435	Zinc ashes
1436	Zinc dust or zinc powder
1469	Lead nitrate
1470	Lead perchlorate, solid
1493	Silver nitrate
1512	Zinc ammonium nitrite
1513	Zinc chlorate
1514	Zinc nitrate
1515	Zinc permanganate
1516	Zinc peroxide
1587	Copper cyanide
1616	Lead acetate
1617	Lead arsenates
1618	Lead arsenites
1620	Lead cyanide
1623	Mercuric arsenate
1624	Mercuric chloride
1625	Mercuric nitrate
1626	Mercuric potassium cyanide
1627	Mercurous nitrate
1629	Mercury acetate
1630	Mercury ammonium chloride
1631	Mercury benzoate
1634	Mercury bromides
1636	Mercury cyanide
1637	Mercury gluconate
1638	Mercury iodide
1639	Mercury nucleate
1640	Mercury oleate
1641	Mercury oxide
1642	Mercury oxycyanide, desensitized
1643	Mercury potassium iodide
1644	Mercury salicylate
1645	Mercury sulphate
1646	Mercury thiocyanate
1649	Motor fuel anti-knock mixture
1653	Nickel cyanide
1674	Phenylmercuric acetate
1683	Silver arsenite
1684	Silver cyanide
1712	Zinc arsenate and zinc arsenite mixture
1713	Zinc cyanide
1714	Zinc phosphide
1794	Lead sulphate with more than 3% free acid

1838	Titanium tetrachloride
1840	Zinc chloride solution
1872	Lead dioxide
1894	Phenylmercuric hydroxide
1895	Phenylmercuric nitrate
1931	Zinc hydrosulphite
1931	Zinc dithionite
2024	Mercury compound, liquid, n.o.s.
2025	Mercury compound, solid, n.o.s.
2026	Phenylmercuric compound, n.o.s.
2291	Lead compound, soluble, n.o.s.
2331	Zinc chloride, anhydrous
2441	Titanium trichloride, pyrophoric or titanium trichloride mixture, pyrophoric
2469	Zinc bromate
2546	Titanium powder, dry
2714	Zinc resinate
2777	Mercury based pesticide, solid, toxic
2778	Mercury based pesticide, liquid, flammable, toxic
2809	Mercury
2855	Zinc fluorosilicate
2869	Titanium trichloride mixture
2878	Titanium, sponge granules or titanium, sponge powders
2881	Metal catalyst, dry
2989	Lead phosphite, dibasic
3011	Mercury based pesticide, liquid, toxic, flammable
3012	Mercury based pesticide, liquid, toxic
3089	Metal powder, flammable, n.o.s.
3174	Titanium disulphide
3181	Metal salts of organic compounds, flammable, n.o.s.
3189	Metal powder, self-heating, n.o.s.
3401	Alkali metal amalgam, solid
3402	Alkaline earth metal amalgam, solid
3408	Lead perchlorate solution
3483	Motor fuel anti-knock mixture, flammable

8 Hypochlorites

1471	Lithium hypochlorite
1748	Calcium hypochlorite mixture
1791	Hypochlorite solution
2208	Calcium hypochlorite mixture, dry with more than 10% but not more than 39% available chlorine
2741	Barium hypochlorite with more than 22% available chlorine
2880	Calcium hypochlorite, hydrated or calcium hypochlorite, hydrated mixture with not less than 5.5% but not more than 16% water
3212	Hypochlorites, inorganic, n.o.s.
3255	<i>tert</i> -Butyl hypochlorite
3485	Calcium hypochlorite, dry, corrosive or calcium hypochlorite mixture, dry, corrosive with more than 39% available chlorine (8.8% available oxygen)
3486	Calcium hypochlorite mixture, dry, corrosive with more than 10% but not more than 39% available chlorine
3487	Calcium hypochlorite, hydrated, corrosive or calcium hypochlorite, hydrated mixture, corrosive, with not less than 5.5% but not more than 16% water

9 Lead and its compounds

0129	Lead azide, wetted with not less than 20% water, or mixture of alcohol and water, by mass
0130	Lead styphnate, wetted with not less than 20% water, or mixture of alcohol and water, by mass
0130	Lead trinitroresorcinate, wetted with not less than 20% water, or mixture of alcohol and water, by mass
1469	Lead nitrate
1470	Lead perchlorate, solid
1616	Lead acetate
1617	Lead arsenates
1618	Lead arsenites
1620	Lead cyanide
1649	Motor fuel anti-knock mixture
1794	Lead sulphate with more than 3% free acid
1872	Lead dioxide
2291	Lead compound, soluble, n.o.s.
2989	Lead phosphide, dibasic
3408	Lead perchlorate solution
3483	Motor fuel anti-knock mixture, flammable

10 Liquid halogenated hydrocarbons

1099	Allyl bromide
1100	Allyl chloride
1107	Amyl chloride
1126	1-Bromobutane
1127	Chlorobutanes
1134	Chlorobenzene
1150	1,2-Dichloroethylene
1152	Dichloropentanes
1184	Ethylene dichloride
1278	1-Chloropropane
1279	1,2-Dichloropropane
1303	Vinylidene chloride, stabilized
1591	<i>o</i> -Dichlorobenzene
1593	Dichloromethane
1605	Ethylene dibromide
1647	Methyl bromide and ethylene dibromide mixture, liquid
1669	Pentachloroethane
1701	Xylyl bromide
1702	1,1,2,2-Tetrachloroethane
1710	Trichloroethylene
1723	Allyl iodide
1737	Benzyl bromide
1738	Benzyl chloride
1846	Carbon tetrachloride
1887	Bromochloromethane
1888	Chloroform
1891	Ethyl bromide
1897	Tetrachloroethylene
1991	Chloroprene, stabilized
2234	Chlorobenzotrifluorides
2238	Chlorotoluenes

2279	Hexachlorobutadiene
2321	Trichlorobenzenes, liquid
2322	Trichlorobutene
2339	2-Bromobutane
2341	1-Bromo-3-methylbutane
2342	Bromomethylpropanes
2343	2-Bromopentane
2344	Bromopropanes
2356	2-Chloropropane
2362	1,1-Dichloroethane
2387	Fluorobenzene
2388	Fluorotoluenes
2390	2-Iodobutane
2391	Iodomethylpropanes
2392	Iodopropanes
2456	2-Chloropropene
2504	Tetrabromoethane
2515	Bromoform
2554	Methylallyl chloride
2644	Methyl iodide
2646	Hexachlorocyclopentadiene
2664	Dibromomethane
2688	1-Bromo-3-chloropropane
2831	1,1,1-Trichloroethane
2872	Dibromochloropropanes

11 Mercury and mercury compounds

0135	Mercury fulminate, wetted with not less than 20% water
1389	Alkali metal amalgam, liquid
1392	Alkaline earth metal amalgam, liquid
1623	Mercuric arsenate
1624	Mercuric chloride
1625	Mercuric nitrate
1626	Mercuric potassium cyanide
1627	Mercurous nitrate
1629	Mercury acetate
1630	Mercury ammonium chloride
1631	Mercury benzoate
1634	Mercury bromides
1636	Mercury cyanide
1637	Mercury gluconate
1638	Mercury iodide
1639	Mercury nucleate
1640	Mercury oleate
1641	Mercury oxide
1642	Mercury oxycyanide, desensitized
1643	Mercury potassium iodide
1644	Mercury salicylate
1645	Mercury sulphate
1646	Mercury thiocyanate
1894	Phenylmercuric hydroxide

- 1895 Phenylmercuric nitrate
- 2024 Mercury compound, liquid, n.o.s.
- 2025 Mercury compound, solid, n.o.s.
- 2026 Phenylmercuric compound, n.o.s.
- 2777 Mercury based pesticide, solid, toxic
- 2778 Mercury based pesticide, liquid, flammable, toxic
- 2809 Mercury
- 3011 Mercury based pesticide, liquid, toxic, flammable
- 3012 Mercury based pesticide, liquid, toxic
- 3401 Alkali metal amalgam, solid
- 3402 Alkaline earth metal amalgam, solid
- 12 Nitrites and their mixtures**
- 1487 Potassium nitrate and sodium nitrite mixture
- 1488 Potassium nitrite
- 1500 Sodium nitrite
- 1512 Zinc ammonium nitrite
- 2627 Nitrites, inorganic, n.o.s.
- 2726 Nickel nitrite
- 3219 Nitrites, inorganic, aqueous solution, n.o.s
- 13 Perchlorates**
- 1442 Ammonium perchlorate
- 1447 Barium perchlorate, solid
- 1455 Calcium perchlorate
- 1470 Lead perchlorate, solid
- 1475 Magnesium perchlorate
- 1481 Perchlorates, inorganic, n.o.s.
- 1489 Potassium perchlorate
- 1502 Sodium perchlorate
- 1508 Strontium perchlorate
- 3211 Perchlorates, inorganic, aqueous solution, n.o.s.
- 3406 Barium perchlorate solution
- 3408 Lead perchlorate solution
- 14 Permanganates**
- 1448 Barium permanganate
- 1456 Calcium permanganate
- 1482 Permanganates, inorganic, n.o.s.
- 1490 Potassium permanganate
- 1503 Sodium permanganate
- 1515 Zinc permanganate
- 3214 Permanganates, inorganic, aqueous solution, n.o.s.
- 15 Powdered metals**
- 1309 Aluminium powder, coated
- 1326 Hafnium powder, wetted with not less than 25% water
- 1352 Titanium powder, wetted with not less than 25% water
- 1358 Zirconium powder, wetted with not less than 25% water
- 1383 Pyrophoric alloy or pyrophoric metal, n.o.s.
- 1396 Aluminium powder, uncoated
- 1398 Aluminium silicon powder, uncoated
- 1418 Magnesium powder
- 1435 Zinc ashes

- 1436 Zinc dust or zinc powder
- 1854 Barium alloys, pyrophoric
- 2008 Zirconium powder, dry
- 2009 Zirconium, dry, sheets, strip or coiled wire
- 2545 Hafnium powder, dry
- 2546 Titanium powder, dry
- 2878 Titanium sponge powders
- 2881 Metal catalyst, dry
- 2950 Magnesium granules, coated, particle size not less than 149 microns
- 3078 Cerium, turnings or gritty powder
- 3089 Metal powder, flammable, n.o.s.
- 3170 Aluminium smelting by-products
- 3189 Metal powder, self-heating, n.o.s.

16 Peroxides

- 1449 Barium peroxide
- 1457 Calcium peroxide
- 1472 Lithium peroxide
- 1476 Magnesium peroxide
- 1483 Peroxides, inorganic, n.o.s.
- 1491 Potassium peroxide
- 1504 Sodium peroxide
- 1509 Strontium peroxide
- 1516 Zinc peroxide
- 2014 Hydrogen peroxide, aqueous solution, 20–60%
- 2015 Hydrogen peroxide, aqueous solution, stabilized
- 2466 Potassium superoxide
- 2547 Sodium superoxide
- 3149 Hydrogen peroxide and peroxyacetic acid mixture
- 3377 Sodium perborate monohydrate
- 3378 Sodium carbonate peroxyhydrate

17 Azides

- 0129 Lead azide, wetted
- 0224 Barium azide, dry
- 1571 Barium azide, wetted
- 1687 Sodium azide

18 Alkalis

- 1005 Ammonia, anhydrous
- 1160 Dimethylamine, aqueous solution
- 1163 Dimethylhydrazine, unsymmetrical
- 1235 Methylamine, aqueous solution
- 1244 Methylhydrazine
- 1382 Potassium sulphide, anhydrous or potassium sulphide with less than 30% water of crystallization
- 1385 Sodium sulphide, anhydrous or sodium sulphide with less than 30% water of crystallization
- 1604 Ethylenediamine
- 1719 Caustic alkali liquid, n.o.s.
- 1813 Potassium hydroxide, solid
- 1814 Potassium hydroxide solution
- 1819 Sodium aluminate solution
- 1823 Sodium hydroxide, solid
- 1824 Sodium hydroxide solution

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1825	Sodium monoxide
1835	Tetramethylammonium hydroxide solution
1847	Potassium sulphide, hydrated with not less than 30% water of crystallization
1849	Sodium sulphide, hydrated with not less than 30% water
1907	Soda lime with more than 4% sodium hydroxide
1922	Pyrrolidine
2029	Hydrazine, anhydrous
2030	Hydrazine, aqueous solution with more than 37% hydrazine, by mass
2033	Potassium monoxide
2073	Ammonia solution relative density less than 0.880 at 15°C in water, with more than 35% but not more than 50% ammonia
2079	Diethylenetriamine
2259	Triethylenetetramine
2270	Ethylamine, aqueous solution, with not less than 50% but not more than 70% ethylamine
2318	Sodium hydrosulphide with less than 25% water of crystallization
2320	Tetraethylenepentamine
2379	1,3-Dimethylbutylamine
2382	Dimethylhydrazine, symmetrical
2386	1-Ethylpiperidine
2399	1-Methylpiperidine
2401	Piperidine
2491	Ethanolamine or ethanolamine solution
2579	Piperazine
2671	Aminopyridines
2672	Ammonia solution relative density between 0.880 and 0.957 at 15°C in water, with more than 10% but not more than 35% ammonia, by mass
2677	Rubidium hydroxide solution
2678	Rubidium hydroxide, solid
2679	Lithium hydroxide solution
2680	Lithium hydroxide
2681	Caesium hydroxide solution
2682	Caesium hydroxide
2683	Ammonium sulphide solution
2733	Amines, flammable, corrosive, n.o.s. or polyamines, flammable, corrosive, n.o.s.
2734	Amines, liquid, corrosive, flammable, n.o.s. or polyamines, liquid, corrosive, flammable, n.o.s.
2735	Amines, liquid, corrosive, n.o.s. or polyamines, liquid, corrosive, n.o.s.
2795	Batteries, wet, filled with alkali electric storage
2797	Battery fluid, alkali
2818	Ammonium polysulphide solution
2949	Sodium hydrosulphide, solid with not less than 25% water of crystallization
3028	Batteries, dry, containing potassium hydroxide, solid electric storage
3073	Vinylpyridines, stabilized
3253	Disodium trioxosilicate
3259	Amines, solid, corrosive, n.o.s. or polyamines, solid, corrosive, n.o.s.
3262	Corrosive solid, basic, inorganic, n.o.s.
3263	Corrosive solid, basic, organic, n.o.s.
3266	Corrosive liquid, basic, inorganic, n.o.s.
3267	Corrosive liquid, basic, organic, n.o.s.
3293	Hydrazine, aqueous solution with not more than 37% hydrazine, by mass
3318	Ammonia solution relative density less than 0.880 at 15°C in water, with more than 50% ammonia

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- 3320 Sodium borohydride and sodium hydroxide solution with not more than 12% sodium borohydride and not more than 40% sodium hydroxide, by mass
- 3423 Tetramethylammonium hydroxide, solid
- 3484 Hydrazine aqueous solution, flammable, with more than 37% hydrazine, by mass

Chapter 3.2

Dangerous Goods List

3.2.1 Structure of the Dangerous Goods List

The Dangerous Goods List is divided into 18 columns as follows:

- Column 1 **UN No.** – this column contains the United Nations number assigned to a dangerous good by the United Nations Sub-Committee of Experts on the Transport of Dangerous Goods (UN List).
- Column 2 **Proper shipping name (PSN)** – this column contains the proper shipping names in upper-case characters, which may have to be followed by additional descriptive text in lower-case characters (see 3.1.2). Proper shipping names may be shown in plural where isomers of similar classification exist. Hydrates may be included under the proper shipping name for the anhydrous substances. Unless otherwise indicated for an entry in the Dangerous Goods List, the word “SOLUTION” in a proper shipping name means one or more named dangerous goods dissolved in a liquid that is not otherwise subject to this Code. When a flashpoint is mentioned in this column, the data is based on closed-cup (c.c.) methods.
- Column 3 **Class or division** – this column contains the class and, in the case of class 1, the division and the compatibility group assigned to the substance or article according to the classification system described in part 2, chapter 2.1.
- Column 4 **Subsidiary risk(s)** – this column contains the class number(s) of any subsidiary risk(s) which have been identified by applying the classification system described in part 2. This column also identifies a dangerous good as a marine pollutant as follows:
- P – Marine pollutant: a non-exhaustive list of known marine pollutants, based on previous criteria and assignment. The absence of the symbol P or the presence of a “–” in that column does not preclude the application of 2.10.3.
- Column 5 **Packing group** – this column contains the packing group number (i.e. I, II or III) where assigned to the substance or article. If more than one packing group is indicated for the entry, the packing group of the substance or formulation to be transported shall be determined, based on its properties, through application of the hazard grouping criteria as provided in part 2.
- Column 6 **Special provisions** – this column contains a number referring to any special provision(s) indicated in chapter 3.3 that is relevant to the substance or article. Special provisions apply to all packing groups permitted for a particular substance or article unless the wording makes it otherwise apparent. The special provision numbers specific to the sea mode start from 900.
- Note:** When a special provision is no longer needed, this special provision is deleted but the special provision number is not allocated again, in order not to confuse the users of this Code. For this reason, some of the numbers are missing.
- Column 7a **Limited quantities** – this column provides the maximum quantity per inner packaging or article for transporting dangerous goods as limited quantities in accordance with chapter 3.4.
- Column 7b **Excepted quantities** – this column provides an alpha-numeric code described in subsection 3.5.1.2 which indicates the maximum quantity per inner and outer packaging for transporting dangerous goods as excepted quantities in accordance with chapter 3.5.
- Column 8 **Packing instructions** – this column contains alpha-numeric codes which refer to the relevant packing instruction(s) in 4.1.4. The packing instructions indicate the packagings (including large packagings) which may be used for the transport of substances and articles.
- A code including the letter “P” refers to packing instructions for the use of packagings described in chapter 6.1, 6.2 or 6.3.

A code including the letters "LP" refers to packing instructions for the use of large packagings described in chapter 6.6.

When a code including the letter(s) "P" or "LP" is not provided, it means that the substance is not allowed in that type of packaging.

Column 9 **Special packing provisions** – this column contains alpha-numeric codes which refer to the relevant special packing provisions specified in 4.1.4. The special packing provisions indicate the packagings (including large packagings).

A special packing provision including the letters "PP" refers to a special packing provision applicable to the use of a packing instruction bearing the Code "P" in 4.1.4.1.

A special packing provision including the letter "L" refers to a special packing provision applicable to a packing instruction bearing the code "LP" in 4.1.4.3.

Column 10 **IBC packing instructions** – this column contains alpha-numeric codes that refer to the relevant IBC instruction, which indicates the type of IBC that shall be used for the transport of the substance under reference. A code including the letters "IBC" refers to packing instructions for the use of IBCs described in chapter 6.5. When a code is not provided, it means the substance is not authorized in IBC.

Column 11 **IBC special provisions** – this column contains an alpha-numeric code, including the letter "B", which refers to special packing provisions applicable to the use of packing instructions bearing the code "IBC" in 4.1.4.2.

Column 12 [Reserved]

Column 13 **Tank and bulk container instructions** – this column contains T codes (see 4.2.5.2.6) applicable to the transport of dangerous goods in portable tanks and road tank vehicles.

When a T code is not provided in this column, it means that the dangerous goods are not authorized for transport in tanks unless specifically approved by the competent authority.

A code including the letters "BK" refers to the type of bulk containers used for the transport of bulk goods described in chapters 4.3 and 6.9.

The gases authorized for transport in MEGCs are indicated in the column "MEGC" in tables 1 and 2 of packing instruction P200 in 4.1.4.1.

Column 14 **Tank special provisions** – this column contains TP notes (see 4.2.5.3) applicable to the transport of dangerous goods in portable tanks and road tank vehicles. The TP notes specified in this column apply to the portable tanks specified in column 13.

Column 15 **EmS** – this column refers to the relevant emergency schedules for FIRE and SPILLAGE in "The EmS Guide – Emergency Response Procedures for Ships Carrying Dangerous Goods".

The first EmS code refers to the relevant Fire Schedule (e.g. Fire Schedule Alfa "F-A" General Fire Schedule).

The second EmS code refers to the relevant Spillage Schedule (e.g. Spillage Schedule Alfa "S-A" Toxic Substances).

Underlined EmS codes (special cases) indicate a substance, material or article for which additional advice is given in the emergency response procedures.

For dangerous goods offered for transport under N.O.S. entries or other generic entries, the most relevant emergency response procedures may vary with the properties of the hazardous constituents. As a consequence, shippers may have to declare different EmS codes from those indicated, if, to their knowledge, such codes are more appropriate.

The provisions in this column are not mandatory.

Column 16a **Stowage and handling** – this column contains the stowage and handling codes as specified in 7.1.5 and 7.1.6.

Column 16b **Segregation** – this column contains the segregation codes as specified in 7.2.8.

Column 17 **Properties and observations** – this column contains properties of and observations on the dangerous goods listed. The provisions in this column are not mandatory.

Properties of most gases include an indication of its density in relation to air. The figures in brackets give the density relative to air.

.1 "lighter than air" when the vapour density is down to half that of air;

- .2 “much lighter than air” when the vapour density is less than half that of air;
- .3 “heavier than air” when the vapour density is up to twice that of air; and
- .4 “much heavier than air” when the vapour density is more than twice that of air.

When explosive limits are given, these refer to the volume percentage of the vapour of the substance when mixed with air.

The ease and extent to which different liquids mix with water varies greatly and most entries have included an indication of miscibility. In these cases “miscible with water” normally means capable of being mixed with water in all proportions to form a completely homogeneous liquid.

Column 18 UN No. – see column 1.

3.2.2 Abbreviations and symbols

The following abbreviations and symbols are used in the Dangerous Goods List and have the meanings shown:

Abbreviation/symbol	Column	Meaning
N.O.S.	2	Not otherwise specified
P	4	Marine pollutant

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UN No.	Proper shipping name (PSN)	Class or division	Subsidiary risk(s)	Packing group	Special provisions	Limited and excepted quantity provisions		Packing		IBC	
						Limited quantities	Excepted quantities	Instructions	Provisions	Instructions	Provisions
(1)	(2) 3.1.2	(3) 2.0	(4) 2.0	(5) 2.0.1.3	(6) 3.3	(7a) 3.4	(7b) 3.5	(8) 4.1.4	(9) 4.1.4	(10) 4.1.4	(11) 4.1.4
0004	AMMONIUM PICRATE dry or wetted with less than 10% water, by mass	1.1D	-	-	-	0	E0	P112 (a), (b) or (c)	PP26	-	-
0005	CARTRIDGES FOR WEAPONS with bursting charge	1.1F	-	-	-	0	E0	P130	-	-	-
0006	CARTRIDGES FOR WEAPONS with bursting charge	1.1E	-	-	-	0	E0	P130 LP101	PP67 L1	-	-
0007	CARTRIDGES FOR WEAPONS with bursting charge	1.2F	-	-	-	0	E0	P130	-	-	-
0009	AMMUNITION, INCENDIARY with or without burster, expelling charge or propelling charge	1.2G	-	-	-	0	E0	P130 LP101	PP67 L1	-	-
0010	AMMUNITION, INCENDIARY with or without burster, expelling charge or propelling charge	1.3G	-	-	-	0	E0	P130 LP101	PP67 L1	-	-
0012	CARTRIDGES FOR WEAPONS, INERT PROJECTILE or CARTRIDGES, SMALL ARMS	1.4S	-	-	364	5 kg	E0	P130	-	-	-
0014	CARTRIDGES FOR WEAPONS, BLANK or CARTRIDGES, SMALL ARMS, BLANK or CARTRIDGES FOR TOOLS, BLANK	1.4S	-	-	364	5 kg	E0	P130	-	-	-
0015	AMMUNITION, SMOKE with or without burster, expelling charge or propelling charge	1.2G	See SP204	-	204	0	E0	P130 LP101	PP67 L1	-	-
0016	AMMUNITION, SMOKE with or without burster, expelling charge or propelling charge	1.3G	See SP204	-	204	0	E0	P130 LP101	PP67 L1	-	-
0018	AMMUNITION, TEAR-PRODUCING with burster, expelling charge or propelling charge	1.2G	6.1/8	-	-	0	E0	P130 LP101	PP67 L1	-	-
0019	AMMUNITION, TEAR-PRODUCING with burster, expelling charge or propelling charge	1.3G	6.1/8	-	-	0	E0	P130 LP101	PP67 L1	-	-
0020	AMMUNITION, TOXIC with burster, expelling charge or propelling charge	1.2K	6.1	-	274	0	E0	P101	-	-	-
0021	AMMUNITION, TOXIC with burster, expelling charge or propelling charge	1.3K	6.1	-	274	0	E0	P101	-	-	-
0027	BLACK POWDER (GUNPOWDER) granular, or as a meal	1.1D	-	-	-	0	E0	P113	PP50	-	-
0028	BLACK POWDER (GUNPOWDER), COMPRESSED or BLACK POWDER (GUNPOWDER) IN PELLETS	1.1D	-	-	-	0	E0	P113	PP51	-	-
0029	DETONATORS, NON-ELECTRIC for blasting	1.1B	-	-	-	0	E0	P131	PP68	-	-
0030	DETONATORS, ELECTRIC for blasting	1.1B	-	-	-	0	E0	P131	-	-	-
0033	BOMBS with bursting charge	1.1F	-	-	-	0	E0	P130	-	-	-
0034	BOMBS with bursting charge	1.1D	-	-	-	0	E0	P130 LP101	PP67 L1	-	-

(12)	Portable tanks and bulk containers		EmS	Stowage and handling	Segregation	Properties and observations	UN No.
	Tank instructions	Provisions					
(13) 4.2.5 4.3	(14) 4.2.5	(15) 5.4.3.2 7.8	(16a) 7.1 7.3-7.7	(16b) 7.2-7.7	(17)	(18)	
-	-	-	F-B, S-Y	Category 04 SW1	SG27 SG31	Substance.	0004
-	-	-	F-B, S-X	Category 05 SW1	-	See glossary of terms in appendix B.	0005
-	-	-	F-B, S-X	Category 04 SW1	-	See glossary of terms in appendix B.	0006
-	-	-	F-B, S-X	Category 05 SW1	-	See glossary of terms in appendix B.	0007
-	-	-	F-B, S-X	Category 03 SW1	-	See glossary of terms in appendix B.	0009
-	-	-	F-B, S-X	Category 03 SW1	-	See glossary of terms in appendix B.	0010
-	-	-	F-B, S-X	Category 01 SW1	-	See glossary of terms in appendix B.	0012
-	-	-	F-B, S-X	Category 01 SW1	-	See glossary of terms in appendix B.	0014
-	-	-	F-B, S-X	Category 03 SW1	-	See glossary of terms in appendix B.	0015
-	-	-	F-B, S-X	Category 03 SW1	-	See glossary of terms in appendix B.	0016
-	-	-	F-B, S-Z	Category 03 SW1	SG2	See glossary of terms in appendix B.	0018
-	-	-	F-B, S-Z	Category 03 SW1	SG3	See glossary of terms in appendix B.	0019
-	-	-	F-B, S-Z	Category 05 SW1	-	See glossary of terms in appendix B.	0020
-	-	-	F-B, S-Z	Category 05 SW1	-	See glossary of terms in appendix B.	0021
-	-	-	F-B, S-Y	Category 04 SW1	-	See glossary of terms in appendix B.	0027
-	-	-	F-B, S-Y	Category 04 SW1	-	See glossary of terms in appendix B.	0028
-	-	-	F-B, S-X	Category 05 SW1	-	See glossary of terms in appendix B.	0029
-	-	-	F-B, S-X	Category 05 SW1	-	See glossary of terms in appendix B.	0030
-	-	-	F-B, S-X	Category 05 SW1	-	See glossary of terms in appendix B.	0033
-	-	-	F-B, S-X	Category 04 SW1	-	See glossary of terms in appendix B.	0034

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UN No.	Proper shipping name (PSN)	Class or division	Subsidiary risk(s)	Packing group	Special provisions	Limited and excepted quantity provisions		Packing		IBC	
						Limited quantities	Excepted quantities	Instructions	Provisions	Instructions	Provisions
(1)	(2) 3.1.2	(3) 2.0	(4) 2.0	(5) 2.0.1.3	(6) 3.3	(7a) 3.4	(7b) 3.5	(8) 4.1.4	(9) 4.1.4	(10) 4.1.4	(11) 4.1.4
0035	BOMBS with bursting charge	1.2D	-	-	-	0	E0	P130 LP101	PP67 L1	-	-
0037	BOMBS, PHOTO-FLASH	1.1F	-	-	-	0	E0	P130	-	-	-
0038	BOMBS, PHOTO-FLASH	1.1D	-	-	-	0	E0	P130 LP101	PP67 L1	-	-
0039	BOMBS, PHOTO-FLASH	1.2G	-	-	-	0	E0	P130 LP101	PP67 L1	-	-
0042	BOOSTERS without detonator	1.1D	-	-	-	0	E0	P132 (a) or (b)	-	-	-
0043	BURSTERS explosive	1.1D	-	-	-	0	E0	P133	PP69	-	-
0044	PRIMERS, CAP TYPE	1.4S	-	-	-	0	E0	P133	-	-	-
0048	CHARGES, DEMOLITION	1.1D	-	-	-	0	E0	P130 LP101	PP67 L1	-	-
0049	CARTRIDGES, FLASH	1.1G	-	-	-	0	E0	P135	-	-	-
0050	CARTRIDGES, FLASH	1.3G	-	-	-	0	E0	P135	-	-	-
0054	CARTRIDGES, SIGNAL	1.3G	-	-	-	0	E0	P135	-	-	-
0055	CASES, CARTRIDGE, EMPTY, WITH PRIMER	1.4S	-	-	364	5 kg	E0	P136	-	-	-
0056	CHARGES, DEPTH	1.1D	-	-	-	0	E0	P130 LP101	PP67 L1	-	-
0059	CHARGES, SHAPED without detonator	1.1D	-	-	-	0	E0	P137	PP70	-	-
0060	CHARGES, SUPPLEMENTARY, EXPLOSIVE	1.1D	-	-	-	0	E0	P132 (a) or (b)	-	-	-
0065	CORD, DETONATING flexible	1.1D	-	-	-	0	E0	P139	PP71 PP72	-	-
0066	CORD, IGNITER	1.4G	-	-	-	0	E0	P140	-	-	-
0070	CUTTERS, CABLE, EXPLOSIVE	1.4S	-	-	-	0	E0	P134 LP102	-	-	-
0072	CYCLOTTRIMETHYLENE-TRINITRAMINE (CYCLONITE), (RDX), (HEXOGEN), WETTED with not less than 15% water, by mass	1.1D	-	-	266	0	E0	P112 (a)	PP45	-	-
0073	DETONATORS FOR AMMUNITION	1.1B	-	-	-	0	E0	P133	-	-	-
0074	DIAZODINITROPHENOL, WETTED with not less than 40% water or mixture of alcohol and water, by mass	1.1A	-	-	266	0	E0	P110 (a) or (b)	PP42	-	-
0075	DIETHYLENEGLYCOL DINITRATE, DESENSITIZED with not less than 25% non-volatile water-insoluble phlegmatizer, by mass	1.1D	-	-	266	0	E0	P115	PP53 PP54 PP57 PP58	-	-
0076	DINITROPHENOL dry or wetted with less than 15% water, by mass	1.1D	6.1 P	-	-	0	E0	P112 (a), (b) or (c)	PP26	-	-

UN No.	Portable tanks and bulk containers		EmS	Stowage and handling	Segregation	Properties and observations	UN No.
	Tank instructions	Provisions					
(12)	(13) 4.2.5 4.3	(14) 4.2.5	(15) 5.4.3.2 7.8	(16a) 7.1 7.3-7.7	(16b) 7.2-7.7	(17)	(18)
-	-	-	F-B, S-X	Category 04 SW1	-	See glossary of terms in appendix B.	0035
-	-	-	F-B, S-X	Category 05 SW1	-	See glossary of terms in appendix B.	0037
-	-	-	F-B, S-X	Category 04 SW1	-	See glossary of terms in appendix B.	0038
-	-	-	F-B, S-X	Category 03 SW1	-	See glossary of terms in appendix B.	0039
-	-	-	F-B, S-X	Category 04 SW1	-	See glossary of terms in appendix B.	0042
-	-	-	F-B, S-X	Category 04 SW1	-	See glossary of terms in appendix B.	0043
-	-	-	F-B, S-X	Category 01 SW1	-	See glossary of terms in appendix B.	0044
-	-	-	F-B, S-X	Category 04 SW1	-	See glossary of terms in appendix B.	0048
-	-	-	F-B, S-X	Category 03 SW1	-	See glossary of terms in appendix B.	0049
-	-	-	F-B, S-X	Category 03 SW1	-	See glossary of terms in appendix B.	0050
-	-	-	F-B, S-X	Category 03 SW1	-	See glossary of terms in appendix B.	0054
-	-	-	F-B, S-X	Category 01 SW1	-	See glossary of terms in appendix B.	0055
-	-	-	F-B, S-X	Category 04 SW1	-	See glossary of terms in appendix B.	0056
-	-	-	F-B, S-X	Category 04 SW1	-	See glossary of terms in appendix B.	0059
-	-	-	F-B, S-X	Category 04 SW1	-	See glossary of terms in appendix B.	0060
-	-	-	F-B, S-X	Category 04 SW1	-	See glossary of terms in appendix B.	0065
-	-	-	F-B, S-X	Category 02 SW1	-	See glossary of terms in appendix B.	0066
-	-	-	F-B, S-X	Category 01 SW1	-	See glossary of terms in appendix B.	0070
-	-	-	F-B, S-Y	Category 04 SW1	-	Mass detonating explosive which becomes more sensitive if the wetting agent is lost. This substance, when containing less alcohol, water or phlegmatizer than specified, shall not be transported, unless specifically authorized by the competent authority.	0072
-	-	-	F-B, S-X	Category 05 SW1	-	See glossary of terms in appendix B.	0073
-	-	-	F-B, S-Y	Category 05 SW1	-	Sensitive substance used in detonators, which becomes extremely sensitive if the wetting agents are lost. This substance, when containing less alcohol, water or phlegmatizer than specified, shall not be transported, unless specifically authorized by the competent authority.	0074
-	-	-	F-B, S-Y	Category 04 SW1	-	This substance, when containing less alcohol, water or phlegmatizer than specified, shall not be transported, unless specifically authorized by the competent authority.	0075
-	-	-	F-B, S-Z	Category 04 SW1	SG31	Substance.	0076

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UN No.	Proper shipping name (PSN)	Class or division	Subsidiary risk(s)	Packing group	Special provisions	Limited and excepted quantity provisions		Packing		IBC	
						Limited quantities	Excepted quantities	Instructions	Provisions	Instructions	Provisions
(1)	(2) 3.1.2	(3) 2.0	(4) 2.0	(5) 2.0.1.3	(6) 3.3	(7a) 3.4	(7b) 3.5	(8) 4.1.4	(9) 4.1.4	(10) 4.1.4	(11) 4.1.4
0077	DINITROPHENOLATES alkali metals, dry or wetted with less than 15% water, by mass	1.3C	6.1 P	-	-	0	E0	P114 (a) or (b)	PP26	-	-
0078	DINITRORESORCINOL dry or wetted with less than 15% water, by mass	1.1D	-	-	-	0	E0	P112 (a), (b) or (c)	PP26	-	-
0079	HEXANITRODIPHENYLAMINE (DIPICRYLAMINE), (HEXYL)	1.1D	-	-	-	0	E0	P112 (b) or (c)	-	-	-
0081	EXPLOSIVE, BLASTING, TYPE A	1.1D	-	-	-	0	E0	P116	PP63 PP66	-	-
0082	EXPLOSIVE, BLASTING, TYPE B	1.1D	-	-	-	0	E0	P116	PP61 PP62	IBC100	B9
0083	EXPLOSIVE, BLASTING, TYPE C	1.1D	-	-	267	0	E0	P116	-	-	-
0084	EXPLOSIVE, BLASTING, TYPE D	1.1D	-	-	-	0	E0	P116	-	-	-
0092	FLARES, SURFACE	1.3G	-	-	-	0	E0	P135	-	-	-
0093	FLARES, AERIAL	1.3G	-	-	-	0	E0	P135	-	-	-
0094	FLASH POWDER	1.1G	-	-	-	0	E0	P113	PP49	-	-
0099	FRACTURING DEVICES, EXPLOSIVE for oil wells, without detonator	1.1D	-	-	-	0	E0	P134 LP102	-	-	-
0101	FUSE, NON-DETONATING	1.3G	-	-	-	0	E0	P140	PP74 PP75	-	-
0102	CORD (FUSE), DETONATING metal-clad	1.2D	-	-	-	0	E0	P139	PP71	-	-
0103	FUSE, IGNITER tubular, metal-clad	1.4G	-	-	-	0	E0	P140	-	-	-
0104	CORD (FUSE), DETONATING, MILD EFFECT metal-clad	1.4D	-	-	-	0	E0	P139	PP71	-	-
0105	FUSE, SAFETY	1.4S	-	-	-	0	E0	P140	PP73	-	-
0106	FUZES, DETONATING	1.1B	-	-	-	0	E0	P141	-	-	-
0107	FUZES, DETONATING	1.2B	-	-	-	0	E0	P141	-	-	-
0110	GRENADDES, PRACTICE hand or rifle	1.4S	-	-	-	0	E0	P141	-	-	-
0113	GUANYL NITROSAMINO-GUANYLIDENEHYDRAZINE, WETTED with not less than 30% water, by mass	1.1A	-	-	266	0	E0	P110 (a) or (b)	PP42	-	-
0114	GUANYL NITROSAMINO-GUANYLTETRAZENE (TETRAZENE), WETTED with not less than 30% water, or mixture of alcohol and water, by mass	1.1A	-	-	266	0	E0	P110 (a) or (b)	PP42	-	-
0118	HEXOLITE (HEXOTOL) dry or wetted with less than 15% water, by mass	1.1D	-	-	-	0	E0	P112 (a), (b) or (c)	-	-	-

UN No.	Portable tanks and bulk containers		EmS	Stowage and handling	Segregation	Properties and observations	UN No.
	Tank instructions	Provisions					
(12)	(13) 4.2.5 4.3	(14) 4.2.5	(15) 5.4.3.2 7.8	(16a) 7.1 7.3-7.7	(16b) 7.2-7.7	(17)	(18)
-	-	-	F-B, S-Z	Category 04 SW1	SG31	Substance.	0077
-	-	-	F-B, S-Y	Category 04 SW1	SG31	Substance.	0078
-	-	-	F-B, S-Y	Category 04 SW1	-	Substance.	0079
-	-	-	F-B, S-Y	Category 04 SW1	SG34	Substance. See glossary of terms in appendix B.	0081
-	-	-	F-B, S-Y	Category 04 SW1	SG34	Substance. See glossary of terms in appendix B.	0082
-	-	-	F-B, S-Y	Category 04 SW1	SG28	Substance. See glossary of terms in appendix B.	0083
-	-	-	F-B, S-Y	Category 04 SW1	-	Substance. See glossary of terms in appendix B.	0084
-	-	-	F-B, S-X	Category 03 SW1	-	See glossary of terms in appendix B.	0092
-	-	-	F-B, S-X	Category 03 SW1	-	See glossary of terms in appendix B.	0093
-	-	-	F-B, S-Y	Category 03 SW1	-	See glossary of terms in appendix B.	0094
-	-	-	F-B, S-X	Category 04 SW1	-	See glossary of terms in appendix B.	0099
-	-	-	F-B, S-X	Category 03 SW1	-	See glossary of terms in appendix B.	0101
-	-	-	F-B, S-X	Category 04 SW1	-	See glossary of terms in appendix B.	0102
-	-	-	F-B, S-X	Category 02 SW1	-	See glossary of terms in appendix B.	0103
-	-	-	F-B, S-X	Category 02 SW1	-	See glossary of terms in appendix B.	0104
-	-	-	F-B, S-X	Category 01 SW1	-	See glossary of terms in appendix B.	0105
-	-	-	F-B, S-X	Category 05 SW1	-	See glossary of terms in appendix B.	0106
-	-	-	F-B, S-X	Category 05 SW1	-	See glossary of terms in appendix B.	0107
-	-	-	F-B, S-X	Category 01 SW1	-	See glossary of terms in appendix B.	0110
-	-	-	F-B, S-Y	Category 05 SW1	-	Sensitive substance used in detonators, which becomes extremely sensitive if the wetting agents are lost. This substance, when containing less alcohol, water or phlegmatizer than specified, shall not be transported, unless specifically authorized by the competent authority.	0113
-	-	-	F-B, S-Y	Category 05 SW1	-	Sensitive substance used in detonators, which becomes extremely sensitive if the wetting agents are lost. This substance, when containing less alcohol, water or phlegmatizer than specified, shall not be transported, unless specifically authorized by the competent authority.	0114
-	-	-	F-B, S-Y	Category 04 SW1	-	Substance. Mixtures of mass detonating explosives.	0118

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						Limited quantities	Excepted quantities	Instructions	Provisions	Instructions	Provisions
(1)	(2) 3.1.2	(3) 2.0	(4) 2.0	(5) 2.0.1.3	(6) 3.3	(7a) 3.4	(7b) 3.5	(8) 4.1.4	(9) 4.1.4	(10) 4.1.4	(11) 4.1.4
0121	IGNITERS	1.1G	-	-	-	0	E0	P142	-	-	-
0124	JET PERFORATING GUNS, CHARGED oil well, without detonator	1.1D	-	-	-	0	E0	P101	-	-	-
0129	LEAD AZIDE, WETTED with not less than 20% water, or mixture of alcohol and water, by mass	1.1A	-	-	266	0	E0	P110 (a) or (b)	PP42	-	-
0130	LEAD STYPHNATE (LEAD TRINITRORESORCINATE), WETTED with not less than 20% water, or mixture of alcohol and water, by mass	1.1A	-	-	266	0	E0	P110 (a) or (b)	PP42	-	-
0131	LIGHTERS, FUSE	1.4S	-	-	-	0	E0	P142	-	-	-
0132	DEFLAGRATING METAL SALTS OF AROMATIC NITRO-DERIVATIVES, N.O.S.	1.3C	-	-	-	0	E0	P114 (b)	PP26	-	-
0133	MANNITOL HEXANITRATE (NITROMANNITE), WETTED with not less than 40% water, or mixture of alcohol and water, by mass	1.1D	-	-	266	0	E0	P112 (a)	-	-	-
0135	MERCURY FULMINATE, WETTED with not less than 20% water, or mixture of alcohol and water, by mass	1.1A	-	-	266	0	E0	P110 (a) or (b)	PP42	-	-
0136	MINES with bursting charge	1.1F	-	-	-	0	E0	P130	-	-	-
0137	MINES with bursting charge	1.1D	-	-	-	0	E0	P130 LP101	PP67 L1	-	-
0138	MINES with bursting charge	1.2D	-	-	-	0	E0	P130 LP101	PP67 L1	-	-
0143	NITROGLYCERIN, DESENSITIZED with not less than 40% non-volatile water-insoluble phlegmatizer, by mass	1.1D	See SP271	-	266 271 272	0	E0	P115	PP53 PP54 PP57 PP58	-	-
0144	NITROGLYCERIN SOLUTION IN ALCOHOL with more than 1% but not more than 10% nitroglycerin	1.1D	-	-	358	0	E0	P115	PP45 PP55 PP56 PP59 PP60	-	-
0146	NITROSTARCH dry or wetted, with less than 20% water, by mass	1.1D	-	-	-	0	E0	P112 (a), (b) or (c)	-	-	-
0147	NITRO UREA	1.1D	-	-	-	0	E0	P112 (b)	-	-	-

UN No.	Portable tanks and bulk containers		EmS	Stowage and handling	Segregation	Properties and observations	UN No.
	Tank instructions	Provisions					
(12)	(13) 4.2.5 4.3	(14) 4.2.5	(15) 5.4.3.2 7.8	(16a) 7.1 7.3-7.7	(16b) 7.2-7.7	(17)	(18)
-	-	-	F-B, S-X	Category 03 SW1	-	See glossary of terms in appendix B.	0121
-	-	-	F-B, S-X	Category 04 SW1	-	See glossary of terms in appendix B.	0124
-	-	-	F-B, S-Y	Category 05 SW1	-	Sensitive substance used in detonators, which becomes extremely sensitive if the wetting agents are lost. This substance, when containing less alcohol, water or phlegmatizer than specified, shall not be transported, unless specifically authorized by the competent authority.	0129
-	-	-	F-B, S-Y	Category 05 SW1	-	Sensitive substance used in detonators, which becomes extremely sensitive if the wetting agents are lost. This substance, when containing less alcohol, water or phlegmatizer than specified, shall not be transported, unless specifically authorized by the competent authority.	0130
-	-	-	F-B, S-X	Category 01 SW1	-	See glossary of terms in appendix B.	0131
-	-	-	F-B, S-Y	Category 04 SW1	SG31	Substance.	0132
-	-	-	F-B, S-Y	Category 04 SW1	-	This substance, when containing less alcohol, water or phlegmatizer than specified, shall not be transported, unless specifically authorized by the competent authority.	0133
-	-	-	F-B, S-Y	Category 05 SW1	-	Sensitive substance used in detonators which will become extremely sensitive if it loses its wetting or desensitizing agent. This substance, when containing less alcohol, water or phlegmatizer than specified, shall not be transported, unless specifically authorized by the competent authority.	0135
-	-	-	F-B, S-X	Category 05 SW1	-	See glossary of terms in appendix B.	0136
-	-	-	F-B, S-X	Category 04 SW1	-	See glossary of terms in appendix B.	0137
-	-	-	F-B, S-X	Category 04 SW1	-	See glossary of terms in appendix B.	0138
-	-	-	F-B, S-Z	Category 04 SW1	-	Substance. This substance, when containing less alcohol, water or phlegmatizer than specified, shall not be transported, unless specifically authorized by the competent authority.	0143
-	-	-	F-B, S-Y	Category 04 SW1	-	Substance.	0144
-	-	-	F-B, S-Y	Category 04 SW1	-	Substance.	0146
-	-	-	F-B, S-Y	Category 04 SW1	-	Substance.	0147

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UN No.	Proper shipping name (PSN)	Class or division	Subsidiary risk(s)	Packing group	Special provisions	Limited and excepted quantity provisions		Packing		IBC	
						Limited quantities	Excepted quantities	Instructions	Provisions	Instructions	Provisions
(1)	(2) 3.1.2	(3) 2.0	(4) 2.0	(5) 2.0.1.3	(6) 3.3	(7a) 3.4	(7b) 3.5	(8) 4.1.4	(9) 4.1.4	(10) 4.1.4	(11) 4.1.4
0150	PENTAERYTHRITE TETRANITRATE (PENTAERYTHRITOL TETRANITRATE; PETN), WETTED with not less than 25% water, by mass or PENTAERYTHRITE TETRANITRATE (PENTAERYTHRITOL TETRANITRATE; PETN), DESENSITIZED with not less than 15% phlegmatizer, by mass	1.1D	-	-	266	0	E0	P112 (a) or (b)	-	-	-
0151	PENTOLITE dry or wetted with less than 15% water, by mass	1.1D	-	-	-	0	E0	P112 (a), (b) or (c)	-	-	-
0153	TRINITROANILINE (PICRAMIDE)	1.1D	-	-	-	0	E0	P112 (b) or (c)	-	-	-
0154	TRINITROPHENOL (PICRIC ACID) dry or wetted with less than 30% water, by mass	1.1D	-	-	-	0	E0	P112 (a), (b) or (c)	PP26	-	-
0155	TRINITROCHLORO BENZENE (PICRYL CHLORIDE)	1.1D	-	-	-	0	E0	P112 (b) or (c)	-	-	-
0159	POWDER CAKE (POWDER PASTE), WETTED with not less than 25% water, by mass	1.3C	-	-	266	0	E0	P111	PP43	-	-
0160	POWDER, SMOKELESS	1.1C	-	-	-	0	E0	P114 (b)	PP50 PP52	-	-
0161	POWDER, SMOKELESS	1.3C	-	-	-	0	E0	P114 (b)	PP50 PP52	-	-
0167	PROJECTILES with bursting charge	1.1F	-	-	-	0	E0	P130	-	-	-
0168	PROJECTILES with bursting charge	1.1D	-	-	-	0	E0	P130 LP101	PP67 L1	-	-
0169	PROJECTILES with bursting charge	1.2D	-	-	-	0	E0	P130 LP101	PP67 L1	-	-
0171	AMMUNITION, ILLUMINATING with or without burster, expelling charge or propelling charge	1.2G	-	-	-	0	E0	P130 LP101	PP67 L1	-	-
0173	RELEASE DEVICES, EXPLOSIVE	1.4S	-	-	-	0	E0	P134 LP102	-	-	-
0174	RIVETS, EXPLOSIVE	1.4S	-	-	-	0	E0	P134 LP102	-	-	-
0180	ROCKETS with bursting charge	1.1F	-	-	-	0	E0	P130	-	-	-
0181	ROCKETS with bursting charge	1.1E	-	-	-	0	E0	P130 LP101	PP67 L1	-	-
0182	ROCKETS with bursting charge	1.2E	-	-	-	0	E0	P130 LP101	PP67 L1	-	-
0183	ROCKETS with inert head	1.3C	-	-	-	0	E0	P130 LP101	PP67 L1	-	-
0186	ROCKET MOTORS	1.3C	-	-	-	0	E0	P130 LP101	PP67 L1	-	-
0190	SAMPLES, EXPLOSIVE other than initiating explosive	1	-	-	16 274	0	E0	P101	-	-	-

(12)	Portable tanks and bulk containers		EmS	Stowage and handling	Segregation	Properties and observations	UN No.
	Tank instructions	Provisions					
(13) 4.2.5 4.3	(14) 4.2.5	(15) 5.4.3.2 7.8	(16a) 7.1 7.3-7.7	(16b) 7.2-7.7	(17)	(18)	
-	-	-	F-B, S-Y	Category 04 SW1	-	Substance. Mass detonating explosive which will become more sensitive if it loses its wetting or desensitizing agent. This substance, when containing less alcohol, water or phlegmatizer than specified, shall not be transported, unless specifically authorized by the competent authority.	0150
-	-	-	F-B, S-Y	Category 04 SW1	-	Substance. Mixtures of mass detonating explosive substances.	0151
-	-	-	F-B, S-Y	Category 04 SW1	-	Substance.	0153
-	-	-	F-B, S-Y	Category 04 SW1	SG31	Substance.	0154
-	-	-	F-B, S-Y	Category 04 SW1	-	Substance.	0155
-	-	-	F-B, S-Y	Category 04 SW1	-	Substance consisting of nitrocellulose impregnated with not more than 60% of nitroglycerin or other liquid organic nitrates or a mixture of these. This substance, when containing less alcohol, water or phlegmatizer than specified, shall not be transported, unless specifically authorized by the competent authority.	0159
-	-	-	F-B, S-Y	Category 04 SW1	-	Substances based on nitrocellulose used as propellant. Sensitive to sparks, friction, pressure and electrostatic discharge.	0160
-	-	-	F-B, S-Y	Category 04 SW1	-	Substances based on nitrocellulose used as propellant. Sensitive to sparks, friction, pressure and electrostatic discharge.	0161
-	-	-	F-B, S-X	Category 05 SW1	-	See glossary of terms in appendix B.	0167
-	-	-	F-B, S-X	Category 04 SW1	-	See glossary of terms in appendix B.	0168
-	-	-	F-B, S-X	Category 04 SW1	-	See glossary of terms in appendix B.	0169
-	-	-	F-B, S-X	Category 03 SW1	-	See glossary of terms in appendix B.	0171
-	-	-	F-B, S-X	Category 01 SW1	-	See glossary of terms in appendix B.	0173
-	-	-	F-B, S-X	Category 01 SW1	-	See glossary of terms in appendix B.	0174
-	-	-	F-B, S-X	Category 05 SW1	-	See glossary of terms in appendix B.	0180
-	-	-	F-B, S-X	Category 04 SW1	-	See glossary of terms in appendix B.	0181
-	-	-	F-B, S-X	Category 04 SW1	-	See glossary of terms in appendix B.	0182
-	-	-	F-B, S-X	Category 04 SW1	-	See glossary of terms in appendix B.	0183
-	-	-	F-B, S-X	Category 04 SW1	-	See glossary of terms in appendix B.	0186
-	-	-	F-B, S-X	Category 05 SW1	-	Substance or article. Division and compatibility group as classified by the competent authority.	0190

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UN No.	Proper shipping name (PSN)	Class or division	Subsidiary risk(s)	Packing group	Special provisions	Limited and excepted quantity provisions		Packing		IBC	
						Limited quantities	Excepted quantities	Instructions	Provisions	Instructions	Provisions
(1)	(2) 3.1.2	(3) 2.0	(4) 2.0	(5) 2.0.1.3	(6) 3.3	(7a) 3.4	(7b) 3.5	(8) 4.1.4	(9) 4.1.4	(10) 4.1.4	(11) 4.1.4
0191	SIGNAL DEVICES, HAND	1.4G	-	-	-	0	E0	P135	-	-	-
0192	SIGNALS, RAILWAY TRACK, EXPLOSIVE	1.1G	-	-	-	0	E0	P135	-	-	-
0193	SIGNALS, RAILWAY TRACK, EXPLOSIVE	1.4S	-	-	-	0	E0	P135	-	-	-
0194	SIGNALS, DISTRESS, ship	1.1G	-	-	-	0	E0	P135	-	-	-
0195	SIGNALS, DISTRESS, ship	1.3G	-	-	-	0	E0	P135	-	-	-
0196	SIGNALS, SMOKE	1.1G	-	-	-	0	E0	P135	-	-	-
0197	SIGNALS, SMOKE	1.4G	-	-	-	0	E0	P135	-	-	-
0204	SOUNDING DEVICES, EXPLOSIVE	1.2F	-	-	-	0	E0	P134 LP102	-	-	-
0207	TETRANITROANILINE	1.1D	-	-	-	0	E0	P112 (b) or (c)	-	-	-
0208	TRINITROPHENYLMETHYL-NITRAMINE (TETRYL)	1.1D	-	-	-	0	E0	P112 (b) or (c)	-	-	-
0209	TRINITROTOLUENE (TNT) dry or wetted with less than 30% water, by mass	1.1D	-	-	-	0	E0	P112 (a), (b) or (c)	PP46	-	-
0212	TRACERS FOR AMMUNITION	1.3G	-	-	-	0	E0	P133	PP69	-	-
0213	TRINITROANISOLE	1.1D	-	-	-	0	E0	P112 (b) or (c)	-	-	-
0214	TRINITROBENZENE dry or wetted with less than 30% water, by mass	1.1D	-	-	-	0	E0	P112 (a), (b) or (c)	-	-	-
0215	TRINITROBENZOIC ACID dry or wetted with less than 30% water, by mass	1.1D	-	-	-	0	E0	P112 (a), (b) or (c)	-	-	-
0216	TRINITRO- <i>m</i> -CRESOL	1.1D	-	-	-	0	E0	P112 (b) or (c)	PP26	-	-
0217	TRINITRONAPHTHALENE	1.1D	-	-	-	0	E0	P112 (b) or (c)	-	-	-
0218	TRINITROPHENETOLE	1.1D	-	-	-	0	E0	P112 (b) or (c)	-	-	-
0219	TRINITRORESORCINOL (STYPHNIC ACID) dry or wetted with less than 20% water, or mixture of alcohol and water, by mass	1.1D	-	-	-	0	E0	P112 (a), (b) or (c)	PP26	-	-
0220	UREA NITRATE dry or wetted with less than 20% water, by mass	1.1D	-	-	-	0	E0	P112 (a), (b) or (c)	-	-	-
0221	WARHEADS, TORPEDO with bursting charge	1.1D	-	-	-	0	E0	P130 LP101	PP67 L1	-	-
0222	AMMONIUM NITRATE	1.1D	-	-	370	0	E0	P112 (b) or (c)	PP47	IBC100	B2 B3 B17

UN No.	Portable tanks and bulk containers		EmS	Stowage and handling	Segregation	Properties and observations	UN No.
	Tank instructions	Provisions					
(12)	(13) 4.2.5 4.3	(14) 4.2.5	(15) 5.4.3.2 7.8	(16a) 7.1 7.3-7.7	(16b) 7.2-7.7	(17)	(18)
-	-	-	F-B, S-X	Category 02 SW1	-	See glossary of terms in appendix B.	0191
-	-	-	F-B, S-X	Category 03 SW1	-	See glossary of terms in appendix B.	0192
-	-	-	F-B, S-X	Category 01 SW1	-	See glossary of terms in appendix B.	0193
-	-	-	F-B, S-X	Category 03 SW1	-	See glossary of terms in appendix B.	0194
-	-	-	F-B, S-X	Category 03 SW1	-	See glossary of terms in appendix B.	0195
-	-	-	F-B, S-X	Category 03 SW1	-	See glossary of terms in appendix B.	0196
-	-	-	F-B, S-X	Category 02 SW1	-	See glossary of terms in appendix B.	0197
-	-	-	F-B, S-X	Category 05 SW1	-	See glossary of terms in appendix B.	0204
-	-	-	F-B, S-Y	Category 04 SW1	-	Substance.	0207
-	-	-	F-B, S-Y	Category 04 SW1	-	Substance. Mass detonating explosive.	0208
-	-	-	F-B, S-Y	Category 04 SW1	-	Substance. Tritonal is a substance consisting of trinitrotoluene (TNT) mixed with aluminium.	0209
-	-	-	F-B, S-X	Category 03 SW1	-	See glossary of terms in appendix B.	0212
-	-	-	F-B, S-Y	Category 04 SW1	-	Substance.	0213
-	-	-	F-B, S-Y	Category 04 SW1	-	Substance.	0214
-	-	-	F-B, S-Y	Category 04 SW1	-	Substance.	0215
-	-	-	F-B, S-Y	Category 04 SW1	SG31	Substance.	0216
-	-	-	F-B, S-Y	Category 04 SW1	-	Substance.	0217
-	-	-	F-B, S-Y	Category 04 SW1	-	Substance.	0218
-	-	-	F-B, S-Y	Category 04 SW1	SG31	Substance.	0219
-	-	-	F-B, S-Y	Category 04 SW1	-	Substance.	0220
-	-	-	F-B, S-X	Category 04 SW1	-	See glossary of terms in appendix B.	0221
-	-	-	F-B, S-Y	Category 04 SW1	SG27	Substance.	0222

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						Limited quantities	Excepted quantities	Instructions	Provisions	Instructions	Provisions
(1)	(2) 3.1.2	(3) 2.0	(4) 2.0	(5) 2.0.1.3	(6) 3.3	(7a) 3.4	(7b) 3.5	(8) 4.1.4	(9) 4.1.4	(10) 4.1.4	(11) 4.1.4
0224	BARIUM AZIDE, dry or wetted with less than 50% water, by mass	1.1A	6.1	-	-	0	E0	P110 (a) or (b)	PP42	-	-
0225	BOOSTERS WITH DETONATOR	1.1B	-	-	-	0	E0	P133	PP69	-	-
0226	CYCLOTETRAMETHYLENE-TETRANITRAMINE (HMX; OCTOGEN), WETTED with not less than 15% water, by mass	1.1D	-	-	266	0	E0	P112 (a)	PP45	-	-
0234	SODIUM DINITRO- <i>o</i> -CRESOLATE dry or wetted with less than 15% water, by mass	1.3C	6.1 P	-	-	0	E0	P114 (a) or (b)	PP26	-	-
0235	SODIUM PICRAMATE dry or wetted with less than 20% water, by mass	1.3C	-	-	-	0	E0	P114 (a) or (b)	PP26	-	-
0236	ZIRCONIUM PICRAMATE dry or wetted with less than 20% water, by mass	1.3C	-	-	-	0	E0	P114 (a) or (b)	PP26	-	-
0237	CHARGES, SHAPED, FLEXIBLE, LINEAR	1.4D	-	-	-	0	E0	P138	-	-	-
0238	ROCKETS, LINE-THROWING	1.2G	-	-	-	0	E0	P130	-	-	-
0240	ROCKETS, LINE-THROWING	1.3G	-	-	-	0	E0	P130	-	-	-
0241	EXPLOSIVE, BLASTING, TYPE E	1.1D	-	-	-	0	E0	P116	PP61 PP62	IBC100	B10
0242	CHARGES, PROPELLING, FOR CANNON	1.3C	-	-	-	0	E0	P130	-	-	-
0243	AMMUNITION, INCENDIARY, WHITE PHOSPHORUS with burster, expelling charge or propelling charge	1.2H	-	-	-	0	E0	P130 LP101	PP67 L1	-	-
0244	AMMUNITION, INCENDIARY, WHITE PHOSPHORUS with burster, expelling charge or propelling charge	1.3H	-	-	-	0	E0	P130 LP101	PP67 L1	-	-
0245	AMMUNITION, SMOKE, WHITE PHOSPHORUS with burster, expelling charge or propelling charge	1.2H	-	-	-	0	E0	P130 LP101	PP67 L1	-	-
0246	AMMUNITION, SMOKE, WHITE PHOSPHORUS with burster, expelling charge or propelling charge	1.3H	-	-	-	0	E0	P130 LP101	PP67 L1	-	-
0247	AMMUNITION, INCENDIARY liquid or gel, with burster, expelling charge or propelling charge	1.3J	-	-	-	0	E0	P101	-	-	-
0248	CONTRIVANCES, WATER-ACTIVATED with burster, expelling charge or propelling charge	1.2L	4.3	-	274	0	E0	P144	PP77	-	-

(12)	Portable tanks and bulk containers		EmS	Stowage and handling	Segregation	Properties and observations	UN No.
	Tank instructions	Provisions					
(13) 4.2.5 4.3	(14) 4.2.5	(15) 5.4.3.2 7.8	(16a) 7.1 7.3-7.7	(16b) 7.2-7.7	(17)	(18)	
-	-	-	F-B, S-Z	Category 05 SW1	-	Sensitive substance used in detonators, which becomes extremely sensitive if the wetting agents are lost. This substance, when containing less alcohol, water or phlegmatizer than specified, shall not be transported, unless specifically authorized by the competent authority.	0224
-	-	-	F-B, S-X	Category 05 SW1	-	See glossary of terms in appendix B.	0225
-	-	-	F-B, S-Y	Category 04 SW1	-	Substance. Mass detonating explosive which will become more sensitive if the wetting or desensitizing agent is lost. This substance, when containing less alcohol, water or phlegmatizer than specified, shall not be transported, unless specifically authorized by the competent authority.	0226
-	-	-	F-B, S-Z	Category 04 SW1	SG31	Substance.	0234
-	-	-	F-B, S-Y	Category 04 SW1	SG31	Substance.	0235
-	-	-	F-B, S-Y	Category 04 SW1	SG31	Substance.	0236
-	-	-	F-B, S-X	Category 02 SW1	-	See glossary of terms in appendix B.	0237
-	-	-	F-B, S-X	Category 03 SW1	-	See glossary of terms in appendix B.	0238
-	-	-	F-B, S-X	Category 03 SW1	-	See glossary of terms in appendix B.	0240
-	-	-	F-B, S-X	Category 04 SW1	SG34	See glossary of terms in appendix B.	0241
-	-	-	F-B, S-X	Category 04 SW1	-	See glossary of terms in appendix B.	0242
-	-	-	F-B, S-X	Category 05 SW1	-	See glossary of terms in appendix B.	0243
-	-	-	F-B, S-X	Category 05 SW1	-	See glossary of terms in appendix B.	0244
-	-	-	F-B, S-X	Category 05 SW1	-	See glossary of terms in appendix B.	0245
-	-	-	F-B, S-X	Category 05 SW1	-	See glossary of terms in appendix B.	0246
-	-	-	F-B, S-X	Category 05 SW1	-	See glossary of terms in appendix B.	0247
-	-	-	F-B, S-Y	Category 05 SW1	-	See glossary of terms in appendix B.	0248

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UN No.	Proper shipping name (PSN)	Class or division	Subsidiary risk(s)	Packing group	Special provisions	Limited and excepted quantity provisions		Packing		IBC	
						Limited quantities	Excepted quantities	Instructions	Provisions	Instructions	Provisions
(1)	(2) 3.1.2	(3) 2.0	(4) 2.0	(5) 2.0.1.3	(6) 3.3	(7a) 3.4	(7b) 3.5	(8) 4.1.4	(9) 4.1.4	(10) 4.1.4	(11) 4.1.4
0249	CONTRIVANCES, WATER-ACTIVATED with burster, expelling charge or propelling charge	1.3L	4.3	-	274	0	E0	P144	PP77	-	-
0250	ROCKET MOTORS WITH HYPERGOLIC LIQUIDS with or without expelling charge	1.3L	-	-	-	0	E0	P101	-	-	-
0254	AMMUNITION, ILLUMINATING with or without burster, expelling charge or propelling charge	1.3G	-	-	-	0	E0	P130 LP101	PP67 L1	-	-
0255	DETONATORS, ELECTRIC for blasting	1.4B	-	-	-	0	E0	P131	-	-	-
0257	FUZES, DETONATING	1.4B	-	-	-	0	E0	P141	-	-	-
0266	OCTOLITE (OCTOL) dry or wetted with less than 15% water, by mass	1.1D	-	-	-	0	E0	P112 (a), (b) or (c)	-	-	-
0267	DETONATORS, NON-ELECTRIC for blasting	1.4B	-	-	-	0	E0	P131	PP68	-	-
0268	BOOSTERS WITH DETONATOR	1.2B	-	-	-	0	E0	P133	PP69	-	-
0271	CHARGES, PROPELLING	1.1C	-	-	-	0	E0	P143	PP76	-	-
0272	CHARGES, PROPELLING	1.3C	-	-	-	0	E0	P143	PP76	-	-
0275	CARTRIDGES, POWER DEVICE	1.3C	-	-	-	0	E0	P134 LP102	-	-	-
0276	CARTRIDGES, POWER DEVICE	1.4C	-	-	-	0	E0	P134 LP102	-	-	-
0277	CARTRIDGES, OIL WELL	1.3C	-	-	-	0	E0	P134 LP102	-	-	-
0278	CARTRIDGES, OIL WELL	1.4C	-	-	-	0	E0	P134 LP102	-	-	-
0279	CHARGES, PROPELLING, FOR CANNON	1.1C	-	-	-	0	E0	P130	-	-	-
0280	ROCKET MOTORS	1.1C	-	-	-	0	E0	P130 LP101	PP67 L1	-	-
0281	ROCKET MOTORS	1.2C	-	-	-	0	E0	P130 LP101	PP67 L1	-	-
0282	NITROGUANIDINE (PICRITE) dry or wetted with less than 20% water, by mass	1.1D	-	-	-	0	E0	P112 (a), (b) or (c)	-	-	-
0283	BOOSTERS without detonator	1.2D	-	-	-	0	E0	P132 (a) or (b)	-	-	-
0284	GRENADES hand or rifle, with bursting charge	1.1D	-	-	-	0	E0	P141	-	-	-
0285	GRENADES hand or rifle, with bursting charge	1.2D	-	-	-	0	E0	P141	-	-	-
0286	WARHEADS, ROCKET with bursting charge	1.1D	-	-	-	0	E0	P130 LP101	PP67 L1	-	-
0287	WARHEADS, ROCKET with bursting charge	1.2D	-	-	-	0	E0	P130 LP101	PP67 L1	-	-
0288	CHARGES, SHAPED, FLEXIBLE, LINEAR	1.1D	-	-	-	0	E0	P138	-	-	-

UN No.	Portable tanks and bulk containers		EmS	Stowage and handling	Segregation	Properties and observations	UN No.
	Tank instructions	Provisions					
(12)	(13) 4.2.5 4.3	(14) 4.2.5	(15) 5.4.3.2 7.8	(16a) 7.1 7.3-7.7	(16b) 7.2-7.7	(17)	(18)
-	-	-	F-B, S-Y	Category 05 SW1	-	See glossary of terms in appendix B.	0249
-	-	-	F-B, S-X	Category 05 SW1	-	See glossary of terms in appendix B.	0250
-	-	-	F-B, S-X	Category 03 SW1	-	See glossary of terms in appendix B.	0254
-	-	-	F-B, S-X	Category 05 SW1	-	See glossary of terms in appendix B.	0255
-	-	-	F-B, S-X	Category 05 SW1	-	See glossary of terms in appendix B.	0257
-	-	-	F-B, S-Y	Category 04 SW1	-	Substance. Mixtures of mass detonating explosives.	0266
-	-	-	F-B, S-X	Category 05 SW1	-	See glossary of terms in appendix B.	0267
-	-	-	F-B, S-X	Category 05 SW1	-	See glossary of terms in appendix B.	0268
-	-	-	F-B, S-X	Category 04 SW1	-	See glossary of terms in appendix B.	0271
-	-	-	F-B, S-X	Category 04 SW1	-	See glossary of terms in appendix B.	0272
-	-	-	F-B, S-X	Category 04 SW1	-	See glossary of terms in appendix B.	0275
-	-	-	F-B, S-X	Category 02 SW1	-	See glossary of terms in appendix B.	0276
-	-	-	F-B, S-X	Category 04 SW1	-	See glossary of terms in appendix B.	0277
-	-	-	F-B, S-X	Category 02 SW1	-	See glossary of terms in appendix B.	0278
-	-	-	F-B, S-X	Category 04 SW1	-	See glossary of terms in appendix B.	0279
-	-	-	F-B, S-X	Category 04 SW1	-	See glossary of terms in appendix B.	0280
-	-	-	F-B, S-X	Category 04 SW1	-	See glossary of terms in appendix B.	0281
-	-	-	F-B, S-Y	Category 04 SW1	-	Substance.	0282
-	-	-	F-B, S-X	Category 04 SW1	-	See glossary of terms in appendix B.	0283
-	-	-	F-B, S-X	Category 04 SW1	-	See glossary of terms in appendix B.	0284
-	-	-	F-B, S-X	Category 04 SW1	-	See glossary of terms in appendix B.	0285
-	-	-	F-B, S-X	Category 04 SW1	-	See glossary of terms in appendix B.	0286
-	-	-	F-B, S-X	Category 04 SW1	-	See glossary of terms in appendix B.	0287
-	-	-	F-B, S-X	Category 04 SW1	-	See glossary of terms in appendix B.	0288

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UN No.	Proper shipping name (PSN)	Class or division	Subsidiary risk(s)	Packing group	Special provisions	Limited and excepted quantity provisions		Packing		IBC	
						Limited quantities	Excepted quantities	Instructions	Provisions	Instructions	Provisions
(1)	(2) 3.1.2	(3) 2.0	(4) 2.0	(5) 2.0.1.3	(6) 3.3	(7a) 3.4	(7b) 3.5	(8) 4.1.4	(9) 4.1.4	(10) 4.1.4	(11) 4.1.4
0289	CORD, DETONATING flexible	1.4D	-	-	-	0	E0	P139	PP71 PP72	-	-
0290	CORD (FUSE), DETONATING metal-clad	1.1D	-	-	-	0	E0	P139	PP71	-	-
0291	BOMBS with bursting charge	1.2F	-	-	-	0	E0	P130	-	-	-
0292	GRENADES hand or rifle, with bursting charge	1.1F	-	-	-	0	E0	P141	-	-	-
0293	GRENADES hand or rifle, with bursting charge	1.2F	-	-	-	0	E0	P141	-	-	-
0294	MINES with bursting charge	1.2F	-	-	-	0	E0	P130	-	-	-
0295	ROCKETS with bursting charge	1.2F	-	-	-	0	E0	P130	-	-	-
0296	SOUNDING DEVICES, EXPLOSIVE	1.1F	-	-	-	0	E0	P134 LP102	-	-	-
0297	AMMUNITION, ILLUMINATING with or without burster, expelling charge or propelling charge	1.4G	-	-	-	0	E0	P130 LP101	PP67 L1	-	-
0299	BOMBS, PHOTO-FLASH	1.3G	-	-	-	0	E0	P130 LP101	PP67 L1	-	-
0300	AMMUNITION, INCENDIARY with or without burster, expelling charge or propelling charge	1.4G	-	-	-	0	E0	P130 LP101	PP67 L1	-	-
0301	AMMUNITION, TEAR-PRODUCING with burster, expelling charge or propelling charge	1.4G	6.1/8	-	-	0	E0	P130 LP101	PP67 L1	-	-
0303	AMMUNITION, SMOKE with or without burster, expelling charge or propelling charge	1.4G	See SP204	-	204	0	E0	P130 LP101	PP67 L1	-	-
0305	FLASH POWDER	1.3G	-	-	-	0	E0	P113	PP49	-	-
0306	TRACERS FOR AMMUNITION	1.4G	-	-	-	0	E0	P133	PP69	-	-
0312	CARTRIDGES, SIGNAL	1.4G	-	-	-	0	E0	P135	-	-	-
0313	SIGNALS, SMOKE	1.2G	-	-	-	0	E0	P135	-	-	-
0314	IGNITERS	1.2G	-	-	-	0	E0	P142	-	-	-
0315	IGNITERS	1.3G	-	-	-	0	E0	P142	-	-	-
0316	FUZES, IGNITING	1.3G	-	-	-	0	E0	P141	-	-	-
0317	FUZES, IGNITING	1.4G	-	-	-	0	E0	P141	-	-	-
0318	GRENADES, PRACTICE hand or rifle	1.3G	-	-	-	0	E0	P141	-	-	-
0319	PRIMERS, TUBULAR	1.3G	-	-	-	0	E0	P133	-	-	-
0320	PRIMERS, TUBULAR	1.4G	-	-	-	0	E0	P133	-	-	-

UN No.	Portable tanks and bulk containers		EmS	Stowage and handling	Segregation	Properties and observations	UN No.
	Tank instructions	Provisions					
(12)	(13) 4.2.5 4.3	(14) 4.2.5	(15) 5.4.3.2 7.8	(16a) 7.1 7.3-7.7	(16b) 7.2-7.7	(17)	(18)
-	-	-	F-B, S-X	Category 02 SW1	-	See glossary of terms in appendix B.	0289
-	-	-	F-B, S-X	Category 04 SW1	-	See glossary of terms in appendix B.	0290
-	-	-	F-B, S-X	Category 05 SW1	-	See glossary of terms in appendix B.	0291
-	-	-	F-B, S-X	Category 05 SW1	-	See glossary of terms in appendix B.	0292
-	-	-	F-B, S-X	Category 05 SW1	-	See glossary of terms in appendix B.	0293
-	-	-	F-B, S-X	Category 05 SW1	-	See glossary of terms in appendix B.	0294
-	-	-	F-B, S-X	Category 05 SW1	-	See glossary of terms in appendix B.	0295
-	-	-	F-B, S-X	Category 05 SW1	-	See glossary of terms in appendix B.	0296
-	-	-	F-B, S-X	Category 02 SW1	-	See glossary of terms in appendix B.	0297
-	-	-	F-B, S-X	Category 03 SW1	-	See glossary of terms in appendix B.	0299
-	-	-	F-B, S-X	Category 02 SW1	-	See glossary of terms in appendix B.	0300
-	-	-	F-B, S-Z	Category 02 SW1	SG74	See glossary of terms in appendix B.	0301
-	-	-	F-B, S-X	Category 02 SW1	-	See glossary of terms in appendix B.	0303
-	-	-	F-B, S-Y	Category 03 SW1	-	See glossary of terms in appendix B.	0305
-	-	-	F-B, S-X	Category 02 SW1	-	See glossary of terms in appendix B.	0306
-	-	-	F-B, S-X	Category 02 SW1	-	See glossary of terms in appendix B.	0312
-	-	-	F-B, S-X	Category 03 SW1	-	See glossary of terms in appendix B.	0313
-	-	-	F-B, S-X	Category 03 SW1	-	See glossary of terms in appendix B.	0314
-	-	-	F-B, S-X	Category 03 SW1	-	See glossary of terms in appendix B.	0315
-	-	-	F-B, S-X	Category 03 SW1	-	See glossary of terms in appendix B.	0316
-	-	-	F-B, S-X	Category 02 SW1	-	See glossary of terms in appendix B.	0317
-	-	-	F-B, S-X	Category 03 SW1	-	See glossary of terms in appendix B.	0318
-	-	-	F-B, S-X	Category 03 SW1	-	See glossary of terms in appendix B.	0319
-	-	-	F-B, S-X	Category 02 SW1	-	See glossary of terms in appendix B.	0320

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UN No.	Proper shipping name (PSN)	Class or division	Subsidiary risk(s)	Packing group	Special provisions	Limited and excepted quantity provisions		Packing		IBC	
						Limited quantities	Excepted quantities	Instructions	Provisions	Instructions	Provisions
(1)	(2) 3.1.2	(3) 2.0	(4) 2.0	(5) 2.0.1.3	(6) 3.3	(7a) 3.4	(7b) 3.5	(8) 4.1.4	(9) 4.1.4	(10) 4.1.4	(11) 4.1.4
0321	CARTRIDGES FOR WEAPONS with bursting charge	1.2E	-	-	-	0	E0	P130 LP101	PP67 L1	-	-
0322	ROCKET MOTORS WITH HYPERGOLIC LIQUIDS with or without expelling charge	1.2L	-	-	-	0	E0	P101	-	-	-
0323	CARTRIDGES, POWER DEVICE	1.4S	-	-	347	0	E0	P134 LP102	-	-	-
0324	PROJECTILES with bursting charge	1.2F	-	-	-	0	E0	P130	-	-	-
0325	IGNITERS	1.4G	-	-	-	0	E0	P142	-	-	-
0326	CARTRIDGES FOR WEAPONS, BLANK	1.1C	-	-	-	0	E0	P130	-	-	-
0327	CARTRIDGES FOR WEAPONS, BLANK or CARTRIDGES, SMALL ARMS, BLANK	1.3C	-	-	-	0	E0	P130	-	-	-
0328	CARTRIDGES FOR WEAPONS, INERT PROJECTILE	1.2C	-	-	-	0	E0	P130 LP101	PP67 L1	-	-
0329	TORPEDOES with bursting charge	1.1E	-	-	-	0	E0	P130 LP101	PP67 L1	-	-
0330	TORPEDOES with bursting charge	1.1F	-	-	-	0	E0	P130	-	-	-
0331	EXPLOSIVE, BLASTING, TYPE B (AGENT, BLASTING, TYPE B)	1.5D	-	-	-	0	E0	P116	PP61 PP62 PP64	IBC100	-
0332	EXPLOSIVE, BLASTING, TYPE E (AGENT, BLASTING, TYPE E)	1.5D	-	-	-	0	E0	P116	PP61 PP62	IBC100	-
0333	FIREWORKS	1.1G	-	-	-	0	E0	P135	-	-	-
0334	FIREWORKS	1.2G	-	-	-	0	E0	P135	-	-	-
0335	FIREWORKS	1.3G	-	-	-	0	E0	P135	-	-	-
0336	FIREWORKS	1.4G	-	-	-	0	E0	P135	-	-	-
0337	FIREWORKS	1.4S	-	-	-	0	E0	P135	-	-	-
0338	CARTRIDGES FOR WEAPONS, BLANK or CARTRIDGES, SMALL ARMS, BLANK	1.4C	-	-	-	0	E0	P130	-	-	-
0339	CARTRIDGES FOR WEAPONS, INERT PROJECTILE or CARTRIDGES, SMALL ARMS	1.4C	-	-	-	0	E0	P130	-	-	-
0340	NITROCELLULOSE dry or wetted with less than 25% water (or alcohol), by mass	1.1D	-	-	-	0	E0	P112 (a) or (b)	-	-	-
0341	NITROCELLULOSE unmodified or plasticized with less than 18% plasticizing substance, by mass	1.1D	-	-	-	0	E0	P112 (b)	-	-	-
0342	NITROCELLULOSE, WETTED with not less than 25% alcohol, by mass	1.3C	-	-	105	0	E0	P114 (a)	PP43	-	-

UN No.	Portable tanks and bulk containers		EmS	Stowage and handling	Segregation	Properties and observations	UN No.
	Tank instructions	Provisions					
(12)	(13) 4.2.5 4.3	(14) 4.2.5	(15) 5.4.3.2 7.8	(16a) 7.1 7.3-7.7	(16b) 7.2-7.7	(17)	(18)
-	-	-	F-B, S-X	Category 04 SW1	-	See glossary of terms in appendix B.	0321
-	-	-	F-B, S-X	Category 05 SW1	-	See glossary of terms in appendix B.	0322
-	-	-	F-B, S-X	Category 01 SW1	-	See glossary of terms in appendix B.	0323
-	-	-	F-B, S-X	Category 05 SW1	-	See glossary of terms in appendix B.	0324
-	-	-	F-B, S-X	Category 02 SW1	-	See glossary of terms in appendix B.	0325
-	-	-	F-B, S-X	Category 04 SW1	-	See glossary of terms in appendix B.	0326
-	-	-	F-B, S-X	Category 04 SW1	-	See glossary of terms in appendix B.	0327
-	-	-	F-B, S-X	Category 04 SW1	-	See glossary of terms in appendix B.	0328
-	-	-	F-B, S-X	Category 04 SW1	-	See glossary of terms in appendix B.	0329
-	-	-	F-B, S-X	Category 05 SW1	-	See glossary of terms in appendix B.	0330
-	T1	TP1 TP17 TP32	F-B, S-Y	Category 03 SW1	SG34	See glossary of terms in appendix B.	0331
-	T1	TP1 TP17 TP32	F-B, S-Y	Category 03 SW1	SG34	See glossary of terms in appendix B.	0332
-	-	-	F-B, S-X	Category 03 SW1	-	See glossary of terms in appendix B.	0333
-	-	-	F-B, S-X	Category 03 SW1	-	See glossary of terms in appendix B.	0334
-	-	-	F-B, S-X	Category 03 SW1	-	See glossary of terms in appendix B.	0335
-	-	-	F-B, S-X	Category 02 SW1	-	See glossary of terms in appendix B.	0336
-	-	-	F-B, S-X	Category 01 SW1	-	See glossary of terms in appendix B.	0337
-	-	-	F-B, S-X	Category 02 SW1	-	See glossary of terms in appendix B.	0338
-	-	-	F-B, S-X	Category 02 SW1	-	See glossary of terms in appendix B.	0339
-	-	-	F-B, S-Y	Category 04 SW1	-	Substance.	0340
-	-	-	F-B, S-Y	Category 04 SW1	-	Substance.	0341
-	-	-	F-B, S-Y	Category 04 SW1	-	Substance.	0342

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UN No.	Proper shipping name (PSN)	Class or division	Subsidiary risk(s)	Packing group	Special provisions	Limited and excepted quantity provisions		Packing		IBC	
						Limited quantities	Excepted quantities	Instructions	Provisions	Instructions	Provisions
(1)	(2) 3.1.2	(3) 2.0	(4) 2.0	(5) 2.0.1.3	(6) 3.3	(7a) 3.4	(7b) 3.5	(8) 4.1.4	(9) 4.1.4	(10) 4.1.4	(11) 4.1.4
0343	NITROCELLULOSE, PLASTICIZED with not less than 18% plasticizing substance, by mass	1.3C	-	-	105	0	E0	P111	-	-	-
0344	PROJECTILES with bursting charge	1.4D	-	-	-	0	E0	P130 LP101	PP67 L1	-	-
0345	PROJECTILES inert, with tracer	1.4S	-	-	-	0	E0	P130 LP101	PP67 L1	-	-
0346	PROJECTILES with burster or expelling charge	1.2D	-	-	-	0	E0	P130 LP101	PP67 L1	-	-
0347	PROJECTILES with burster or expelling charge	1.4D	-	-	-	0	E0	P130 LP101	PP67 L1	-	-
0348	CARTRIDGES FOR WEAPONS with bursting charge	1.4F	-	-	-	0	E0	P130	-	-	-
0349	ARTICLES, EXPLOSIVE, N.O.S.	1.4S	-	-	178 274	0	E0	P101	-	-	-
0350	ARTICLES, EXPLOSIVE, N.O.S.	1.4B	-	-	178 274	0	E0	P101	-	-	-
0351	ARTICLES, EXPLOSIVE, N.O.S.	1.4C	-	-	178 274	0	E0	P101	-	-	-
0352	ARTICLES, EXPLOSIVE, N.O.S.	1.4D	-	-	178 274	0	E0	P101	-	-	-
0353	ARTICLES, EXPLOSIVE, N.O.S.	1.4G	-	-	178 274	0	E0	P101	-	-	-
0354	ARTICLES, EXPLOSIVE, N.O.S.	1.1L	See SP943	-	178 274	0	E0	P101	-	-	-
0355	ARTICLES, EXPLOSIVE, N.O.S.	1.2L	See SP943	-	178 274	0	E0	P101	-	-	-
0356	ARTICLES, EXPLOSIVE, N.O.S.	1.3L	See SP943	-	178 274	0	E0	P101	-	-	-
0357	SUBSTANCES, EXPLOSIVE, N.O.S.	1.1L	-	-	178 274	0	E0	P101	-	-	-
0358	SUBSTANCES, EXPLOSIVE, N.O.S.	1.2L	-	-	178 274	0	E0	P101	-	-	-
0359	SUBSTANCES, EXPLOSIVE, N.O.S.	1.3L	-	-	178 274	0	E0	P101	-	-	-
0360	DETONATOR ASSEMBLIES, NON-ELECTRIC for blasting	1.1B	-	-	-	0	E0	P131	-	-	-
0361	DETONATOR ASSEMBLIES, NON-ELECTRIC for blasting	1.4B	-	-	-	0	E0	P131	-	-	-
0362	AMMUNITION, PRACTICE	1.4G	-	-	-	0	E0	P130 LP101	PP67 L1	-	-
0363	AMMUNITION, PROOF	1.4G	-	-	-	0	E0	P130 LP101	PP67 L1	-	-
0364	DETONATORS FOR AMMUNITION	1.2B	-	-	-	0	E0	P133	-	-	-
0365	DETONATORS FOR AMMUNITION	1.4B	-	-	-	0	E0	P133	-	-	-
0366	DETONATORS FOR AMMUNITION	1.4S	-	-	347	0	E0	P133	-	-	-
0367	FUZES, DETONATING	1.4S	-	-	-	0	E0	P141	-	-	-

UN No.	Portable tanks and bulk containers		EmS	Stowage and handling	Segregation	Properties and observations	UN No.
	Tank instructions	Provisions					
(12)	(13) 4.2.5 4.3	(14) 4.2.5	(15) 5.4.3.2 7.8	(16a) 7.1 7.3-7.7	(16b) 7.2-7.7	(17)	(18)
-	-	-	F-B, S-Y	Category 04 SW1	-	Substance.	0343
-	-	-	F-B, S-X	Category 02 SW1	-	See glossary of terms in appendix B.	0344
-	-	-	F-B, S-X	Category 01 SW1	-	See glossary of terms in appendix B.	0345
-	-	-	F-B, S-X	Category 04 SW1	-	See glossary of terms in appendix B.	0346
-	-	-	F-B, S-X	Category 02 SW1	-	See glossary of terms in appendix B.	0347
-	-	-	F-B, S-X	Category 05 SW1	-	See glossary of terms in appendix B.	0348
-	-	-	F-B, S-X	Category 01 SW1	-	-	0349
-	-	-	F-B, S-X	Category 05 SW1	-	-	0350
-	-	-	F-B, S-X	Category 02 SW1	-	-	0351
-	-	-	F-B, S-X	Category 02 SW1	-	-	0352
-	-	-	F-B, S-X	Category 02 SW1	-	-	0353
-	-	-	F-B, S-X	Category 05 SW1	-	-	0354
-	-	-	F-B, S-X	Category 05 SW1	-	-	0355
-	-	-	F-B, S-X	Category 05 SW1	-	-	0356
-	-	-	F-B, S-Y	Category 05 SW1	-	-	0357
-	-	-	F-B, S-Y	Category 05 SW1	-	-	0358
-	-	-	F-B, S-Y	Category 05 SW1	-	-	0359
-	-	-	F-B, S-X	Category 05 SW1	-	See glossary of terms in appendix B.	0360
-	-	-	F-B, S-X	Category 05 SW1	-	See glossary of terms in appendix B.	0361
-	-	-	F-B, S-X	Category 02 SW1	-	See glossary of terms in appendix B.	0362
-	-	-	F-B, S-X	Category 02 SW1	-	See glossary of terms in appendix B.	0363
-	-	-	F-B, S-X	Category 05 SW1	-	See glossary of terms in appendix B.	0364
-	-	-	F-B, S-X	Category 05 SW1	-	See glossary of terms in appendix B.	0365
-	-	-	F-B, S-X	Category 01 SW1	-	See glossary of terms in appendix B.	0366
-	-	-	F-B, S-X	Category 01 SW1	-	See glossary of terms in appendix B.	0367

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UN No.	Proper shipping name (PSN)	Class or division	Subsidiary risk(s)	Packing group	Special provisions	Limited and excepted quantity provisions		Packing		IBC	
						Limited quantities	Excepted quantities	Instructions	Provisions	Instructions	Provisions
(1)	(2) 3.1.2	(3) 2.0	(4) 2.0	(5) 2.0.1.3	(6) 3.3	(7a) 3.4	(7b) 3.5	(8) 4.1.4	(9) 4.1.4	(10) 4.1.4	(11) 4.1.4
0368	FUZES, IGNITING	1.4S	-	-	-	0	E0	P141	-	-	-
0369	WARHEADS, ROCKET with bursting charge	1.1F	-	-	-	0	E0	P130	-	-	-
0370	WARHEADS, ROCKET with burster or expelling charge	1.4D	-	-	-	0	E0	P130 LP101	PP67 L1	-	-
0371	WARHEADS, ROCKET with burster or expelling charge	1.4F	-	-	-	0	E0	P130	-	-	-
0372	GRENADERS, PRACTICE hand or rifle	1.2G	-	-	-	0	E0	P141	-	-	-
0373	SIGNAL DEVICES, HAND	1.4S	-	-	-	0	E0	P135	-	-	-
0374	SOUNDING DEVICES, EXPLOSIVE	1.1D	-	-	-	0	E0	P134 LP102	-	-	-
0375	SOUNDING DEVICES, EXPLOSIVE	1.2D	-	-	-	0	E0	P134 LP102	-	-	-
0376	PRIMERS, TUBULAR	1.4S	-	-	-	0	E0	P133	-	-	-
0377	PRIMERS, CAP TYPE	1.1B	-	-	-	0	E0	P133	-	-	-
0378	PRIMERS, CAP TYPE	1.4B	-	-	-	0	E0	P133	-	-	-
0379	CASES, CARTRIDGE, EMPTY, WITH PRIMER	1.4C	-	-	-	0	E0	P136	-	-	-
0380	ARTICLES, PYROPHORIC	1.2L	-	-	-	0	E0	P101	-	-	-
0381	CARTRIDGES, POWER DEVICE	1.2C	-	-	-	0	E0	P134 LP102	-	-	-
0382	COMPONENTS, EXPLOSIVE TRAIN, N.O.S.	1.2B	-	-	178 274	0	E0	P101	-	-	-
0383	COMPONENTS, EXPLOSIVE TRAIN, N.O.S.	1.4B	-	-	178 274	0	E0	P101	-	-	-
0384	COMPONENTS, EXPLOSIVE TRAIN, N.O.S.	1.4S	-	-	178 274	0	E0	P101	-	-	-
0385	5-NITROBENZOTRIAZOL	1.1D	-	-	-	0	E0	P112 (b) or (c)	-	-	-
0386	TRINITROBENZENE-SULPHONIC ACID	1.1D	-	-	-	0	E0	P112 (b) or (c)	PP26	-	-
0387	TRINITROFLUORENONE	1.1D	-	-	-	0	E0	P112 (b) or (c)	-	-	-
0388	TRINITROTOLUENE (TNT) AND TRINITROBENZENE MIXTURE or TRINITROTOLUENE (TNT) AND HEXANITROSTILBENE MIXTURE	1.1D	-	-	-	0	E0	P112 (b) or (c)	-	-	-
0389	TRINITROTOLUENE (TNT) MIXTURE CONTAINING TRINITROBENZENE AND HEXANITROSTILBENE	1.1D	-	-	-	0	E0	P112 (b) or (c)	-	-	-
0390	TRITONAL	1.1D	-	-	-	0	E0	P112 (b) or (c)	-	-	-

UN No.	Portable tanks and bulk containers		EmS	Stowage and handling	Segregation	Properties and observations	UN No.
	Tank instructions	Provisions					
(12)	(13) 4.2.5 4.3	(14) 4.2.5	(15) 5.4.3.2 7.8	(16a) 7.1 7.3-7.7	(16b) 7.2-7.7	(17)	(18)
-	-	-	F-B, S-X	Category 01 SW1	-	See glossary of terms in appendix B.	0368
-	-	-	F-B, S-X	Category 05 SW1	-	See glossary of terms in appendix B.	0369
-	-	-	F-B, S-X	Category 02 SW1	-	See glossary of terms in appendix B.	0370
-	-	-	F-B, S-X	Category 05 SW1	-	See glossary of terms in appendix B.	0371
-	-	-	F-B, S-X	Category 03 SW1	-	See glossary of terms in appendix B.	0372
-	-	-	F-B, S-X	Category 01 SW1	-	See glossary of terms in appendix B.	0373
-	-	-	F-B, S-X	Category 04 SW1	-	See glossary of terms in appendix B.	0374
-	-	-	F-B, S-X	Category 04 SW1	-	See glossary of terms in appendix B.	0375
-	-	-	F-B, S-X	Category 01 SW1	-	See glossary of terms in appendix B.	0376
-	-	-	F-B, S-X	Category 05 SW1	-	See glossary of terms in appendix B.	0377
-	-	-	F-B, S-X	Category 05 SW1	-	See glossary of terms in appendix B.	0378
-	-	-	F-B, S-X	Category 02 SW1	-	See glossary of terms in appendix B.	0379
-	-	-	F-B, S-X	Category 05 SW1	-	See glossary of terms in appendix B.	0380
-	-	-	F-B, S-X	Category 04 SW1	-	See glossary of terms in appendix B.	0381
-	-	-	F-B, S-X	Category 05 SW1	-	See glossary of terms in appendix B.	0382
-	-	-	F-B, S-X	Category 05 SW1	-	See glossary of terms in appendix B.	0383
-	-	-	F-B, S-X	Category 01 SW1	-	See glossary of terms in appendix B.	0384
-	-	-	F-B, S-Y	Category 04 SW1	-	Substance.	0385
-	-	-	F-B, S-Y	Category 04 SW1	SG31	Substance.	0386
-	-	-	F-B, S-Y	Category 04 SW1	-	Substance.	0387
-	-	-	F-B, S-Y	Category 04 SW1	-	Substance.	0388
-	-	-	F-B, S-Y	Category 04 SW1	-	Substance.	0389
-	-	-	F-B, S-Y	Category 04 SW1	-	Tritonal is a substance consisting of trinitrotoluene (TNT) mixed with aluminium.	0390

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UN No.	Proper shipping name (PSN)	Class or division	Subsidiary risk(s)	Packing group	Special provisions	Limited and excepted quantity provisions		Packing		IBC	
						Limited quantities	Excepted quantities	Instructions	Provisions	Instructions	Provisions
(1)	(2) 3.1.2	(3) 2.0	(4) 2.0	(5) 2.0.1.3	(6) 3.3	(7a) 3.4	(7b) 3.5	(8) 4.1.4	(9) 4.1.4	(10) 4.1.4	(11) 4.1.4
0391	CYCLOTRIMETHYLENE-TRINITRAMINE (CYCLONITE; HEXOGEN; RDX) AND CYCLOTETRAMETHYLENE-TETRANITRAMINE (HMX; OCTOGEN) MIXTURE, WETTED with not less than 15% water, by mass or CYCLOTRIMETHYLENE-TRINITRAMINE (CYCLONITE; HEXOGEN; RDX) AND CYCLOTETRAMETHYLENE-TETRANITRAMINE (HMX; OCTOGEN) MIXTURE, DESENSITIZED with not less than 10% phlegmatizer, by mass	1.1D	-	-	266	0	E0	P112 (a) or (b)	-	-	-
0392	HEXANITROSTILBENE	1.1D	-	-	-	0	E0	P112 (b) or (c)	-	-	-
0393	HEXOTONAL	1.1D	-	-	-	0	E0	P112 (b)	-	-	-
0394	TRINITRORESORCINOL (STYPHNIC ACID), WETTED with not less than 20% water, or mixture of alcohol and water, by mass	1.1D	-	-	-	0	E0	P112 (a)	PP26	-	-
0395	ROCKET MOTORS, LIQUID FUELLED	1.2J	-	-	-	0	E0	P101	-	-	-
0396	ROCKET MOTORS, LIQUID FUELLED	1.3J	-	-	-	0	E0	P101	-	-	-
0397	ROCKETS, LIQUID FUELLED with bursting charge	1.1J	-	-	-	0	E0	P101	-	-	-
0398	ROCKETS, LIQUID FUELLED with bursting charge	1.2J	-	-	-	0	E0	P101	-	-	-
0399	BOMBS WITH FLAMMABLE LIQUID with bursting charge	1.1J	-	-	-	0	E0	P101	-	-	-
0400	BOMBS WITH FLAMMABLE LIQUID with bursting charge	1.2J	-	-	-	0	E0	P101	-	-	-
0401	DIPICRYL SULPHIDE dry or wetted with less than 10% water, by mass	1.1D	-	-	-	0	E0	P112 (a), (b) or (c)	-	-	-
0402	AMMONIUM PERCHLORATE	1.1D	-	-	152	0	E0	P112 (b) or (c)	-	-	-
0403	FLARES, AERIAL	1.4G	-	-	-	0	E0	P135	-	-	-
0404	FLARES, AERIAL	1.4S	-	-	-	0	E0	P135	-	-	-
0405	CARTRIDGES, SIGNAL	1.4S	-	-	-	0	E0	P135	-	-	-
0406	DINITROSOBENZENE	1.3C	-	-	-	0	E0	P114 (b)	-	-	-
0407	TETRAZOL-1-ACETIC ACID	1.4C	-	-	-	0	E0	P114 (b)	-	-	-
0408	FUZES, DETONATING with protective features	1.1D	-	-	-	0	E0	P141	-	-	-
0409	FUZES, DETONATING with protective features	1.2D	-	-	-	0	E0	P141	-	-	-

UN No.	Portable tanks and bulk containers		EmS	Stowage and handling	Segregation	Properties and observations	UN No.
	Tank instructions	Provisions					
(12)	(13) 4.2.5 4.3	(14) 4.2.5	(15) 5.4.3.2 7.8	(16a) 7.1 7.3-7.7	(16b) 7.2-7.7	(17)	(18)
0391	-	-	-	F-B, S-Y	Category 04 SW1	Substance. Mass detonating explosive which will become more sensitive if the wetting or desensitizing agents are lost. This substance, when containing less alcohol, water or phlegmatizer than specified, shall not be transported, unless specifically authorized by the competent authority.	0391
0392	-	-	-	F-B, S-Y	Category 04 SW1	Substance. Mass detonating explosive.	0392
0393	-	-	-	F-B, S-Y	Category 04 SW1	Substance. Mass detonating explosive.	0393
0394	-	-	-	F-B, S-Y	Category 04 SW1	Substance. Mass detonating explosive.	0394
0395	-	-	-	F-B, S-X	Category 05 SW1	See glossary of terms in appendix B.	0395
0396	-	-	-	F-B, S-X	Category 05 SW1	See glossary of terms in appendix B.	0396
0397	-	-	-	F-B, S-X	Category 05 SW1	See glossary of terms in appendix B.	0397
0398	-	-	-	F-B, S-X	Category 05 SW1	See glossary of terms in appendix B.	0398
0399	-	-	-	F-B, S-X	Category 05 SW1	See glossary of terms in appendix B.	0399
0400	-	-	-	F-B, S-X	Category 05 SW1	See glossary of terms in appendix B.	0400
0401	-	-	-	F-B, S-Y	Category 04 SW1	Substance.	0401
0402	-	-	-	F-B, S-Y	Category 04 SW1	Substance.	0402
0403	-	-	-	F-B, S-X	Category 02 SW1	See glossary of terms in appendix B.	0403
0404	-	-	-	F-B, S-X	Category 01 SW1	See glossary of terms in appendix B.	0404
0405	-	-	-	F-B, S-X	Category 01 SW1	See glossary of terms in appendix B.	0405
0406	-	-	-	F-B, S-Y	Category 04 SW1	Substance.	0406
0407	-	-	-	F-B, S-Y	Category 02 SW1	Substance.	0407
0408	-	-	-	F-B, S-X	Category 04 SW1	See glossary of terms in appendix B.	0408
0409	-	-	-	F-B, S-X	Category 04 SW1	See glossary of terms in appendix B.	0409

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UN No.	Proper shipping name (PSN)	Class or division	Subsidiary risk(s)	Packing group	Special provisions	Limited and excepted quantity provisions		Packing		IBC	
						Limited quantities	Excepted quantities	Instructions	Provisions	Instructions	Provisions
(1)	(2) 3.1.2	(3) 2.0	(4) 2.0	(5) 2.0.1.3	(6) 3.3	(7a) 3.4	(7b) 3.5	(8) 4.1.4	(9) 4.1.4	(10) 4.1.4	(11) 4.1.4
0410	FUZES, DETONATING with protective features	1.4D	-	-	-	0	E0	P141	-	-	-
0411	PENTAERYTHRITE TETRANITRATE (PENTAERYTHRITOL TETRANITRATE; PETN) with not less than 7% wax, by mass	1.1D	-	-	131	0	E0	P112 (b) or (c)	-	-	-
0412	CARTRIDGES FOR WEAPONS with bursting charge	1.4E	-	-	-	0	E0	P130 LP101	PP67 L1	-	-
0413	CARTRIDGES FOR WEAPONS, BLANK	1.2C	-	-	-	0	E0	P130	-	-	-
0414	CHARGES, PROPELLING, FOR CANNON	1.2C	-	-	-	0	E0	P130	-	-	-
0415	CHARGES, PROPELLING	1.2C	-	-	-	0	E0	P143	PP76	-	-
0417	CARTRIDGES FOR WEAPONS, INERT PROJECTILE or CARTRIDGES, SMALL ARMS	1.3C	-	-	-	0	E0	P130	-	-	-
0418	FLARES, SURFACE	1.1G	-	-	-	0	E0	P135	-	-	-
0419	FLARES, SURFACE	1.2G	-	-	-	0	E0	P135	-	-	-
0420	FLARES, AERIAL	1.1G	-	-	-	0	E0	P135	-	-	-
0421	FLARES, AERIAL	1.2G	-	-	-	0	E0	P135	-	-	-
0424	PROJECTILES inert, with tracer	1.3G	-	-	-	0	E0	P130 LP101	PP67 L1	-	-
0425	PROJECTILES inert, with tracer	1.4G	-	-	-	0	E0	P130 LP101	PP67 L1	-	-
0426	PROJECTILES with burster or expelling charge	1.2F	-	-	-	0	E0	P130	-	-	-
0427	PROJECTILES with burster or expelling charge	1.4F	-	-	-	0	E0	P130	-	-	-
0428	ARTICLES, PYROTECHNIC for technical purposes	1.1G	-	-	-	0	E0	P135	-	-	-
0429	ARTICLES, PYROTECHNIC for technical purposes	1.2G	-	-	-	0	E0	P135	-	-	-
0430	ARTICLES, PYROTECHNIC for technical purposes	1.3G	-	-	-	0	E0	P135	-	-	-
0431	ARTICLES, PYROTECHNIC for technical purposes	1.4G	-	-	-	0	E0	P135	-	-	-
0432	ARTICLES, PYROTECHNIC for technical purposes	1.4S	-	-	-	0	E0	P135	-	-	-
0433	POWDER CAKE (POWDER PASTE), WETTED with not less than 17% alcohol, by mass	1.1C	-	-	266	0	E0	P111	-	-	-
0434	PROJECTILES with burster or expelling charge	1.2G	-	-	-	0	E0	P130 LP101	PP67 L1	-	-
0435	PROJECTILES with burster or expelling charge	1.4G	-	-	-	0	E0	P130 LP101	PP67 L1	-	-
0436	ROCKETS with expelling charge	1.2C	-	-	-	0	E0	P130 LP101	PP67 L1	-	-

UN No.	Portable tanks and bulk containers		EmS	Stowage and handling	Segregation	Properties and observations	UN No.
	Tank instructions	Provisions					
(12)	(13) 4.2.5 4.3	(14) 4.2.5	(15) 5.4.3.2 7.8	(16a) 7.1 7.3-7.7	(16b) 7.2-7.7	(17)	(18)
-	-	-	F-B, S-X	Category 02 SW1	-	See glossary of terms in appendix B.	0410
-	-	-	F-B, S-Y	Category 04 SW1	-	Substance.	0411
-	-	-	F-B, S-X	Category 03 SW1	-	See glossary of terms in appendix B.	0412
-	-	-	F-B, S-X	Category 04 SW1	-	See glossary of terms in appendix B.	0413
-	-	-	F-B, S-X	Category 04 SW1	-	See glossary of terms in appendix B.	0414
-	-	-	F-B, S-X	Category 04 SW1	-	See glossary of terms in appendix B.	0415
-	-	-	F-B, S-X	Category 04 SW1	-	See glossary of terms in appendix B.	0417
-	-	-	F-B, S-X	Category 03 SW1	-	See glossary of terms in appendix B.	0418
-	-	-	F-B, S-X	Category 03 SW1	-	See glossary of terms in appendix B.	0419
-	-	-	F-B, S-X	Category 03 SW1	-	See glossary of terms in appendix B.	0420
-	-	-	F-B, S-X	Category 03 SW1	-	See glossary of terms in appendix B.	0421
-	-	-	F-B, S-X	Category 03 SW1	-	See glossary of terms in appendix B.	0424
-	-	-	F-B, S-X	Category 02 SW1	-	See glossary of terms in appendix B.	0425
-	-	-	F-B, S-X	Category 05 SW1	-	See glossary of terms in appendix B.	0426
-	-	-	F-B, S-X	Category 05 SW1	-	See glossary of terms in appendix B.	0427
-	-	-	F-B, S-X	Category 03 SW1	-	See glossary of terms in appendix B.	0428
-	-	-	F-B, S-X	Category 03 SW1	-	See glossary of terms in appendix B.	0429
-	-	-	F-B, S-X	Category 03 SW1	-	See glossary of terms in appendix B.	0430
-	-	-	F-B, S-X	Category 02 SW1	-	See glossary of terms in appendix B.	0431
-	-	-	F-B, S-X	Category 01 SW1	-	See glossary of terms in appendix B.	0432
-	-	-	F-B, S-Y	Category 04 SW1	-	See glossary of terms in appendix B.	0433
-	-	-	F-B, S-X	Category 03 SW1	-	See glossary of terms in appendix B.	0434
-	-	-	F-B, S-X	Category 02 SW1	-	See glossary of terms in appendix B.	0435
-	-	-	F-B, S-X	Category 04 SW1	-	See glossary of terms in appendix B.	0436

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UN No.	Proper shipping name (PSN)	Class or division	Subsidiary risk(s)	Packing group	Special provisions	Limited and excepted quantity provisions		Packing		IBC	
						Limited quantities	Excepted quantities	Instructions	Provisions	Instructions	Provisions
(1)	(2) 3.1.2	(3) 2.0	(4) 2.0	(5) 2.0.1.3	(6) 3.3	(7a) 3.4	(7b) 3.5	(8) 4.1.4	(9) 4.1.4	(10) 4.1.4	(11) 4.1.4
0437	ROCKETS with expelling charge	1.3C	-	-	-	0	E0	P130 LP101	PP67 L1	-	-
0438	ROCKETS with expelling charge	1.4C	-	-	-	0	E0	P130 LP101	PP67 L1	-	-
0439	CHARGES, SHAPED without detonator	1.2D	-	-	-	0	E0	P137	PP70	-	-
0440	CHARGES, SHAPED without detonator	1.4D	-	-	-	0	E0	P137	PP70	-	-
0441	CHARGES, SHAPED without detonator	1.4S	-	-	347	0	E0	P137	PP70	-	-
0442	CHARGES, EXPLOSIVE, COMMERCIAL without detonator	1.1D	-	-	-	0	E0	P137	-	-	-
0443	CHARGES, EXPLOSIVE, COMMERCIAL without detonator	1.2D	-	-	-	0	E0	P137	-	-	-
0444	CHARGES, EXPLOSIVE, COMMERCIAL without detonator	1.4D	-	-	-	0	E0	P137	-	-	-
0445	CHARGES, EXPLOSIVE, COMMERCIAL without detonator	1.4S	-	-	347	0	E0	P137	-	-	-
0446	CASES, COMBUSTIBLE, EMPTY, WITHOUT PRIMER	1.4C	-	-	-	0	E0	P136	-	-	-
0447	CASES, COMBUSTIBLE, EMPTY, WITHOUT PRIMER	1.3C	-	-	-	0	E0	P136	-	-	-
0448	5-MERCAPTOTETRAZOL-1-ACETIC ACID	1.4C	-	-	-	0	E0	P114 (b)	-	-	-
0449	TORPEDOES, LIQUID FUELLED with or without bursting charge	1.1J	-	-	-	0	E0	P101	-	-	-
0450	TORPEDOES, LIQUID FUELLED with inert head	1.3J	-	-	-	0	E0	P101	-	-	-
0451	TORPEDOES with bursting charge	1.1D	-	-	-	0	E0	P130 LP101	PP67 L1	-	-
0452	GRENADERS, PRACTICE hand or rifle	1.4G	-	-	-	0	E0	P141	-	-	-
0453	ROCKETS, LINE-THROWING	1.4G	-	-	-	0	E0	P130	-	-	-
0454	IGNITERS	1.4S	-	-	-	0	E0	P142	-	-	-
0455	DETONATORS, NON-ELECTRIC for blasting	1.4S	-	-	347	0	E0	P131	PP68	-	-
0456	DETONATORS, ELECTRIC for blasting	1.4S	-	-	347	0	E0	P131	-	-	-
0457	CHARGES, BURSTING, PLASTICS BONDED	1.1D	-	-	-	0	E0	P130	-	-	-
0458	CHARGES, BURSTING, PLASTICS BONDED	1.2D	-	-	-	0	E0	P130	-	-	-
0459	CHARGES, BURSTING, PLASTICS BONDED	1.4D	-	-	-	0	E0	P130	-	-	-
0460	CHARGES, BURSTING, PLASTICS BONDED	1.4S	-	-	347	0	E0	P130	-	-	-
0461	COMPONENTS, EXPLOSIVE TRAIN, N.O.S.	1.1B	-	-	178 274	0	E0	P101	-	-	-
0462	ARTICLES, EXPLOSIVE, N.O.S.	1.1C	-	-	178 274	0	E0	P101	-	-	-

UN No.	Portable tanks and bulk containers		EmS	Stowage and handling	Segregation	Properties and observations	UN No.
	Tank instructions	Provisions					
(12)	(13) 4.2.5 4.3	(14) 4.2.5	(15) 5.4.3.2 7.8	(16a) 7.1 7.3-7.7	(16b) 7.2-7.7	(17)	(18)
-	-	-	F-B, S-X	Category 04 SW1	-	See glossary of terms in appendix B.	0437
-	-	-	F-B, S-X	Category 02 SW1	-	See glossary of terms in appendix B.	0438
-	-	-	F-B, S-X	Category 04 SW1	-	See glossary of terms in appendix B.	0439
-	-	-	F-B, S-X	Category 02 SW1	-	See glossary of terms in appendix B.	0440
-	-	-	F-B, S-X	Category 01 SW1	-	See glossary of terms in appendix B.	0441
-	-	-	F-B, S-X	Category 04 SW1	-	See glossary of terms in appendix B.	0442
-	-	-	F-B, S-X	Category 04 SW1	-	See glossary of terms in appendix B.	0443
-	-	-	F-B, S-X	Category 02 SW1	-	See glossary of terms in appendix B.	0444
-	-	-	F-B, S-X	Category 01 SW1	-	See glossary of terms in appendix B.	0445
-	-	-	F-B, S-X	Category 02 SW1	-	See glossary of terms in appendix B.	0446
-	-	-	F-B, S-X	Category 04 SW1	-	See glossary of terms in appendix B.	0447
-	-	-	F-B, S-Y	Category 02 SW1	-	Substance.	0448
-	-	-	F-B, S-X	Category 05 SW1	SG67	See glossary of terms in appendix B.	0449
-	-	-	F-B, S-X	Category 05 SW1	SG67	See glossary of terms in appendix B.	0450
-	-	-	F-B, S-X	Category 04 SW1	-	See glossary of terms in appendix B.	0451
-	-	-	F-B, S-X	Category 02 SW1	-	See glossary of terms in appendix B.	0452
-	-	-	F-B, S-X	Category 02 SW1	-	See glossary of terms in appendix B.	0453
-	-	-	F-B, S-X	Category 01 SW1	-	See glossary of terms in appendix B.	0454
-	-	-	F-B, S-X	Category 01 SW1	-	See glossary of terms in appendix B.	0455
-	-	-	F-B, S-X	Category 01 SW1	-	See glossary of terms in appendix B.	0456
-	-	-	F-B, S-X	Category 04 SW1	-	See glossary of terms in appendix B.	0457
-	-	-	F-B, S-X	Category 04 SW1	-	See glossary of terms in appendix B.	0458
-	-	-	F-B, S-X	Category 02 SW1	-	See glossary of terms in appendix B.	0459
-	-	-	F-B, S-X	Category 01 SW1	-	See glossary of terms in appendix B.	0460
-	-	-	F-B, S-X	Category 05 SW1	-	See glossary of terms in appendix B.	0461
-	-	-	F-B, S-X	Category 04 SW1	-	-	0462

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UN No.	Proper shipping name (PSN)	Class or division	Subsidiary risk(s)	Packing group	Special provisions	Limited and excepted quantity provisions		Packing		IBC	
						Limited quantities	Excepted quantities	Instructions	Provisions	Instructions	Provisions
(1)	(2) 3.1.2	(3) 2.0	(4) 2.0	(5) 2.0.1.3	(6) 3.3	(7a) 3.4	(7b) 3.5	(8) 4.1.4	(9) 4.1.4	(10) 4.1.4	(11) 4.1.4
0463	ARTICLES, EXPLOSIVE, N.O.S.	1.1D	-	-	178 274	0	E0	P101	-	-	-
0464	ARTICLES, EXPLOSIVE, N.O.S.	1.1E	-	-	178 274	0	E0	P101	-	-	-
0465	ARTICLES, EXPLOSIVE, N.O.S.	1.1F	-	-	178 274	0	E0	P101	-	-	-
0466	ARTICLES, EXPLOSIVE, N.O.S.	1.2C	-	-	178 274	0	E0	P101	-	-	-
0467	ARTICLES, EXPLOSIVE, N.O.S.	1.2D	-	-	178 274	0	E0	P101	-	-	-
0468	ARTICLES, EXPLOSIVE, N.O.S.	1.2E	-	-	178 274	0	E0	P101	-	-	-
0469	ARTICLES, EXPLOSIVE, N.O.S.	1.2F	-	-	178 274	0	E0	P101	-	-	-
0470	ARTICLES, EXPLOSIVE, N.O.S.	1.3C	-	-	178 274	0	E0	P101	-	-	-
0471	ARTICLES, EXPLOSIVE, N.O.S.	1.4E	-	-	178 274	0	E0	P101	-	-	-
0472	ARTICLES, EXPLOSIVE, N.O.S.	1.4F	-	-	178 274	0	E0	P101	-	-	-
0473	SUBSTANCES, EXPLOSIVE, N.O.S.	1.1A	-	-	178 274	0	E0	P101	-	-	-
0474	SUBSTANCES, EXPLOSIVE, N.O.S.	1.1C	-	-	178 274	0	E0	P101	-	-	-
0475	SUBSTANCES, EXPLOSIVE, N.O.S.	1.1D	-	-	178 274	0	E0	P101	-	-	-
0476	SUBSTANCES, EXPLOSIVE, N.O.S.	1.1G	-	-	178 274	0	E0	P101	-	-	-
0477	SUBSTANCES, EXPLOSIVE, N.O.S.	1.3C	-	-	178 274	0	E0	P101	-	-	-
0478	SUBSTANCES, EXPLOSIVE, N.O.S.	1.3G	-	-	178 274	0	E0	P101	-	-	-
0479	SUBSTANCES, EXPLOSIVE, N.O.S.	1.4C	-	-	178 274	0	E0	P101	-	-	-
0480	SUBSTANCES, EXPLOSIVE, N.O.S.	1.4D	-	-	178 274	0	E0	P101	-	-	-
0481	SUBSTANCES, EXPLOSIVE, N.O.S.	1.4S	-	-	178 274	0	E0	P101	-	-	-
0482	SUBSTANCES, EXPLOSIVE, VERY INSENSITIVE (SUBSTANCES, EVI), N.O.S.	1.5D	-	-	178 274	0	E0	P101	-	-	-
0483	CYCLOTRIMETHYLENE-TRINITRAMINE (CYCLONITE; HEXOGEN; RDX), DESENSITIZED	1.1D	-	-	-	0	E0	P112 (b) or (c)	-	-	-
0484	CYCLOTETRAMETHYLENE-TETRAMINE (OCTOGEN; HMX), DESENSITIZED	1.1D	-	-	-	0	E0	P112 (b) or (c)	-	-	-
0485	SUBSTANCES, EXPLOSIVE, N.O.S.	1.4G	-	-	178 274	0	E0	P101	-	-	-
0486	ARTICLES, EXPLOSIVE, EXTREMELY INSENSITIVE (ARTICLES, EEI)	1.6N	-	-	-	0	E0	P101	-	-	-
0487	SIGNALS, SMOKE	1.3G	-	-	-	0	E0	P135	-	-	-

UN No.	Portable tanks and bulk containers		EmS	Stowage and handling	Segregation	Properties and observations	UN No.
	Tank instructions	Provisions					
(12)	(13) 4.2.5 4.3	(14) 4.2.5	(15) 5.4.3.2 7.8	(16a) 7.1 7.3-7.7	(16b) 7.2-7.7	(17)	(18)
-	-	-	F-B, S-X	Category 04 SW1	-	-	0463
-	-	-	F-B, S-X	Category 04 SW1	-	-	0464
-	-	-	F-B, S-X	Category 05 SW1	-	-	0465
-	-	-	F-B, S-X	Category 04 SW1	-	-	0466
-	-	-	F-B, S-X	Category 04 SW1	-	-	0467
-	-	-	F-B, S-X	Category 04 SW1	-	-	0468
-	-	-	F-B, S-X	Category 05 SW1	-	-	0469
-	-	-	F-B, S-X	Category 04 SW1	-	-	0470
-	-	-	F-B, S-X	Category 03 SW1	-	-	0471
-	-	-	F-B, S-X	Category 05 SW1	-	-	0472
-	-	-	F-B, S-Y	Category 05 SW1	-	-	0473
-	-	-	F-B, S-Y	Category 04 SW1	-	-	0474
-	-	-	F-B, S-Y	Category 04 SW1	-	-	0475
-	-	-	F-B, S-Y	Category 03 SW1	-	-	0476
-	-	-	F-B, S-Y	Category 04 SW1	-	-	0477
-	-	-	F-B, S-Y	Category 03 SW1	-	-	0478
-	-	-	F-B, S-Y	Category 02 SW1	-	-	0479
-	-	-	F-B, S-Y	Category 02 SW1	-	-	0480
-	-	-	F-B, S-Y	Category 01 SW1	-	-	0481
-	-	-	F-B, S-Y	Category 03 SW1	-	-	0482
-	-	-	F-B, S-Y	Category 04 SW1	-	Substance. Mass detonating explosive which will become more sensitive if the wetting or desensitizing agents are lost.	0483
-	-	-	F-B, S-Y	Category 04 SW1	-	Substance. Mass detonating explosive which will become more sensitive if the wetting or desensitizing agents are lost.	0484
-	-	-	F-B, S-Y	Category 02 SW1	-	-	0485
-	-	-	F-B, S-X	Category 03 SW1	-	See glossary of terms in appendix B.	0486
-	-	-	F-B, S-X	Category 03 SW1	-	See glossary of terms in appendix B.	0487

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UN No.	Proper shipping name (PSN)	Class or division	Subsidiary risk(s)	Packing group	Special provisions	Limited and excepted quantity provisions		Packing		IBC	
						Limited quantities	Excepted quantities	Instructions	Provisions	Instructions	Provisions
(1)	(2) 3.1.2	(3) 2.0	(4) 2.0	(5) 2.0.1.3	(6) 3.3	(7a) 3.4	(7b) 3.5	(8) 4.1.4	(9) 4.1.4	(10) 4.1.4	(11) 4.1.4
0488	AMMUNITION, PRACTICE	1.3G	-	-	-	0	E0	P130 LP101	PP67 L1	-	-
0489	DINITROGLYCOLURIL (DINGU)	1.1D	-	-	-	0	E0	P112 (b) or (c)	-	-	-
0490	NITROTRIAZOLONE (NTO)	1.1D	-	-	-	0	E0	P112 (b) or (c)	-	-	-
0491	CHARGES, PROPELLING	1.4C	-	-	-	0	E0	P143	PP76	-	-
0492	SIGNALS, RAILWAY TRACK, EXPLOSIVE	1.3G	-	-	-	0	E0	P135	-	-	-
0493	SIGNALS, RAILWAY TRACK, EXPLOSIVE	1.4G	-	-	-	0	E0	P135	-	-	-
0494	JET PERFORATING GUNS, CHARGED oil well, without detonator	1.4D	-	-	-	0	E0	P101	-	-	-
0495	PROPELLANT, LIQUID	1.3C	-	-	224	0	E0	P115	PP53 PP54 PP57 PP58	-	-
0496	OCTONAL	1.1D	-	-	-	0	E0	P112 (b) or (c)	-	-	-
0497	PROPELLANT, LIQUID	1.1C	-	-	224	0	E0	P115	PP53 PP54 PP57 PP58	-	-
0498	PROPELLANT, SOLID	1.1C	-	-	-	0	E0	P114 (b)	-	-	-
0499	PROPELLANT, SOLID	1.3C	-	-	-	0	E0	P114 (b)	-	-	-
0500	DETONATOR ASSEMBLIES, NON-ELECTRIC for blasting	1.4S	-	-	347	0	E0	P131	-	-	-
0501	PROPELLANT, SOLID	1.4C	-	-	-	0	E0	P114 (b)	-	-	-
0502	ROCKETS with inert head	1.2C	-	-	-	0	E0	P130 LP101	PP67 L1	-	-
0503	SAFETY DEVICES, PYROTECHNIC	1.4G	-	-	235 289	0	E0	P135	-	-	-
0504	1H-TETRAZOLE	1.1D	-	-	-	0	E0	P112 (c)	PP48	-	-
0505	SIGNALS, DISTRESS, ship	1.4G	-	-	-	0	E0	P135	-	-	-
0506	SIGNALS, DISTRESS, ship	1.4S	-	-	-	0	E0	P135	-	-	-
0507	SIGNALS, SMOKE	1.4S	-	-	-	0	E0	P135	-	-	-
0508	1-HYDROXYBENZOTRIAZOLE, ANHYDROUS, dry or wetted with less than 20% water, by mass	1.3C	-	-	-	0	E0	P114 (b)	PP48 PP50	-	-
0509	POWDER, SMOKELESS	1.4C	-	-	-	0	E0	P114(b)	PP48	-	-
0510	ROCKET MOTORS	1.4C	-	-	-	0	E0	P130 LP101	PP67 L1	-	-

UN No.	Portable tanks and bulk containers		EmS	Stowage and handling	Segregation	Properties and observations	UN No.
	Tank instructions	Provisions					
(12)	(13) 4.2.5 4.3	(14) 4.2.5	(15) 5.4.3.2 7.8	(16a) 7.1 7.3-7.7	(16b) 7.2-7.7	(17)	(18)
-	-	-	F-B, S-X	Category 03 SW1	-	See glossary of terms in appendix B.	0488
-	-	-	F-B, S-Y	Category 04 SW1	-	Substance.	0489
-	-	-	F-B, S-Y	Category 04 SW1	-	Substance.	0490
-	-	-	F-B, S-X	Category 02 SW1	-	See glossary of terms in appendix B.	0491
-	-	-	F-B, S-X	Category 03 SW1	-	See glossary of terms in appendix B.	0492
-	-	-	F-B, S-X	Category 02 SW1	-	See glossary of terms in appendix B.	0493
-	-	-	F-B, S-X	Category 02 SW1	-	See glossary of terms in appendix B.	0494
-	-	-	F-B, S-Y	Category 04 SW1	-	See glossary of terms in appendix B.	0495
-	-	-	F-B, S-Y	Category 04 SW1	-	Substance. Mixtures of mass detonating explosives.	0496
-	-	-	F-B, S-Y	Category 04 SW1	-	See glossary of terms in appendix B.	0497
-	-	-	F-B, S-Y	Category 04 SW1	-	See glossary of terms in appendix B.	0498
-	-	-	F-B, S-Y	Category 04 SW1	-	See glossary of terms in appendix B.	0499
-	-	-	F-B, S-Y	Category 01 SW1	-	See glossary of terms in appendix B.	0500
-	-	-	F-B, S-X	Category 02 SW1	-	See glossary of terms in appendix B.	0501
-	-	-	F-B, S-X	Category 04 SW1	-	See glossary of terms in appendix B.	0502
-	-	-	F-B, S-X	Category 02 SW1	-	See glossary of terms in appendix B.	0503
-	-	-	F-B, S-Y	Category 04 SW1	-	Substance.	0504
-	-	-	F-B, S-X	Category 02 SW1	-	See glossary of terms in appendix B.	0505
-	-	-	F-B, S-X	Category 01 SW1	-	See glossary of terms in appendix B.	0506
-	-	-	F-B, S-X	Category 01 SW1	-	See glossary of terms in appendix B.	0507
-	-	-	F-B, S-Y	Category 04 SW1	-	Substance.	0508
-	-	-	F-B, S-Y	Category 02 SW1	-	See glossary of terms in appendix B.	0509
-	-	-	F-B, S-X	Category 02 SW1	-	See glossary of terms in appendix B.	0510

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UN No.	Proper shipping name (PSN)	Class or division	Subsidiary risk(s)	Packing group	Special provisions	Limited and excepted quantity provisions		Packing		IBC	
						Limited quantities	Excepted quantities	Instructions	Provisions	Instructions	Provisions
(1)	(2) 3.1.2	(3) 2.0	(4) 2.0	(5) 2.0.1.3	(6) 3.3	(7a) 3.4	(7b) 3.5	(8) 4.1.4	(9) 4.1.4	(10) 4.1.4	(11) 4.1.4
1001	ACETYLENE, DISSOLVED	2.1	–	–	–	0	E0	P200	–	–	–
1002	AIR, COMPRESSED	2.2	–	–	–	120 mL	E1	P200	–	–	–
1003	AIR, REFRIGERATED LIQUID	2.2	5.1	–	–	0	E0	P203	–	–	–
1005	AMMONIA, ANHYDROUS	2.3	8 P	–	23 379	0	E0	P200	–	–	–
1006	ARGON, COMPRESSED	2.2	–	–	378	120 mL	E1	P200	–	–	–
1008	BORON TRIFLUORIDE	2.3	8	–	373	0	E0	P200	–	–	–
1009	BROMOTRIFLUOROMETHANE (REFRIGERANT GAS R 13B1)	2.2	–	–	–	120 mL	E1	P200	–	–	–
1010	BUTADIENES, STABILIZED or BUTADIENES AND HYDROCARBON MIXTURE, STABILIZED, containing more than 40% butadienes	2.1	–	–	386	0	E0	P200	–	–	–
1011	BUTANE	2.1	–	–	–	0	E0	P200	–	–	–
1012	BUTYLENE	2.1	–	–	–	0	E0	P200	–	–	–
1013	CARBON DIOXIDE	2.2	–	–	378	120 mL	E1	P200	–	–	–
1016	CARBON MONOXIDE, COMPRESSED	2.3	2.1	–	–	0	E0	P200	–	–	–
1017	CHLORINE	2.3	5.1/8 P	–	–	0	E0	P200	–	–	–
1018	CHLORODIFLUOROMETHANE (REFRIGERANT GAS R 22)	2.2	–	–	–	120 mL	E1	P200	–	–	–
1020	CHLOROPENTAFLUOROETHANE (REFRIGERANT GAS R 115)	2.2	–	–	–	120 mL	E1	P200	–	–	–
1021	1-CHLORO-1,2,2,2-TETRAFLUOROETHANE (REFRIGERANT GAS R 124)	2.2	–	–	–	120 mL	E1	P200	–	–	–
1022	CHLOROTRIFLUOROMETHANE (REFRIGERANT GAS R 13)	2.2	–	–	–	120 mL	E1	P200	–	–	–
1023	COAL GAS, COMPRESSED	2.3	2.1	–	–	0	E0	P200	–	–	–
1026	CYANOGEN	2.3	2.1	–	–	0	E0	P200	–	–	–

UN No.	Portable tanks and bulk containers		EmS	Stowage and handling	Segregation	Properties and observations	UN No.
	Tank instructions	Provisions					
(12)	(13) 4.2.5 4.3	(14) 4.2.5	(15) 5.4.3.2 7.8	(16a) 7.1 7.3–7.7	(16b) 7.2–7.7	(17)	(18)
–	–	–	F-D, S-U	Category D SW1 SW2	SG46	Flammable gas with slight odour. Explosive limits: 2.1% to 80%. Lighter than air (0.907). Rough handling and exposure to local heating should be avoided, since these conditions may result in delayed explosion. Empty cylinders should be carried with the same precautions as filled cylinders.	1001
–	–	–	F-C, S-V	Category A	–	Non-flammable gas.	1002
–	T75	TP5 TP22	F-C, S-W	Category D	–	Liquefied, non-flammable gas. Strong oxidizing agent. Mixtures of liquid air with combustible materials or oils may explode. May ignite organic materials.	1003
–	T50	–	F-C, S-U	Category D SW2	SG35 SG46	Liquefied, non-flammable, toxic and corrosive gas with a pungent odour. Lighter than air (0.6). Suffocating in low concentrations. Even though this substance has a flammability hazard, it only exhibits such hazard under extreme fire conditions in confined areas. Reacts violently with acids. Highly irritating to skin, eyes and mucous membranes.	1005
–	–	–	F-C, S-V	Category A	–	Inert gas. Heavier than air (1.4).	1006
–	–	–	F-C, S-U	Category D SW2	–	Non-flammable, toxic and corrosive gas. Forms dense white corrosive fumes in moist air. Reacts violently with water, evolving hydrogen fluoride, an irritating and corrosive gas apparent as white fumes. In the presence of moisture, highly corrosive to glass and most metals. Much heavier than air (2.35). Highly irritating to skin, eyes and mucous membranes.	1008
–	T50	–	F-C, S-V	Category A	–	Liquefied, non-flammable gas with a slight odour. Much heavier than air (5.2).	1009
–	T50	–	F-D, S-U	Category B SW1 SW2	–	Liquefied, flammable gas with an unpleasant odour. Explosive limits: 2% to 12%. Heavier than air (1.84).	1010
–	T50	–	F-D, S-U	Category E SW2	–	Flammable hydrocarbon gas. Explosive limits: 1.8% to 8.4%. Heavier than air (2.11).	1011
–	T50	–	F-D, S-U	Category E SW2	–	Flammable hydrocarbon gas. Explosive limits: 1.6% to 10%. Heavier than air (2.0).	1012
–	–	–	F-C, S-V	Category A	–	Liquefied, non-flammable gas. Heavier than air (1.5). Cannot remain in the liquid state above 31°C.	1013
–	–	–	F-D, S-U	Category D SW2	–	Flammable, toxic, odourless gas. Explosive limits: 12% to 75%. Slightly lighter than air (0.97).	1016
–	T50	TP19	F-C, S-U	Category D SW2	SG6 SG19	Non-flammable, toxic and corrosive yellow gas with a pungent odour. Corrosive to glass and to most metals. Much heavier than air (2.4). Highly irritating to skin, eyes and mucous membranes. Powerful oxidant which may cause fire.	1017
–	T50	–	F-C, S-V	Category A	–	Liquefied, non-flammable gas with a chloroform-like odour. Much heavier than air (3.0).	1018
–	T50	–	F-C, S-V	Category A	–	Liquefied, non-flammable gas. Much heavier than air (5.4).	1020
–	T50	–	F-C, S-V	Category A	–	Liquefied, non-flammable gas. Much heavier than air (4.7).	1021
–	–	–	F-C, S-V	Category A	–	Liquefied, non-flammable gas. Much heavier than air (3.6). Cannot remain in the liquid state above 29°C.	1022
–	–	–	F-D, S-U	Category D SW2	–	Flammable, toxic gas. Explosive limits: 4.5% to 40%. Much lighter than air (0.4 to 0.6).	1023
–	–	–	F-D, S-U	Category D SW2	–	Liquefied, flammable, toxic gas with a pungent odour. Explosive limits: 6.6% to 43%. Heavier than air (1.9).	1026

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						Limited quantities	Excepted quantities	Instructions	Provisions	Instructions	Provisions
(1)	(2) 3.1.2	(3) 2.0	(4) 2.0	(5) 2.0.1.3	(6) 3.3	(7a) 3.4	(7b) 3.5	(8) 4.1.4	(9) 4.1.4	(10) 4.1.4	(11) 4.1.4
1027	CYCLOPROPANE	2.1	-	-	-	0	E0	P200	-	-	-
1028	DICHLORODIFLUOROMETHANE (REFRIGERANT GAS R 12)	2.2	-	-	-	120 mL	E1	P200	-	-	-
1029	DICHLOROFLUOROMETHANE (REFRIGERANT GAS R 21)	2.2	-	-	-	120 mL	E1	P200	-	-	-
1030	1,1-DIFLUOROETHANE (REFRIGERANT GAS R 152a)	2.1	-	-	-	0	E0	P200	-	-	-
1032	DIMETHYLAMINE, ANHYDROUS	2.1	-	-	-	0	E0	P200	-	-	-
1033	DIMETHYL ETHER	2.1	-	-	-	0	E0	P200	-	-	-
1035	ETHANE	2.1	-	-	-	0	E0	P200	-	-	-
1036	ETHYLAMINE	2.1	-	-	912	0	E0	P200	-	-	-
1037	ETHYL CHLORIDE	2.1	-	-	-	0	E0	P200	-	-	-
1038	ETHYLENE, REFRIGERATED LIQUID	2.1	-	-	-	0	E0	P203	-	-	-
1039	ETHYL METHYL ETHER	2.1	-	-	-	0	E0	P200	-	-	-
1040	ETHYLENE OXIDE or ETHYLENE OXIDE WITH NITROGEN up to a total pressure of 1 MPa (10 bar) at 50°C	2.3	2.1	-	342	0	E0	P200	-	-	-
1041	ETHYLENE OXIDE AND CARBON DIOXIDE MIXTURE with more than 9% but not more than 87% ethylene oxide	2.1	-	-	-	0	E0	P200	-	-	-
1043	FERTILIZER AMMONIATING SOLUTION with free ammonia	2.2	-	-	-	120 mL	E0	P200	-	-	-
1044	FIRE EXTINGUISHERS with compressed or liquefied gas	2.2	-	-	225	120 mL	E0	P003	PP91	-	-
1045	FLUORINE, COMPRESSED	2.3	5.1/8	-	-	0	E0	P200	-	-	-
1046	HELIUM, COMPRESSED	2.2	-	-	378	120 mL	E1	P200	-	-	-
1048	HYDROGEN BROMIDE, ANHYDROUS	2.3	8	-	-	0	E0	P200	-	-	-
1049	HYDROGEN, COMPRESSED	2.1	-	-	-	0	E0	P200	-	-	-
1050	HYDROGEN CHLORIDE, ANHYDROUS	2.3	8	-	-	0	E0	P200	-	-	-
1051	HYDROGEN CYANIDE, STABILIZED containing less than 3% water	6.1	3 P	I	386	0	E0	P200	-	-	-

UN No.	Portable tanks and bulk containers		EmS	Stowage and handling	Segregation	Properties and observations	UN No.
	Tank instructions	Provisions					
(12)	(13) 4.2.5 4.3	(14) 4.2.5	(15) 5.4.3.2 7.8	(16a) 7.1 7.3-7.7	(16b) 7.2-7.7	(17)	(18)
-	T50	-	F-D, S-U	Category E SW2	-	Flammable hydrocarbon gas. Heavier than air.	1027
-	T50	-	F-C, S-V	Category A	-	Liquefied, non-flammable gas. Much heavier than air (4.2).	1028
-	T50	-	F-C, S-V	Category A	-	Liquefied, non-flammable gas with a chloroform-like odour. Much heavier than air (3.6). Boiling point: 9°C.	1029
-	T50	-	F-D, S-U	Category B SW2	-	Flammable gas. Explosive limits: 5% to 17%. Much heavier than air (2.3).	1030
-	T50	-	F-D, S-U	Category D SW2	-	Liquefied, flammable gas with an ammonia-like odour. Heavier than air (1.6). Boiling point: 7°C. Suffocating in low concentrations.	1032
-	T50	-	F-D, S-U	Category B SW2	-	Flammable gas with a chloroform-like odour. Heavier than air (1.6).	1033
-	-	-	F-D, S-U	Category E SW2	-	Flammable gas. Explosive limits: 3% to 16%. Slightly heavier than air (1.05).	1035
-	T50	-	F-D, S-U	Category D SW2	-	Liquefied, flammable gas with an ammonia-like odour. Explosive limits: 3.5% to 14%. Heavier than air (1.6). Boiling point: 17°C.	1036
-	T50	-	F-D, S-U	Category B SW2	-	Liquefied, flammable gas. Explosive limits: 3.5% to 15%. Much heavier than air (2.2). Boiling point: 13°C.	1037
-	T75	TP5	F-D, S-U	Category D SW2	-	Liquefied, flammable gas. Explosive limits: 3% to 34%. Lighter than air (0.98).	1038
-	-	-	F-D, S-U	Category B SW2	-	Liquefied, flammable gas. Explosive limits: 2% to 10%. Much heavier than air (2.1). Boiling point: 11°C.	1039
-	T50	TP20 TP90	F-D, S-U	Category D SW2	-	Liquefied, flammable, toxic gases with an ether-like odour. Heavier than air (1.5). Boiling point: 11°C.	1040
-	T50	-	F-D, S-U	Category B SW2	-	Liquefied, flammable gas with an ether-like odour. Heavier than air (1.5).	1041
-	-	-	F-C, S-V	Category E SW2	-	Non-flammable aqueous solution of ammonium nitrate, calcium nitrate, urea and their mixtures containing ammonia gas. Emits toxic vapours of ammonia.	1043
-	-	-	F-C, S-V	Category A	-	Fire extinguishers, containing compressed or liquefied gases under pressure above 175 kPa for expelling fire-extinguishing contents.	1044
-	-	-	F-C, S-W	Category D SW2	SG6 SG19	Non-flammable, toxic and corrosive pale yellowish gas with a pungent odour. Powerful oxidant which may cause fire. Reacts with water or moist air to produce toxic and corrosive fumes. Corrosive to glass and to most metals. Will explode when mixed with hydrogen. Heavier than air (1.3). Highly irritating to skin, eyes and mucous membranes.	1045
-	-	-	F-C, S-V	Category A	-	Inert gas. Much lighter than air (0.14).	1046
-	-	-	F-C, S-U	Category D SW2	-	Non-flammable, toxic and corrosive gas with a pungent odour. Highly corrosive in the presence of water. Much heavier than air (3.6). Highly irritating to the skin, eyes and mucous membranes.	1048
-	-	-	F-D, S-U	Category E SW2	SG46	Flammable, odourless gas. Explosive limits: 4% to 75%. Much lighter than air (0.07).	1049
-	-	-	F-C, S-U	Category D SW2	-	Non-flammable, toxic and corrosive colourless gas with a pungent odour. Highly corrosive in the presence of water. Heavier than air (1.3). Highly irritating to skin, eyes and mucous membranes.	1050
-	-	-	F-E, S-D	Category D SW1 SW2	-	Very volatile, colourless flammable liquid, evolving extremely toxic flammable vapours. Boiling point: 26°C. Flashpoint: -18°C c.c. Miscible with water. Highly toxic if swallowed, by skin contact or by inhalation.	1051

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						Limited quantities	Excepted quantities	Instructions	Provisions	Instructions	Provisions
(1)	(2) 3.1.2	(3) 2.0	(4) 2.0	(5) 2.0.1.3	(6) 3.3	(7a) 3.4	(7b) 3.5	(8) 4.1.4	(9) 4.1.4	(10) 4.1.4	(11) 4.1.4
1052	HYDROGEN FLUORIDE, ANHYDROUS	8	6.1	I	–	0	E0	P200	–	–	–
1053	HYDROGEN SULPHIDE	2.3	2.1	–	–	0	E0	P200	–	–	–
1055	ISOBUTYLENE	2.1	–	–	–	0	E0	P200	–	–	–
1056	KRYPTON, COMPRESSED	2.2	–	–	378	120 mL	E1	P200	–	–	–
1057	LIGHTERS or LIGHTER REFILLS containing flammable gas	2.1	–	–	201	0	E0	P002	PP84	–	–
1058	LIQUEFIED GASES non-flammable, charged with nitrogen, carbon dioxide or air	2.2	–	–	–	120 mL	E1	P200	–	–	–
1060	METHYLACETYLENE AND PROPADIENE MIXTURE, STABILIZED	2.1	–	–	386	0	E0	P200	–	–	–
1061	METHYLAMINE, ANHYDROUS	2.1	–	–	–	0	E0	P200	–	–	–
1062	METHYL BROMIDE with not more than 2.0% chloropicrin	2.3	–	–	23	0	E0	P200	–	–	–
1063	METHYL CHLORIDE (REFRIGERANT GAS R 40)	2.1	–	–	–	0	E0	P200	–	–	–
1064	METHYL MERCAPTAN	2.3	2.1 P	–	–	0	E0	P200	–	–	–
1065	NEON, COMPRESSED	2.2	–	–	378	120 mL	E1	P200	–	–	–
1066	NITROGEN, COMPRESSED	2.2	–	–	378	120 mL	E1	P200	–	–	–
1067	DINITROGEN TETROXIDE (NITROGEN DIOXIDE)	2.3	5.1/8	–	–	0	E0	P200	–	–	–
1069	NITROSYL CHLORIDE	2.3	8	–	–	0	E0	P200	–	–	–
1070	NITROUS OXIDE	2.2	5.1	–	–	0	E0	P200	–	–	–
1071	OIL GAS, COMPRESSED	2.3	2.1	–	–	0	E0	P200	–	–	–
1072	OXYGEN, COMPRESSED	2.2	5.1	–	355	0	E0	P200	–	–	–
1073	OXYGEN, REFRIGERATED LIQUID	2.2	5.1	–	–	0	E0	P203	–	–	–
1075	PETROLEUM GASES, LIQUEFIED	2.1	–	–	–	0	E0	P200	–	–	–

UN No.	Portable tanks and bulk containers		EmS	Stowage and handling	Segregation	Properties and observations	UN No.
	Tank instructions	Provisions					
(12)	(13) 4.2.5 4.3	(14) 4.2.5	(15) 5.4.3.2 7.8	(16a) 7.1 7.3–7.7	(16b) 7.2–7.7	(17)	(18)
–	T10	TP2	F-C, S-U	Category D SW2	–	Colourless, fuming and highly volatile liquid with an irritating and pungent odour. Highly corrosive to metals and glass in the presence of moisture. Boiling point: 20°C. Toxic if swallowed, by skin contact or by inhalation. Causes severe burns to skin, eyes and mucous membranes.	1052
–	–	–	F-D, S-U	Category D SW2	–	Liquefied, flammable, toxic gas with a foul odour. Heavier than air (1.2).	1053
–	T50	–	F-D, S-U	Category E SW2	–	Flammable hydrocarbon gas. Explosive limits: 1.8% to 8.8%. May contain propane, cyclopropane, propylene, butane, butylene, etc., in varying proportions. Heavier than air (1.94).	1055
–	–	–	F-C, S-V	Category A SW1	–	Inert gas. Much heavier than air (2.9).	1056
–	–	–	F-D, S-U	Category B SW2	–	Lighters or lighter refills containing butane or other flammable gas.	1057
–	–	–	F-C, S-V	Category A	–	Non-flammable gases or mixtures of such gases which are used for filling receptacles from which the contents are to be dispersed under pressure. Vapour may be heavier than air.	1058
–	T50	–	F-D, S-U	Category B SW1 SW2	–	Flammable gas. Explosive limits: 3% to 11%. Heavier than air (1.4).	1060
–	T50	–	F-D, S-U	Category B SW2	–	Liquefied, flammable gas with an ammonia-like odour. Heavier than air (1.09).	1061
–	T50	–	F-C, S-U	Category D SW2	–	Liquefied, toxic gas with a chloroform-like odour. Much heavier than air (3.3). Boiling point: 4.5°C. Even though this substance has a flammability hazard, it only exhibits such hazard under extreme fire conditions in confined areas.	1062
–	T50	–	F-D, S-U	Category D SW2	–	Liquefied, flammable gas. Explosive limits: 8% to 20%. Heavier than air (1.8).	1063
–	T50	–	F-D, S-U	Category D SW2	–	Liquefied, flammable, toxic gas with a foul odour. Heavier than air (1.7). Boiling point: 6°C.	1064
–	–	–	F-C, S-V	Category A	–	Inert gas. Lighter than air (0.7).	1065
–	–	–	F-C, S-V	Category A	–	Non-flammable, odourless gas. Lighter than air (0.97).	1066
–	T50	TP21	F-C, S-W	Category D SW2	SG6 SG19	Liquefied, non-flammable, toxic and corrosive gas which gives off brown vapour with a pungent odour. Strong oxidizing agent. Boiling point: 21°C. Highly irritating to skin, eyes and mucous membranes. Toxic by inhalation, with delayed effect, similar to phosgene.	1067
–	–	–	F-C, S-U	Category D SW2	–	Non-flammable, toxic yellow gas with an irritating odour. Corrosive to steel. Much heavier than air (2.3). Highly irritating to skin, eyes and mucous membranes.	1069
–	–	–	F-C, S-W	Category A SW2	–	Non-flammable gas. Strong oxidizing agent. Heavier than air (1.5).	1070
–	–	–	F-D, S-U	Category D SW2	–	Flammable, toxic gas. A mixture of hydrocarbons and carbon monoxide.	1071
–	–	–	F-C, S-W	Category A	–	Non-flammable, odourless gas. Strong oxidizing agent. Heavier than air (1.1).	1072
–	T75	TP5 TP22	F-C, S-W	Category D	–	Liquefied, non-flammable gas. Strong oxidizing agent. Mixtures of liquid oxygen with acetylene or oils may explode.	1073
–	T50	–	F-D, S-U	Category E SW2	–	Flammable hydrocarbon gases or mixtures obtained from natural gas or by distillation of mineral oils or coal, etc. May contain propane, cyclopropane, propylene, butane, butylene, etc., in varying proportions. Heavier than air.	1075

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						Limited quantities	Excepted quantities	Instructions	Provisions	Instructions	Provisions
(1)	(2) 3.1.2	(3) 2.0	(4) 2.0	(5) 2.0.1.3	(6) 3.3	(7a) 3.4	(7b) 3.5	(8) 4.1.4	(9) 4.1.4	(10) 4.1.4	(11) 4.1.4
1076	PHOSGENE	2.3	8	-	-	0	E0	P200	-	-	-
1077	PROPYLENE	2.1	-	-	-	0	E0	P200	-	-	-
1078	REFRIGERANT GAS, N.O.S.	2.2	-	-	274	120 mL	E1	P200	-	-	-
1079	SULPHUR DIOXIDE	2.3	8	-	-	0	E0	P200	-	-	-
1080	SULPHUR HEXAFLUORIDE	2.2	-	-	-	120 mL	E1	P200	-	-	-
1081	TETRAFLUROETHYLENE, STABILIZED	2.1	-	-	386	0	E0	P200	-	-	-
1082	TRIFLUOROCHLORO-ETHYLENE, STABILIZED (REFRIGERANT GAS R 1113)	2.3	2.1	-	386	0	E0	P200	-	-	-
1083	TRIMETHYLAMINE, ANHYDROUS	2.1	-	-	-	0	E0	P200	-	-	-
1085	VINYL BROMIDE, STABILIZED	2.1	-	-	386	0	E0	P200	-	-	-
1086	VINYL CHLORIDE, STABILIZED	2.1	-	-	386	0	E0	P200	-	-	-
1087	VINYL METHYL ETHER, STABILIZED	2.1	-	-	386	0	E0	P200	-	-	-
1088	ACETAL	3	-	II	-	1 L	E2	P001	-	IBC02	-
1089	ACETALDEHYDE	3	-	I	-	0	E0	P001	-	-	-
1090	ACETONE	3	-	II	-	1 L	E2	P001	-	IBC02	-
1091	ACETONE OILS	3	-	II	-	1 L	E2	P001	-	IBC02	-
1092	ACROLEIN, STABILIZED	6.1	3 P	I	354 386	0	E0	P601	-	-	-
1093	ACRYLONITRILE, STABILIZED	3	6.1	I	386	0	E0	P001	-	-	-
1098	ALLYL ALCOHOL	6.1	3 P	I	354	0	E0	P602	-	-	-

UN No.	Portable tanks and bulk containers		EmS	Stowage and handling	Segregation	Properties and observations	UN No.
	Tank instructions	Provisions					
(12)	(13) 4.2.5 4.3	(14) 4.2.5	(15) 5.4.3.2 7.8	(16a) 7.1 7.3-7.7	(16b) 7.2-7.7	(17)	(18)
-	-	-	F-C, S-U	Category D SW2	-	Liquefied, non-flammable, toxic and corrosive gas with a foul odour. Corrosive in the presence of water. Much heavier than air (3.5). Boiling point: 8°C. Highly irritating to skin, eyes and mucous membranes. This gas is particularly dangerous in that it may be inhaled without immediate effect but can cause severe damage and death after a few hours' delay.	1076
-	T50	-	F-D, S-U	Category E SW2	-	Flammable hydrocarbon gas. Explosive limits: 2% to 11.1%. Heavier than air (1.5).	1077
-	T50	-	F-C, S-V	Category A	-	Different chlorofluorohydrocarbons or other non-flammable, non-toxic gases considered as refrigerant agents.	1078
-	T50	TP19	F-C, S-U	Category D SW2	-	Non-flammable, toxic and corrosive gas with a pungent odour. Much heavier than air (2.3). Highly irritating to skin, eyes and mucous membranes.	1079
-	-	-	F-C, S-V	Category A	-	Liquefied, non-flammable, odourless gas. Much heavier than air (5.1).	1080
-	-	-	F-D, S-U	Category E SW1 SW2	-	Liquefied, flammable gas. Explosive limits: 11% to 60%. Much heavier than air (3.5). Irritating to skin, eyes and mucous membranes.	1081
-	T50	-	F-D, S-U	Category D SW1 SW2	-	Flammable, toxic, odourless gas. Explosive limits: 8.4% to 38.7%. Much heavier than air (4.0).	1082
-	T50	-	F-D, S-U	Category B SW2	-	Liquefied, flammable gas with a fishy odour. Explosive limits: 2% to 12%. Much heavier than air (2.1). Boiling point: 3°C.	1083
-	T50	-	F-D, S-U	Category B SW1 SW2	-	Liquefied, flammable gas. Much heavier than air (3.7). Boiling point: 16°C.	1085
-	T50	-	F-D, S-U	Category B SW1 SW2	-	Liquefied, flammable gas. Explosive limits: 4% to 31%. Much heavier than air (2.2).	1086
-	T50	-	F-D, S-U	Category B SW1 SW2	-	Liquefied, flammable gas. Explosive limits: 2.6% to 39%. Heavier than air (2.0). Boiling point: 6°C.	1087
-	T4	TP1	F-E, S-D	Category E	-	Colourless, volatile liquid with an agreeable odour. Flashpoint: below -18°C c.c. Explosive limits: 1.6% to 10.4%. Miscible with water.	1088
-	T11	TP2 TP7	F-E, S-D	Category E	-	Colourless liquid with a pungent, fruity odour. Flashpoint: -27°C c.c. Explosive limits: 4% to 57%. Boiling point: 21°C. Miscible with water. Harmful if swallowed or by inhalation.	1089
-	T4	TP1	F-E, S-D	Category E	-	Colourless, clear liquid, with a characteristic mint-like odour. Flashpoint: -20°C to -18°C c.c. Explosive limits: 2.5% to 13%. Miscible with water.	1090
-	T4	TP1 TP8	F-E, S-D	Category B	-	Light yellow to brownish, oily liquids. Flashpoint: -4°C to 8°C c.c. Immiscible with water.	1091
-	T22	TP2 TP7 TP13 TP35	F-E, S-D	Category D SW1 SW2	-	Colourless or yellow liquid with a most irritating odour. Flashpoint: -26°C c.c. Explosive limits: 2.8% to 31%. Boiling point: 52°C. Miscible with water. Highly toxic if swallowed, by skin contact or by inhalation.	1092
-	T14	TP2 TP13	F-E, S-D	Category D SW1 SW2	-	Colourless, mobile liquid with a mild pungent odour. Flashpoint: -5°C c.c. Explosive limits: 3% to 17%. Partially miscible with water. Toxic if swallowed, by skin contact or by inhalation. Practice has shown that this substance may leak from packagings that ordinarily are leakproof to other chemicals.	1093
-	T20	TP2 TP13 TP35	F-E, S-D	Category D SW2	-	Colourless liquid with a pungent mustard-like odour. Flashpoint: 21°C c.c. Explosive limits: 2.5% to 18%. Miscible with water. Highly toxic if swallowed, by skin contact or by inhalation.	1098

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(1)	(2) 3.1.2	(3) 2.0	(4) 2.0	(5) 2.0.1.3	(6) 3.3	(7a) 3.4	(7b) 3.5	(8) 4.1.4	(9) 4.1.4	(10) 4.1.4	(11) 4.1.4
1099	ALLYL BROMIDE	3	6.1 P	I	–	0	E0	P001	–	–	–
1100	ALLYL CHLORIDE	3	6.1	I	–	0	E0	P001	–	–	–
1104	AMYL ACETATES	3	–	III	–	5 L	E1	P001 LP01	–	IBC03	–
1105	PENTANOLS	3	–	II	–	1 L	E2	P001	–	IBC02	–
1105	PENTANOLS	3	–	III	223	5 L	E1	P001 LP01	–	IBC03	–
1106	AMYLAMINE	3	8	II	–	1 L	E2	P001	–	IBC02	–
1106	AMYLAMINE	3	8	III	223	5 L	E1	P001	–	IBC03	–
1107	AMYL CHLORIDE	3	–	II	–	1 L	E2	P001	–	IBC02	–
1108	1-PENTENE (<i>n</i> -AMYLENE)	3	–	I	–	0	E3	P001	–	–	–
1109	AMYL FORMATES	3	–	III	–	5 L	E1	P001 LP01	–	IBC03	–
1110	<i>n</i> -AMYL METHYL KETONE	3	–	III	–	5 L	E1	P001 LP01	–	IBC03	–
1111	AMYL MERCAPTAN	3	–	II	–	1 L	E2	P001	–	IBC02	–
1112	AMYL NITRATE	3	–	III	–	5 L	E1	P001 LP01	–	IBC03	–
1113	AMYL NITRITE	3	–	II	–	1 L	E2	P001	–	IBC02	–
1114	BENZENE	3	–	II	–	1 L	E2	P001	–	IBC02	–

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	Tank instructions	Provisions					
(12)	(13) 4.2.5 4.3	(14) 4.2.5	(15) 5.4.3.2 7.8	(16a) 7.1 7.3–7.7	(16b) 7.2–7.7	(17)	(18)
–	T14	TP2 TP13	F-E, S-D	Category B SW2	–	Colourless to light yellow liquid with an irritating odour. Flashpoint: –1°C c.c. Explosive limits: 4.4% to 7.3%. Immiscible with water. Highly toxic if swallowed, by skin contact or by inhalation.	1099
–	T14	TP2 TP13	F-E, S-D	Category E SW2	–	Colourless liquid with an unpleasant pungent odour. Flashpoint: –29°C c.c. Explosive limits: 3.3% to 11.1%. Boiling point: 44°C. Immiscible with water. Toxic if swallowed, by skin contact or by inhalation.	1100
–	T2	TP1	F-E, S-D	Category A	–	Colourless liquids with a pear- or banana-like odour. <i>normal</i> -AMYL ACETATE: flashpoint 25°C c.c. <i>secondary</i> -AMYL ACETATE: flashpoint 32°C c.c. Immiscible with water.	1104
–	T4	TP1 TP29	F-E, S-D	Category B	–	Colourless liquids with a strong odour. Immiscible with water. <i>tertiary</i> -AMYL ALCOHOL: flashpoint 19°C to 21°C c.c.	1105
–	T2	TP1	F-E, S-D	Category A	–	See entry above. Explosive limits: 1.2% to 10.5%.	1105
–	T7	TP1	F-E, S-C	Category B	–	Colourless, clear liquids. Explosive limits: 2.2% to 22%. <i>normal</i> -AMYLAMINE (1-PENTYLAMINE): flashpoint 4°C c.c. <i>tertiary</i> -AMYLAMINE (3-PENTYLAMINE): flashpoint 2°C c.c. Miscible with water. Harmful by inhalation. Cause burns to skin, eyes and mucous membranes.	1106
–	T4	TP1	F-E, S-C	Category A	–	See entry above. However, irritating to skin, eyes and mucous membranes.	1106
–	T4	TP1	F-E, S-D	Category B	–	Colourless or light brown liquids with an aromatic odour. <i>n</i> -AMYL CHLORIDE: flashpoint 11°C. Explosive limits: <i>normal</i> -AMYL CHLORIDE 1.4% to 8.6%. Immiscible with water.	1107
–	T11	TP2	F-E, S-D	Category E	–	Colourless, volatile liquid with a disagreeable odour. Flashpoint: –20°C c.c. Explosive limits: 1.4% to 8.7%. Boiling point: 30°C. Immiscible with water. Irritating to skin, eyes and mucous membranes. Narcotic in high concentrations.	1108
–	T2	TP1	F-E, S-D	Category A	–	Colourless liquids with a pleasant odour. <i>normal</i> -AMYL FORMATE: flashpoint 27°C c.c. ISOAMYL FORMATE: flashpoint 26°C c.c. Explosive limits: 1.7% to 10%. Immiscible with water.	1109
–	T2	TP1	F-E, S-D	Category A	–	Colourless liquid. Flashpoint: 49°C c.c. Immiscible with water.	1110
–	T4	TP1	F-E, S-D	Category B	SG50 SG57	Colourless to yellow liquids with an extremely disagreeable garlic-like odour. <i>tertiary</i> -AMYL MERCAPTAN: flashpoint –7°C c.c. <i>normal</i> -AMYL MERCAPTAN: flashpoint 19°C c.c. ISOAMYL MERCAPTAN: flashpoint 18°C c.c. Immiscible with water. These substances may leak from packagings that ordinarily are leakproof to other chemicals.	1111
–	T2	TP1	F-E, S-D	Category A SW2	–	Colourless liquids with an ether-like odour. <i>normal</i> -AMYL NITRATE: flashpoint 48°C c.c. ISOAMYL NITRATE: flashpoint 52°C c.c. Immiscible with water. Harmful by inhalation.	1112
–	T4	TP1	F-E, S-D	Category E SW2	–	Yellowish, transparent, volatile liquid with a fragrant fruity odour. Flashpoint of the pure ISOAMYL NITRITE: –20°C c.c. Flashpoint of pure <i>normal</i> -AMYL NITRITE: 10°C c.c. Decomposes on exposure to air, light or water, evolving toxic nitrous fumes which are orange in colour. Immiscible with water. Harmful by inhalation.	1113
–	T4	TP1	F-E, S-D	Category B SW2	–	Colourless liquid with a characteristic odour. Flashpoint: –11°C c.c. Explosive limits: 1.4% to 8%. Freezing point 5°C; flashes below its freezing point. Immiscible with water. Narcotic. Exposure to this substance may produce serious chronic effects of a toxic nature.	1114

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(1)	(2) 3.1.2	(3) 2.0	(4) 2.0	(5) 2.0.1.3	(6) 3.3	(7a) 3.4	(7b) 3.5	(8) 4.1.4	(9) 4.1.4	(10) 4.1.4	(11) 4.1.4
1120	BUTANOLS	3	–	II	–	1 L	E2	P001	–	IBC02	–
1120	BUTANOLS	3	–	III	223	5 L	E1	P001 LP01	–	IBC03	–
1123	BUTYL ACETATES	3	–	II	–	1 L	E2	P001	–	IBC02	–
1123	BUTYL ACETATES	3	–	III	223	5 L	E1	P001 LP01	–	IBC03	–
1125	<i>n</i> -BUTYLAMINE	3	8	II	–	1 L	E2	P001	–	IBC02	–
1126	1-BROMOBUTANE	3	–	II	–	1 L	E2	P001	–	IBC02	–
1127	CHLOROBUTANES	3	–	II	–	1 L	E2	P001	–	IBC02	–
1128	<i>n</i> -BUTYL FORMATE	3	–	II	–	1 L	E2	P001	–	IBC02	–
1129	BUTYRALDEHYDE	3	–	II	–	1 L	E2	P001	–	IBC02	–
1130	CAMPHOR OIL	3	–	III	–	5 L	E1	P001 LP01	–	IBC03	–
1131	CARBON DISULPHIDE	3	6.1	I	–	0	E0	P001	PP31	–	–
1133	ADHESIVES containing flammable liquid	3	–	I	–	500 mL	E3	P001	–	–	–
1133	ADHESIVES containing flammable liquid	3	–	II	–	5 L	E2	P001	PP1	IBC02	–
1133	ADHESIVES containing flammable liquid	3	–	III	223 955	5 L	E1	P001 LP01	PP1	IBC03	–
1134	CHLOROBENZENE	3	–	III	–	5 L	E1	P001 LP01	–	IBC03	–
1135	ETHYLENE CHLOROHYDRIN	6.1	3	I	354	0	E0	P602	–	–	–
1136	COAL TAR DISTILLATES, FLAMMABLE	3	–	II	–	1 L	E2	P001	–	IBC02	–
1136	COAL TAR DISTILLATES, FLAMMABLE	3	–	III	223 955	5 L	E1	P001 LP01	–	IBC03	–

UN No.	Portable tanks and bulk containers		EmS	Stowage and handling	Segregation	Properties and observations	UN No.
	Tank instructions	Provisions					
(12)	(13) 4.2.5 4.3	(14) 4.2.5	(15) 5.4.3.2 7.8	(16a) 7.1 7.3–7.7	(16b) 7.2–7.7	(17)	(18)
–	T4	TP1 TP29	F-E, S-D	Category B	–	Colourless liquids with a disagreeable odour. Explosive limits: <i>normal</i> -BUTANOL 1.4% to 11.2%. <i>secondary</i> -BUTANOL 1.7% to 9.8%. <i>tertiary</i> -BUTANOL 2.4% to 8%. <i>tertiary</i> -BUTANOL solidifies at about 25°C. <i>normal</i> -BUTANOL is immiscible with water. <i>secondary</i> -BUTANOL is immiscible with water. <i>tertiary</i> -BUTANOL is miscible with water. Irritating to skin, eyes and mucous membranes.	1120
–	T2	TP1	F-E, S-D	Category A	–	See entry above.	1120
–	T4	TP1	F-E, S-D	Category B	–	Colourless liquids with a pineapple-like odour. Immiscible with water. <i>normal</i> -BUTYL ACETATE: flashpoint 27°C c.c. Explosive limits: 1.5% to 15%.	1123
–	T2	TP1	F-E, S-D	Category A	–	See entry above.	1123
–	T7	TP1	F-E, S-C	Category B SW2	–	Flashpoint: –9°C c.c. Explosive limits: 1.7% to 10%. Colourless, volatile liquid with an ammonia-like odour. Miscible with water. Causes burns to skin, eyes and mucous membranes.	1125
–	T4	TP1	F-E, S-D	Category B SW2	–	Colourless to pale straw-coloured, clear liquid. Flashpoint: 13°C c.c. Explosive limits: 2.6% to 6.6%. Immiscible with water. Narcotic.	1126
–	T4	TP1	F-E, S-D	Category B	–	Colourless liquids. <i>tertiary</i> -BUTYL CHLORIDE: flashpoint –30°C c.c., boiling point 51°C. Immiscible with water.	1127
–	T4	TP1	F-E, S-D	Category B	–	Colourless liquid. Flashpoint: 18°C c.c. Explosive limits: 1.6% to 8.3%. Immiscible with water.	1128
–	T4	TP1	F-E, S-D	Category B	–	Colourless liquid with a characteristic pungent odour. Flashpoint: –7°C c.c. Explosive limits: 1.4% to 12.5%. Immiscible with water.	1129
–	T2	TP1	F-E, S-E	Category A	–	Colourless oil with a characteristic odour. Flashpoint: 47°C c.c. Immiscible with water.	1130
–	T14	TP2 TP7 TP13	F-E, S-D	Category D SW2	SG63	Colourless or faintly yellow, clear liquid, almost odourless when pure; the commercial substance has a strong disagreeable odour. Flashpoint: –30°C c.c. Explosive limits: 1% to 60%. Boiling point: 46°C. Ignition temperature: 100°C. Immiscible with water. Vapours are heavier than air, will travel a considerable distance to a source of ignition and will flash back. Vapours may be ignited by contact with an ordinary light bulb or a warm steam pipe. Toxic if swallowed, by skin contact or by inhalation.	1131
–	T11	TP1 TP8 TP27	F-E, S-D	Category E	–	Adhesives are solutions of gums, resins, etc., usually volatile due to the solvents. Miscibility with water depends upon their composition.	1133
–	T4	TP1 TP8	F-E, S-D	Category B	–	See entry above.	1133
–	T2	TP1	F-E, S-D	Category A	–	See entry above.	1133
–	T2	TP1	F-E, S-D	Category A	–	Colourless liquid with an almond-like odour. Flashpoint: 29°C c.c. Explosive limits: 1.3% to 11%. Immiscible with water.	1134
–	T20	TP2 TP13 TP37	F-E, S-D	Category D SW2	–	Colourless flammable liquid with a faint, ethereal odour. Flashpoint: 60°C o.c. Explosive limits: 4.9% to 15.9%. Miscible with water. When involved in a fire, evolves extremely toxic (phosgene) and corrosive (hydrogen chloride) fumes. Highly toxic if swallowed, by skin contact or by inhalation.	1135
–	T4	TP1	F-E, <u>S-E</u>	Category B	–	Immiscible with water. May form extremely sensitive compounds with heavy metals or their salts.	1136
–	T4	TP1 TP29	F-E, <u>S-E</u>	Category A	–	See entry above.	1136

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						Limited quantities	Excepted quantities	Instructions	Provisions	Instructions	Provisions
(1)	(2) 3.1.2	(3) 2.0	(4) 2.0	(5) 2.0.1.3	(6) 3.3	(7a) 3.4	(7b) 3.5	(8) 4.1.4	(9) 4.1.4	(10) 4.1.4	(11) 4.1.4
1139	COATING SOLUTION (includes surface treatments or coatings used for industrial or other purposes such as vehicle under-coating, drum or barrel lining)	3	–	I	–	500 mL	E3	P001	–	–	–
1139	COATING SOLUTION (includes surface treatments or coatings used for industrial or other purposes such as vehicle under-coating, drum or barrel lining)	3	–	II	–	5 L	E2	P001	–	IBC02	–
1139	COATING SOLUTION (includes surface treatments or coatings used for industrial or other purposes such as vehicle under-coating, drum or barrel lining)	3	–	III	955	5 L	E1	P001 LP01	–	IBC03	–
1143	CROTONALDEHYDE or CROTONALDEHYDE, STABILIZED	6.1	3 P	I	324 354 386	0	E0	P602	–	–	–
1144	CROTONYLENE	3	–	I	–	0	E3	P001	–	–	–
1145	CYCLOHEXANE	3	–	II	–	1 L	E2	P001	–	IBC02	–
1146	CYCLOPENTANE	3	–	II	–	1 L	E2	P001	–	IBC02	–
1147	DECAHYDRONAPHTHALENE	3	–	III	–	5 L	E1	P001 LP01	–	IBC03	–
1148	DIACETONE ALCOHOL	3	–	II	–	1 L	E2	P001	–	IBC02	–
1148	DIACETONE ALCOHOL	3	–	III	223	5 L	E1	P001 LP01	–	IBC03	–
1149	DIBUTYL ETHERS	3	–	III	–	5 L	E1	P001	–	IBC03	–
1150	1,2-DICHLOROETHYLENE	3	–	II	–	1 L	E2	P001	–	IBC02	–
1152	DICHLOROPENTANES	3	–	III	–	5 L	E1	P001 LP01	–	IBC03	–
1153	ETHYLENE GLYCOL DIETHYL ETHER	3	–	II	–	1 L	E2	P001	–	IBC02	–
1153	ETHYLENE GLYCOL DIETHYL ETHER	3	–	III	–	5 L	E1	P001 LP01	–	IBC03	–
1154	DIETHYLAMINE	3	8	II	–	1 L	E2	P001	–	IBC02	–

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	Tank instructions	Provisions					
(12)	(13) 4.2.5 4.3	(14) 4.2.5	(15) 5.4.3.2 7.8	(16a) 7.1 7.3–7.7	(16b) 7.2–7.7	(17)	(18)
–	T11	TP1 TP8 TP27	F-E, S-E	Category E	–	Miscibility with water depends upon the composition.	1139
–	T4	TP1 TP8	F-E, S-E	Category B	–	See entry above.	1139
–	T2	TP1	F-E, S-E	Category A	–	See entry above.	1139
–	T20	TP2 TP13 TP35	F-E, S-D	Category D SW1 SW2	–	Colourless, mobile liquid with a pungent odour. Turns to pale yellow in contact with light and air. Miscible with water. Flashpoint: 13°C c.c. Highly toxic if swallowed, by skin contact or by inhalation. May cause lung damage.	1143
–	T11	TP2	F-E, S-D	Category E	–	Colourless liquid. Flashpoint: –53°C c.c. Explosive limits: 1.4% to ... Boiling point: 27°C. Immiscible with water.	1144
–	T4	TP1	F-E, S-D	Category E	–	Colourless, mobile liquid with a sweet aromatic odour. Flashpoint: –18°C c.c. Explosive limits: 1.2% to 8.4%. Immiscible with water. Slightly irritating to skin, eyes and mucous membranes. Narcotic in high concentrations.	1145
–	T7	TP1	F-E, S-D	Category E	–	Colourless liquid with a pungent odour. Flashpoint: below –18°C c.c. Explosive limits: 1.4% to 8%. Boiling point: 49°C. Immiscible with water. Irritating to skin, eyes and mucous membranes. Narcotic in high concentrations.	1146
–	T2	TP1	F-E, S-D	Category A	–	Colourless liquids with an aromatic odour. Flashpoint: 52°C to 57°C c.c. Explosive limits: 0.7% to 4.9%. Immiscible with water. Harmful by inhalation.	1147
–	T4	TP1	F-E, S-D	Category B	–	Colourless liquid. Explosive limits: 1.4% to 8%. Miscible with water.	1148
–	T2	TP1	F-E, S-D	Category A	–	See entry above.	1148
–	T2	TP1	F-E, S-D	Category A	–	Colourless liquids with a mild ether-like odour. Explosive limits: 0.9% to 8.5%. Immiscible with water. <i>normal</i> -DIBUTYL ETHER: flashpoint 25°C c.c.	1149
–	T7	TP2	F-E, S-D	Category B	–	Colourless liquid with a chloroform-like odour. Flashpoint: 6°C c.c. Explosive limits: 5.6% to 16%. Immiscible with water. Boiling range: 48°C to 61°C.	1150
–	T2	TP1	F-E, S-D	Category A	–	Light yellow liquids. 1,5-DICHLOROPENTANE: flashpoint 26°C c.c. Immiscible with water.	1152
–	T4	TP1	F-E, S-D	Category A	–	Colourless liquid with an ether-like odour. Flashpoint: 35°C c.c. Immiscible with water.	1153
–	T2	TP1	F-E, S-D	Category A	–	See entry above.	1153
–	T7	TP1	F-E, S-C	Category E SW2	–	Colourless liquid with an ammonia-like odour. Flashpoint: –39°C c.c. Explosive limits: 1.7% to 10.1%. Boiling point: 55°C. Miscible with water. Harmful if swallowed. Causes burns to skin, eyes and mucous membranes. Higher concentrations cause dangerous lung irritation.	1154

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						Limited quantities	Excepted quantities	Instructions	Provisions	Instructions	Provisions
(1)	(2) 3.1.2	(3) 2.0	(4) 2.0	(5) 2.0.1.3	(6) 3.3	(7a) 3.4	(7b) 3.5	(8) 4.1.4	(9) 4.1.4	(10) 4.1.4	(11) 4.1.4
1155	DIETHYL ETHER (ETHYL ETHER)	3	–	I	–	0	E3	P001	–	–	–
1156	DIETHYL KETONE	3	–	II	–	1 L	E2	P001	–	IBC02	–
1157	DIISOBUTYL KETONE	3	–	III	–	5 L	E1	P001 LP01	–	IBC03	–
1158	DIISOPROPYLAMINE	3	8	II	–	1 L	E2	P001	–	IBC02	–
1159	DIISOPROPYL ETHER	3	–	II	–	1 L	E2	P001	–	IBC02	–
1160	DIMETHYLAMINE, AQUEOUS SOLUTION	3	8	II	–	1 L	E2	P001	–	IBC02	–
1161	DIMETHYL CARBONATE	3	–	II	–	1 L	E2	P001	–	IBC02	–
1162	DIMETHYLDICHLOROSILANE	3	8	II	–	0	E0	P010	–	–	–
1163	DIMETHYLHYDRAZINE, UNSYMMETRICAL	6.1	3/8 P	I	354	0	E0	P602	–	–	–
1164	DIMETHYL SULPHIDE	3	–	II	–	1 L	E2	P001	–	IBC02	B8
1165	DIOXANE	3	–	II	–	1 L	E2	P001	–	IBC02	–
1166	DIOXOLANE	3	–	II	–	1 L	E2	P001	–	IBC02	–
1167	DIVINYL ETHER, STABILIZED	3	–	I	386	0	E3	P001	–	–	–
1169	EXTRACTS, AROMATIC, LIQUID	3	–	II	–	5 L	E2	P001	–	IBC02	–
1169	EXTRACTS, AROMATIC, LIQUID	3	–	III	223 955	5 L	E1	P001 LP01	–	IBC03	–
1170	ETHANOL (ETHYL ALCOHOL) or ETHANOL SOLUTION (ETHYL ALCOHOL SOLUTION)	3	–	II	144	1 L	E2	P001	–	IBC02	–

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	Tank instructions	Provisions					
(12)	(13) 4.2.5 4.3	(14) 4.2.5	(15) 5.4.3.2 7.8	(16a) 7.1 7.3–7.7	(16b) 7.2–7.7	(17)	(18)
–	T11	TP2	F-E, S-D	Category E SW2	–	Colourless, volatile and mobile liquid with a pleasant aromatic odour. Flashpoint: –40°C c.c. Explosive limits: 1.7% to 48%. Boiling point: 34°C. Immiscible with water. In the presence of oxygen or on long standing or exposure to sunlight, unstable peroxides sometimes form; these may explode spontaneously or when heated. Strongly narcotic. Readily ignited by static electricity.	1155
–	T4	TP1	F-E, S-D	Category B	–	Colourless, mobile liquid. Flashpoint: 13°C c.c. Explosive limits: 1.6% to ... Immiscible with water.	1156
–	T2	TP1	F-E, S-D	Category A	–	Colourless liquid. Flashpoint: 49°C c.c. Explosive limits: 0.8% to 7.1%. Immiscible with water.	1157
–	T7	TP1	F-E, S-C	Category B	–	Colourless, volatile liquid with a fishy odour. Flashpoint: –7°C c.c. Explosive limits: 1.1% to 7.1%. Partially miscible with water. Harmful by inhalation. Causes burns to skin, eyes and mucous membranes.	1158
–	T4	TP1	F-E, S-D	Category E SW2	–	Colourless liquid with an ether-like odour. Flashpoint: –29°C c.c. Explosive limits: 1.1% to 21%. Immiscible with water. In the presence of oxygen or on long standing or exposure to sunlight, unstable peroxides sometimes form; these may explode spontaneously or when heated. Strongly narcotic. Readily ignited by static electricity.	1159
–	T7	TP1	F-E, S-C	Category B	SG35	Aqueous solution of a flammable gas with an ammonia-like odour. Flashpoint for 60% solution in water: –32°C c.c. Explosive limits: 2.8% to 14.4%. Boiling point for 60% solution in water: 36°C. Flashpoint for 25% solution in water: 0°C c.c. Miscible with water. Harmful by inhalation. Causes burns to skin, eyes and mucous membranes. Reacts violently with acids.	1160
–	T4	TP1	F-E, S-D	Category B	–	Colourless liquid. Immiscible with water. Flashpoint: 18°C c.c.	1161
–	T10	TP2 TP7 TP13	F-E, S-C	Category B SW2	–	Colourless liquid with a pungent odour. Flashpoint: –9°C c.c. Explosive limits: 1.4% to 9.5%. Immiscible with water. Reacts with water to form a complex mixture of dimethylsiloxanes and evolves hydrogen chloride, a toxic and corrosive gas. Harmful by inhalation. Causes burns to skin, eyes and mucous membranes.	1162
–	T20	TP2 TP13 TP35	F-E, S-C	Category D SW2	SG5 SG8 SG13 SG35	Colourless liquid with an ammonia-like odour. Flashpoint: –18°C c.c. Explosive limits: 2% to 95%. Miscible with water, generating heat. Reacts violently with acids. Highly toxic if swallowed, by skin contact or by inhalation. Causes burns to skin, eyes and mucous membranes. May react dangerously with oxidizing substances.	1163
–	T7	TP2	F-E, S-D	Category E SW2	–	Colourless liquid with a disagreeable odour. Flashpoint: –37°C c.c. Explosive limits: 2.2% to 19.7%. Boiling point: 37°C. Immiscible with water. When involved in a fire, evolves toxic gases. Narcotic in high concentrations.	1164
–	T4	TP1	F-E, S-D	Category B	–	Colourless liquid with an ether-like odour. Flashpoint: 12°C c.c. Explosive limits: 2% to 22%. Miscible with water. Harmful by inhalation.	1165
–	T4	TP1	F-E, S-D	Category B SW2	–	Colourless liquid. Flashpoint: 2°C c.c. Miscible with water. Harmful by inhalation.	1166
–	T11	TP2	F-E, S-D	Category E SW1 SW2	–	Colourless, clear liquid with a characteristic odour. Flashpoint: –30°C c.c. Explosive limits: 1.7% to 27%. Boiling point: 30°C. Immiscible with water. In the presence of oxygen or on long standing or exposure to sunlight, unstable peroxides sometimes form; these may explode spontaneously or when heated. Strongly narcotic. Readily ignited by static electricity.	1167
–	T4	TP1 TP8	F-E, S-D	Category B	–	Usually consist of alcoholic solutions. Miscibility with water depends upon the composition.	1169
–	T2	TP1	F-E, S-D	Category A	–	See entry above.	1169
–	T4	TP1	F-E, S-D	Category A	–	Colourless, volatile liquids. Pure ETHANOL: flashpoint 13°C c.c. Explosive limits: 3.3% to 19%. Miscible with water.	1170

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						Limited quantities	Excepted quantities	Instructions	Provisions	Instructions	Provisions
(1)	(2) 3.1.2	(3) 2.0	(4) 2.0	(5) 2.0.1.3	(6) 3.3	(7a) 3.4	(7b) 3.5	(8) 4.1.4	(9) 4.1.4	(10) 4.1.4	(11) 4.1.4
1170	ETHANOL (ETHYL ALCOHOL) or ETHANOL SOLUTION (ETHYL ALCOHOL SOLUTION)	3	–	III	144 223	5 L	E1	P001 LP01	–	IBC03	–
1171	ETHYLENE GLYCOL MONOETHYL ETHER	3	–	III	–	5 L	E1	P001 LP01	–	IBC03	–
1172	ETHYLENE GLYCOL MONOETHYL ETHER ACETATE	3	–	III	–	5 L	E1	P001 LP01	–	IBC03	–
1173	ETHYL ACETATE	3	–	II	–	1 L	E2	P001	–	IBC02	–
1175	ETHYLBENZENE	3	–	II	–	1 L	E2	P001	–	IBC02	–
1176	ETHYL BORATE	3	–	II	–	1 L	E2	P001	–	IBC02	–
1177	2-ETHYLBUTYL ACETATE	3	–	III	–	5 L	E1	P001 LP01	–	IBC03	–
1178	2-ETHYLBUTYRALDEHYDE	3	–	II	–	1 L	E2	P001	–	IBC02	–
1179	ETHYL BUTYL ETHER	3	–	II	–	1 L	E2	P001	–	IBC02	–
1180	ETHYL BUTYRATE	3	–	III	–	5 L	E1	P001 LP01	–	IBC03	–
1181	ETHYL CHLOROACETATE	6.1	3	II	–	100 mL	E4	P001	–	IBC02	–
1182	ETHYL CHLOROFORMATE	6.1	3/8	I	354	0	E0	P602	–	–	–
1183	ETHYLDICHLOROSILANE	4.3	3/8	I	–	0	E0	P401	PP31	–	–
1184	ETHYLENE DICHLORIDE	3	6.1	II	–	1 L	E2	P001	–	IBC02	–
1185	ETHYLENEIMINE, STABILIZED	6.1	3	I	354 386	0	E0	P601	–	–	–
1188	ETHYLENE GLYCOL MONOMETHYL ETHER	3	–	III	–	5 L	E1	P001 LP01	–	IBC03	–
1189	ETHYLENE GLYCOL MONOMETHYL ETHER ACETATE	3	–	III	–	5 L	E1	P001 LP01	–	IBC03	–
1190	ETHYL FORMATE	3	–	II	–	1 L	E2	P001	–	IBC02	–
1191	OCTYL ALDEHYDES	3	–	III	–	5 L	E1	P001 LP01	–	IBC03	–
1192	ETHYL LACTATE	3	–	III	–	5 L	E1	P001 LP01	–	IBC03	–

UN No.	Portable tanks and bulk containers		EmS	Stowage and handling	Segregation	Properties and observations	UN No.
	Tank instructions	Provisions					
(12)	(13) 4.2.5 4.3	(14) 4.2.5	(15) 5.4.3.2 7.8	(16a) 7.1 7.3–7.7	(16b) 7.2–7.7	(17)	(18)
–	T2	TP1	F-E, S-D	Category A	–	Colourless, volatile liquids. Pure ETHANOL: flashpoint 13°C c.c. Explosive limits: 3.3% to 19%. Miscible with water.	1170
–	T2	TP1	F-E, S-D	Category A	–	Colourless liquid. Flashpoint: 40°C c.c. Explosive limits: 1.7% to 15.6%. Miscible with water.	1171
–	T2	TP1	F-E, S-D	Category A	–	Colourless liquid. Flashpoint: 51°C c.c. Explosive limits: 1.7% to 10.1%. Partially miscible with water.	1172
–	T4	TP1	F-E, S-D	Category B	–	Colourless liquid with a fragrant odour. Flashpoint: –4°C c.c. Explosive limits: 2.18% to 11.5%. Immiscible with water.	1173
–	T4	TP1	F-E, S-D	Category B	–	Colourless liquid with an aromatic odour. Flashpoint: 22°C c.c. Explosive limits: 1% to 6.7%. Immiscible with water.	1175
–	T4	TP1	F-E, S-D	Category B	–	Colourless liquid. Flashpoint: 11°C c.c. Immiscible with water.	1176
–	T2	TP1	F-E, S-D	Category A	–	Colourless liquid. Flashpoint: 54°C o.c. Immiscible with water.	1177
–	T4	TP1	F-E, S-D	Category B	–	Colourless liquid. Flashpoint: 11°C c.c. Explosive limits: 1.2% to 7.7%. Immiscible with water.	1178
–	T4	TP1	F-E, S-D	Category B	–	Colourless liquid. Flashpoint: –1°C c.c. Immiscible with water.	1179
–	T2	TP1	F-E, S-D	Category A	–	Colourless, volatile liquid with a pineapple-like odour. Flashpoint: 26°C c.c. Immiscible with water.	1180
–	T7	TP2	F-E, S-D	Category A	–	Colourless, flammable liquid with a pungent and fruity odour. Flashpoint: 54°C c.c. Immiscible with water. When heated, evolves toxic and corrosive fumes. Toxic if swallowed, by skin contact or by inhalation.	1181
–	T20	TP2 TP13 TP37	F-E, S-C	Category D SW2	SG5 SG8	Colourless liquid. Flashpoint: 16°C c.c. Reacts and decomposes with water or heat, evolving hydrogen chloride, an irritating and corrosive gas apparent as white fumes. In the presence of moisture, highly corrosive to most metals. Highly toxic if swallowed, by skin contact or by inhalation. Causes burns to skin, eyes and mucous membranes.	1182
–	T14	TP2 TP7 TP13	F-G, S-O	Category D SW2 H1	SG5 SG8 SG13 SG25 SG26	Colourless, very volatile liquid with a pungent odour. Flashpoint: –1°C c.c. Immiscible with water. Reacts violently with water or steam to produce heat which may lead to self-ignition; toxic and corrosive fumes will be evolved. May react vigorously in contact with oxidizing substances. Causes burns to skin, eyes and mucous membranes.	1183
–	T7	TP1	F-E, S-D	Category B SW2	–	Colourless liquid with a chloroform-like odour. Flashpoint: 13°C c.c. Explosive limits: 6.2% to 15.9%. Immiscible with water. Toxic by inhalation. Irritating to skin, eyes and mucous membranes.	1184
–	T22	TP2 TP13	F-E, S-D	Category D SW1 SW2	–	Colourless oily flammable liquid with a pungent ammonia-like odour. Flashpoint: –13°C c.c. Boiling point: 55°C. Explosive limits: 3.6% to 6.0%. Miscible with water. Highly toxic if swallowed, by skin contact or by inhalation.	1185
–	T2	TP1	F-E, S-D	Category A	–	Colourless liquid. Flashpoint: 38°C c.c. Explosive limits: 1.8% to 20%. Miscible with water.	1188
–	T2	TP1	F-E, S-D	Category A	–	Colourless liquid with a characteristic odour. Flashpoint: 44°C c.c. Explosive limits: 1.7% to 8.2%. Miscible with water.	1189
–	T4	TP1	F-E, S-D	Category E	–	Colourless liquid with a pleasant aromatic odour. Flashpoint: –20°C c.c. Explosive limits: 3.5% to 16.5%. Boiling point: 54°C. Immiscible with water.	1190
–	T2	TP1	F-E, S-D	Category A	–	Colourless liquids with a characteristic odour. Flashpoint: 44°C to 52°C c.c. Explosive limits: 0.9% to 7.2%. Immiscible with water.	1191
–	T2	TP1	F-E, S-D	Category A	–	Colourless liquid. Flashpoint: 46°C c.c. Explosive limits: 1.5% to 11.4%. Miscible with water.	1192

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						Limited quantities	Excepted quantities	Instructions	Provisions	Instructions	Provisions
(1)	(2) 3.1.2	(3) 2.0	(4) 2.0	(5) 2.0.1.3	(6) 3.3	(7a) 3.4	(7b) 3.5	(8) 4.1.4	(9) 4.1.4	(10) 4.1.4	(11) 4.1.4
1193	ETHYL METHYL KETONE (METHYL ETHYL KETONE)	3	–	II	–	1 L	E2	P001	–	IBC02	–
1194	ETHYL NITRITE SOLUTION	3	6.1	I	900	0	E0	P001	–	–	–
1195	ETHYL PROPIONATE	3	–	II	–	1 L	E2	P001	–	IBC02	–
1196	ETHYLTRICHLOROSILANE	3	8	II	–	0	E0	P010	–	–	–
1197	EXTRACTS, FLAVOURING, LIQUID	3	–	II	–	5 L	E2	P001	–	IBC02	–
1197	EXTRACTS, FLAVOURING, LIQUID	3	–	III	223 955	5 L	E1	P001 LP01	–	IBC03	–
1198	FORMALDEHYDE SOLUTION, FLAMMABLE	3	8	III	–	5 L	E0	P001	–	IBC03	–
1199	FURALDEHYDES	6.1	3	II	–	100 mL	E4	P001	–	IBC02	–
1201	FUSEL OIL	3	–	II	–	1 L	E2	P001	–	IBC02	–
1201	FUSEL OIL	3	–	III	223 955	5 L	E1	P001 LP01	–	IBC03	–
1202	GAS OIL or DIESEL FUEL or HEATING OIL, LIGHT	3	–	III	–	5 L	E1	P001 LP01	–	IBC03	–
1203	MOTOR SPIRIT or GASOLINE or PETROL	3	–	II	243	1 L	E2	P001	–	IBC02	–
1204	NITROGLYCERIN SOLUTION IN ALCOHOL with not more than 1% nitroglycerin	3	–	II	–	1 L	E0	P001	PP5	IBC02	–
1206	HEPTANES	3	– P	II	–	1 L	E2	P001	–	IBC02	–
1207	HEXALDEHYDE	3	–	III	–	5 L	E1	P001 LP01	–	IBC03	–
1208	HEXANES	3	– P	II	–	1 L	E2	P001	–	IBC02	–
1210	PRINTING INK flammable or PRINTING INK RELATED MATERIAL (including printing ink thinning or reducing compound), flammable	3	–	I	163 367	500 mL	E3	P001	–	–	–

UN No.	Portable tanks and bulk containers		EmS	Stowage and handling	Segregation	Properties and observations	UN No.
	Tank instructions	Provisions					
(12)	(13) 4.2.5 4.3	(14) 4.2.5	(15) 5.4.3.2 7.8	(16a) 7.1 7.3–7.7	(16b) 7.2–7.7	(17)	(18)
–	T4	TP1	F-E, S-D	Category B	–	Colourless liquid. Flashpoint: –1°C c.c. Explosive limits: 1.8% to 11.5%. Miscible with water.	1193
–	–	–	F-E, S-D	Category D SW2	–	Alcoholic solution of ethyl nitrite. Extremely volatile, with an aromatic, ethereal odour. Explosive limits of the pure product: 3% to 50%. Boiling point of pure product: 17°C. Miscible or partially miscible with water. Decomposes under exposure to air, light, water or heat to evolve toxic nitrous fumes. Toxic if swallowed, by skin contact or by inhalation. Inhalation of ethyl nitrite vapours, even in small quantities, rapidly affects the heart and can be dangerous. Transport of ETHYL NITRITE pure is prohibited.	1194
–	T4	TP1	F-E, S-D	Category B	–	Colourless liquid with a pineapple-like odour. Flashpoint: 12°C c.c. Explosive limits: 1.8% to 11%. Immiscible with water.	1195
–	T10	TP2 TP7 TP13	F-E, S-C	Category B SW2	–	Colourless liquid with a pungent odour. Flashpoint: 14°C c.c. Readily hydrolysed by moisture, evolving hydrogen chloride, an irritating and corrosive gas apparent as white fumes. Causes burns to skin and eyes. Irritating to mucous membranes.	1196
–	T4	TP1 TP8	F-E, S-D	Category B	–	Usually consist of alcoholic solutions. Miscibility with water depends upon the composition.	1197
–	T2	TP1	F-E, S-D	Category A	–	See entry above.	1197
–	T4	TP1	F-E, S-C	Category A SW2	–	Colourless liquids with a pungent odour. Flashpoint: 32–60°C c.c. Miscible with water. Irritating to skin, eyes and mucous membranes.	1198
–	T7	TP2	F-E, S-D	Category A	–	Colourless or reddish-brown, mobile liquids with a pungent odour. Miscible with water. Explosive limits for 2-FURALDEHYDE: 2.1% to 19.3%. Flashpoints: 2-FURALDEHYDE 60°C c.c., 3-FURALDEHYDE 48°C c.c. Toxic if swallowed, by skin contact or by inhalation.	1199
–	T4	TP1	F-E, S-D	Category B	–	Colourless, oily liquid with a disagreeable odour. A mixture consisting of amyl alcohols. Immiscible with water.	1201
–	T2	TP1	F-E, S-D	Category A	–	See entry above.	1201
–	T2	TP1	F-E, S-E	Category A	–	Immiscible with water.	1202
–	T4	TP1	F-E, S-E	Category E	–	Immiscible with water.	1203
–	–	–	F-E, S-D	Category B	–	Immiscible with water. Ignites readily. When involved in a fire, evolves toxic nitrous fumes. Not explosive in this state but damage to, or leakage from, a package may allow solvent to evaporate and thus leave the nitroglycerin in an explosive state.	1204
–	T4	TP2	F-E, S-D	Category B	–	Colourless, volatile liquids. Explosive limits: 1.1% to 6.7%. <i>n</i> -HEPTANE: flashpoint –4°C c.c. Immiscible with water. Irritating to skin, eyes and mucous membranes.	1206
–	T2	TP1	F-E, S-D	Category A	–	Colourless liquid with a pungent odour. Flashpoint: 32°C c.c. Immiscible with water.	1207
–	T4	TP2	F-E, S-D	Category E	–	Colourless, volatile liquids with a faint odour. Explosive limits: 1.1% to 7.5%. <i>n</i> -HEXANE: flashpoint –22°C c.c., boiling point 69°C. NEOHEXANE: flashpoint –48°C c.c., boiling point 50°C. Immiscible with water. Slightly irritating to skin, eyes and mucous membranes.	1208
–	T11	TP1 TP8	F-E, S-D	Category E	–	Fluid or viscous liquid containing colouring matter in solution or suspension. Miscibility with water depends upon the solvent.	1210

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						Limited quantities	Excepted quantities	Instructions	Provisions	Instructions	Provisions
(1)	(2) 3.1.2	(3) 2.0	(4) 2.0	(5) 2.0.1.3	(6) 3.3	(7a) 3.4	(7b) 3.5	(8) 4.1.4	(9) 4.1.4	(10) 4.1.4	(11) 4.1.4
1210	PRINTING INK flammable or PRINTING INK RELATED MATERIAL (including printing ink thinning or reducing compound), flammable	3	–	II	163 367	5 L	E2	P001	PP1	IBC02	–
1210	PRINTING INK flammable or PRINTING INK RELATED MATERIAL (including printing ink thinning or reducing compound), flammable	3	–	III	163 223 367 955	5 L	E1	P001 LP01	PP1	IBC03	–
1212	ISOBUTANOL (ISOBUTYL ALCOHOL)	3	–	III	–	5 L	E1	P001 LP01	–	IBC03	–
1213	ISOBUTYL ACETATE	3	–	II	–	1 L	E2	P001	–	IBC02	–
1214	ISOBUTYLAMINE	3	8	II	–	1 L	E2	P001	–	IBC02	–
1216	ISOOCTENES	3	–	II	–	1 L	E2	P001	–	IBC02	–
1218	ISOPRENE, STABILIZED	3	– P	I	386	0	E3	P001	–	–	–
1219	ISOPROPANOL (ISOPROPYL ALCOHOL)	3	–	II	–	1 L	E2	P001	–	IBC02	–
1220	ISOPROPYL ACETATE	3	–	II	–	1 L	E2	P001	–	IBC02	–
1221	ISOPROPYLAMINE	3	8	I	–	0	E0	P001	–	–	–
1222	ISOPROPYL NITRATE	3	–	II	26	1 L	E2	P001	–	–	–
1223	KEROSENE	3	–	III	–	5 L	E1	P001 LP01	–	IBC03	–
1224	KETONES, LIQUID, N.O.S.	3	–	II	274	1 L	E2	P001	–	IBC02	–
1224	KETONES, LIQUID, N.O.S.	3	–	III	223 274	5 L	E1	P001 LP01	–	IBC03	–
1228	MERCAPTANS, LIQUID, FLAMMABLE, TOXIC, N.O.S. or MERCAPTAN MIXTURE, LIQUID, FLAMMABLE, TOXIC, N.O.S.	3	6.1	II	274	1 L	E0	P001	–	IBC02	–
1228	MERCAPTANS, LIQUID, FLAMMABLE, TOXIC, N.O.S. or MERCAPTAN MIXTURE, LIQUID, FLAMMABLE, TOXIC, N.O.S.	3	6.1	III	223 274	5 L	E1	P001	–	IBC03	–
1229	MESITYL OXIDE	3	–	III	–	5 L	E1	P001 LP01	–	IBC03	–
1230	METHANOL	3	6.1	II	279	1 L	E2	P001	–	IBC02	–
1231	METHYL ACETATE	3	–	II	–	1 L	E2	P001	–	IBC02	–

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	Tank instructions	Provisions					
(12)	(13) 4.2.5 4.3	(14) 4.2.5	(15) 5.4.3.2 7.8	(16a) 7.1 7.3–7.7	(16b) 7.2–7.7	(17)	(18)
–	T4	TP1 TP8	F-E, S-D	Category B	–	Fluid or viscous liquid containing colouring matter in solution or suspension. Miscibility with water depends upon the solvent.	1210
–	T2	TP1	F-E, S-D	Category A	–	See entry above.	1210
–	T2	TP1	F-E, S-D	Category A	–	Colourless liquid with a sweet odour. Flashpoint: 28°C c.c. Explosive limits: 1.2% to 10.9%. Partially miscible with water.	1212
–	T4	TP1	F-E, S-D	Category B	–	Colourless liquid with a pineapple-like odour. Flashpoint: 18°C c.c. Explosive limits: 1.3% to 10.5%. Immiscible with water.	1213
–	T7	TP1	F-E, S-C	Category B SW2	–	Colourless liquid. Flashpoint: –9°C c.c. Explosive limits: 3.4% to 9%. Miscible with water. Harmful by inhalation. Causes burns to skin and eyes. Irritating to mucous membranes.	1214
–	T4	TP1	F-E, S-D	Category B	–	Colourless liquids. Immiscible with water.	1216
–	T11	TP2	F-E, S-D	Category D SW1	–	Colourless, volatile liquid. Flashpoint: –48°C c.c. Explosive limits: 1.5% to 9.7%. Boiling point: 34°C. Immiscible with water.	1218
–	T4	TP1	F-E, S-D	Category B	–	Colourless, mobile liquid. Flashpoint: 12°C c.c. Explosive limits: 2% to 12%. Miscible with water.	1219
–	T4	TP1	F-E, S-D	Category B	–	Colourless liquid with an aromatic odour. Flashpoint: 11°C c.c. Explosive limits: 1.8% to 7.8%. Immiscible with water.	1220
–	T11	TP2	F-E, S-C	Category E SW2	–	Colourless, volatile liquid with an ammonia-like odour. Flashpoint: –37°C c.c. Explosive limits: 2.3% to 10.4%. Boiling point: 32°C. Miscible with water. Harmful if swallowed. Causes burns to skin, eyes and mucous membranes.	1221
–	–	–	F-E, S-D	Category D	–	Colourless liquid. Flashpoint: 12°C c.c. Explosive limits: up to 100%. Immiscible with water. May explode on heating. Harmful by inhalation.	1222
–	T2	TP2	F-E, S-E	Category A	–	Immiscible with water.	1223
–	T7	TP1 TP8 TP28	F-E, S-D	Category B	–	–	1224
–	T4	TP1 TP29	F-E, S-D	Category A	–	–	1224
–	T11	TP2 TP27	F-E, S-D	Category B SW2	SG50 SG57	Colourless to yellow liquids with a garlic odour. Immiscible with water. Toxic if swallowed, by skin contact or by inhalation.	1228
–	T7	TP1 TP28	F-E, S-D	Category B SW2	SG50 SG57	See entry above.	1228
–	T2	TP1	F-E, S-D	Category A	–	Colourless, oily liquid with a sweet odour. Flashpoint: 32°C c.c. Miscible with water.	1229
–	T7	TP2	F-E, S-D	Category B SW2	–	Colourless, volatile liquid. Flashpoint: 12°C c.c. Explosive limits: 6% to 36.5%. Miscible with water. Toxic if swallowed; may cause blindness. Avoid skin contact.	1230
–	T4	TP1	F-E, S-D	Category B	–	Colourless, volatile liquid with a fragrant odour. Flashpoint: –10°C c.c. Explosive limits: 3% to 16%. Miscible with water.	1231

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						Limited quantities	Excepted quantities	Instructions	Provisions	Instructions	Provisions
(1)	(2) 3.1.2	(3) 2.0	(4) 2.0	(5) 2.0.1.3	(6) 3.3	(7a) 3.4	(7b) 3.5	(8) 4.1.4	(9) 4.1.4	(10) 4.1.4	(11) 4.1.4
1233	METHYLAMYL ACETATE	3	–	III	–	5 L	E1	P001 LP01	–	IBC03	–
1234	METHYLAL	3	–	II	–	1 L	E2	P001	–	IBC02	B8
1235	METHYLAMINE, AQUEOUS SOLUTION	3	8	II	–	1 L	E2	P001	–	IBC02	–
1237	METHYL BUTYRATE	3	–	II	–	1 L	E2	P001	–	IBC02	–
1238	METHYL CHLOROFORMATE	6.1	3/8	I	354	0	E0	P602	–	–	–
1239	METHYL CHLOROMETHYL ETHER	6.1	3	I	354	0	E0	P602	–	–	–
1242	METHYLDICHLOROSILANE	4.3	3/8	I	–	0	E0	P401	PP31	–	–
1243	METHYL FORMATE	3	–	I	–	0	E3	P001	–	–	–
1244	METHYLHYDRAZINE	6.1	3/8	I	354	0	E0	P602	–	–	–
1245	METHYL ISOBUTYL KETONE	3	–	II	–	1 L	E2	P001	–	IBC02	–
1246	METHYL ISOPROPENYL KETONE, STABILIZED	3	–	II	386	1 L	E2	P001	–	IBC02	–
1247	METHYL METHACRYLATE MONOMER, STABILIZED	3	–	II	386	1 L	E2	P001	–	IBC02	–
1248	METHYL PROPIONATE	3	–	II	–	1 L	E2	P001	–	IBC02	–
1249	METHYL PROPYL KETONE	3	–	II	–	1 L	E2	P001	–	IBC02	–
1250	METHYLTRICHLOROSILANE	3	8	II	–	0	E0	P010	–	–	–
1251	METHYL VINYL KETONE, STABILIZED	6.1	3/8	I	354 386	0	E0	P601	–	–	–

UN No.	Portable tanks and bulk containers		EmS	Stowage and handling	Segregation	Properties and observations	UN No.
	Tank instructions	Provisions					
(12)	(13) 4.2.5 4.3	(14) 4.2.5	(15) 5.4.3.2 7.8	(16a) 7.1 7.3–7.7	(16b) 7.2–7.7	(17)	(18)
–	T2	TP1	F-E, S-D	Category A	–	Colourless liquid. Flashpoint: 43°C o.c. Immiscible with water.	1233
–	T7	TP2	F-E, S-D	Category E	–	Colourless, volatile liquid with a chloroform-like odour. Flashpoint: –28°C c.c. Explosive limits: 3.6% to 12.6%. Boiling point: 42°C. Miscible with water. Irritating to skin, eyes and mucous membranes.	1234
–	T7	TP1	F-E, S-C	Category E	SG35 SG54	Aqueous solution of a flammable gas having an ammonia-like odour. Explosive limits: 5% to 20.7% (pure product). Boiling point: –7°C (pure product). Commercial product is a 40% solution with: boiling point 48°C, flashpoint –13°C c.c. Miscible with water. May react explosively with mercury. Causes burns to skin, eyes and mucous membranes.	1235
–	T4	TP1	F-E, S-D	Category B	–	Colourless liquid. Flashpoint: 14°C c.c. Immiscible with water.	1237
–	T22	TP2 TP13 TP35	F-E, S-C	Category D SW2	SG5 SG8	Colourless liquid. Flashpoint: 5°C c.c. Immiscible with water. Highly toxic if swallowed, by skin contact or by inhalation. Causes burns to skin, eyes and mucous membranes.	1238
–	T22	TP2 TP13 TP35	F-E, S-D	Category D SW2	–	Colourless liquid. Flashpoint: below –18°C c.c. Immiscible with water. Highly toxic if swallowed, by skin contact or by inhalation.	1239
–	T14	TP2 TP7 TP13	F-G, S-O	Category D SW2 H1	SG5 SG8 SG13 SG25 SG26	Colourless, very volatile liquid with a pungent odour. Flashpoint: –26°C c.c. Explosive limits: 4.5% to 70%. Boiling point: 41°C. Immiscible with water. Reacts violently with water or steam to produce heat which may lead to self-ignition; toxic and corrosive fumes will be evolved. May react vigorously in contact with oxidizing substances. Causes burns to skin, eyes and mucous membranes.	1242
–	T11	TP2	F-E, S-D	Category E	–	Colourless liquid with an agreeable odour. Flashpoint: –32°C c.c. Explosive limits: 5% to 22.7%. Boiling point: 32°C. Miscible with water.	1243
–	T22	TP2 TP13 TP35	F-E, S-C	Category D SW2	SG5 SG8 SG13 SG35	Colourless liquid with an ammonia-like odour. Flashpoint: 20°C c.c. Explosive limits: 2.5% to 98%. Miscible with water. Reacts violently with acids. May react dangerously with oxidizing substances. Highly toxic if swallowed, by skin contact or by inhalation. Causes burns to skin, eyes and mucous membranes.	1244
–	T4	TP1	F-E, S-D	Category B	–	Colourless liquid with a pleasant odour. Flashpoint: 14°C c.c. Explosive limits: 1.4% to 7.5%. Immiscible with water.	1245
–	T4	TP1	F-E, S-D	Category C SW1	–	Colourless liquid with a pleasant odour. Explosive limits: 1.8% to 9%. Immiscible with water.	1246
–	T4	TP1	F-E, S-D	Category C SW1 SW2	–	Colourless, volatile liquid. Flashpoint: 8°C c.c. Explosive limits: 1.5% to 11.6%. Immiscible with water. Irritating to skin, eyes and mucous membranes.	1247
–	T4	TP1	F-E, S-D	Category B	–	Colourless liquid. Flashpoint: –2°C c.c. Explosive limits: 2.4% to 13%. Immiscible with water.	1248
–	T4	TP1	F-E, S-D	Category B	–	Colourless liquid. Flashpoint: 7°C c.c. Explosive limits: 1.5% to 8.2%. Immiscible with water.	1249
–	T10	TP2 TP7 TP13	F-E, S-C	Category B SW2	–	Colourless liquid with a pungent odour. Flashpoint: 8°C o.c. Explosive limits: 5.1% to 20%. Immiscible with water. Readily hydrolysed by moisture, evolving hydrogen chloride, an irritating and corrosive gas apparent as white fumes. In the presence of moisture, corrosive to most metals. Causes burns to skin and eyes. Irritating to mucous membranes.	1250
–	T22	TP2 TP13 TP37	F-E, S-C	Category D SW1 SW2	SG5 SG8	Colourless liquid with a pungent odour. Miscible with water. Explosive limits: 2.1% to 15.6%. Flashpoint: –7°C c.c. Highly toxic if swallowed, by skin contact or by inhalation. Causes burns to skin, eyes and mucous membranes.	1251

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						Limited quantities	Excepted quantities	Instructions	Provisions	Instructions	Provisions
(1)	(2) 3.1.2	(3) 2.0	(4) 2.0	(5) 2.0.1.3	(6) 3.3	(7a) 3.4	(7b) 3.5	(8) 4.1.4	(9) 4.1.4	(10) 4.1.4	(11) 4.1.4
1259	NICKEL CARBONYL	6.1	3 P	I	–	0	E0	P601	–	–	–
1261	NITROMETHANE	3	–	II	26	1 L	E0	P001	–	–	–
1262	OCTANES	3	– P	II	–	1 L	E2	P001	–	IBC02	–
1263	PAINT (including paint, lacquer, enamel, stain, shellac, varnish, polish, liquid filler and liquid lacquer base) or PAINT RELATED MATERIAL (including paint thinning or reducing compound)	3	–	I	163 367	500 mL	E3	P001	–	–	–
1263	PAINT (including paint, lacquer, enamel, stain, shellac, varnish, polish, liquid filler and liquid lacquer base) or PAINT RELATED MATERIAL (including paint thinning or reducing compound)	3	–	II	163 367	5 L	E2	P001	PP1	IBC02	–
1263	PAINT (including paint, lacquer, enamel, stain, shellac, varnish, polish, liquid filler and liquid lacquer base) or PAINT RELATED MATERIAL (including paint thinning or reducing compound)	3	–	III	163 223 367 955	5 L	E1	P001 LP01	PP1	IBC03	–
1264	PARALDEHYDE	3	–	III	–	5 L	E1	P001 LP01	–	IBC03	–
1265	PENTANES, liquid	3	–	I	–	0	E3	P001	–	–	–
1265	PENTANES, liquid	3	–	II	–	1 L	E2	P001	–	IBC02	–
1266	PERFUMERY PRODUCTS with flammable solvents	3	–	II	163	5 L	E2	P001	–	IBC02	–
1266	PERFUMERY PRODUCTS with flammable solvents	3	–	III	163 223 904 955	5 L	E1	P001 LP01	–	IBC03	–
1267	PETROLEUM CRUDE OIL	3	–	I	357	500 mL	E3	P001	–	–	–
1267	PETROLEUM CRUDE OIL	3	–	II	357	1 L	E2	P001	–	IBC02	–
1267	PETROLEUM CRUDE OIL	3	–	III	223 357	5 L	E1	P001 LP01	–	IBC03	–
1268	PETROLEUM DISTILLATES, N.O.S. or PETROLEUM PRODUCTS, N.O.S.	3	–	I	–	500 mL	E3	P001	–	–	–

UN No.	Portable tanks and bulk containers		EmS	Stowage and handling	Segregation	Properties and observations	UN No.
	Tank instructions	Provisions					
(12)	(13) 4.2.5 4.3	(14) 4.2.5	(15) 5.4.3.2 7.8	(16a) 7.1 7.3–7.7	(16b) 7.2–7.7	(17)	(18)
–	–	–	F-E, S-D	Category D SW2	SG63	Colourless or yellow, volatile, flammable liquid. Flashpoint: below –20°C c.c. Oxidizes in air and explodes at a temperature of 60°C. Lower explosive limit: 2.0%. Immiscible with water. Highly toxic if swallowed, by skin contact or by inhalation.	1259
–	–	–	F-E, S-D	Category A	–	Colourless liquid. Flashpoint: 35°C c.c. Explosive limits: 7.1% to 63%. Miscible with water. Fire and explosion hazard if package is ruptured.	1261
–	T4	TP2	F-E, S-E	Category B	–	Colourless liquids. Explosive limits: 1% to 6.5%. ISOCTANE: flashpoint –12°C c.c. <i>n</i> -OCTANE: flashpoint 13°C c.c. Immiscible with water.	1262
–	T11	TP1 TP8 TP27	F-E, <u>S-E</u>	Category E	–	Miscibility with water depends upon the composition.	1263
–	T4	TP1 TP8 TP28	F-E, <u>S-E</u>	Category B	–	See entry above.	1263
–	T2	TP1 TP29	F-E, <u>S-E</u>	Category A	–	See entry above.	1263
–	T2	TP1	F-E, S-D	Category A	–	Colourless liquid. Flashpoint: 27°C c.c. Explosive limits: 1.3% to . . . Miscible with water.	1264
–	T11	TP2	F-E, S-D	Category E	–	Colourless liquids with a paraffin-like odour. Explosive limits: 1.4% to 8%. ISOPENTANE (2-METHYLBUTANE): boiling point 28°C. Immiscible with water. Slightly irritating to skin, eyes and mucous membranes. Narcotic in high concentrations.	1265
–	T4	TP1	F-E, S-D	Category E	–	See entry above. <i>normal</i> -PENTANE: boiling point 36°C.	1265
–	T4	TP1 TP8	F-E, S-D	Category B	–	Miscibility with water depends upon the composition.	1266
–	T2	TP1	F-E, S-D	Category A	–	See entry above.	1266
–	T11	TP1 TP8	F-E, S-E	Category E	–	Immiscible with water.	1267
–	T4	TP1 TP8	F-E, S-E	Category B	–	See entry above.	1267
–	T2	TP1	F-E, S-E	Category A	–	See entry above.	1267
–	T11	TP1 TP8	F-E, S-E	Category E	–	Immiscible with water.	1268

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						Limited quantities	Excepted quantities	Instructions	Provisions	Instructions	Provisions
(1)	(2) 3.1.2	(3) 2.0	(4) 2.0	(5) 2.0.1.3	(6) 3.3	(7a) 3.4	(7b) 3.5	(8) 4.1.4	(9) 4.1.4	(10) 4.1.4	(11) 4.1.4
1268	PETROLEUM DISTILLATES, N.O.S. or PETROLEUM PRODUCTS, N.O.S.	3	–	II	–	1 L	E2	P001	–	IBC02	–
1268	PETROLEUM DISTILLATES, N.O.S. or PETROLEUM PRODUCTS, N.O.S.	3	–	III	223 955	5 L	E1	P001 LP01	–	IBC03	–
1272	PINE OIL	3	– P	III	–	5 L	E1	P001 LP01	–	IBC03	–
1274	n-PROPANOL (PROPYL ALCOHOL, NORMAL)	3	–	II	–	1 L	E2	P001	–	IBC02	–
1274	n-PROPANOL (PROPYL ALCOHOL, NORMAL)	3	–	III	223	5 L	E1	P001 LP01	–	IBC03	–
1275	PROPIONALDEHYDE	3	–	II	–	1 L	E2	P001	–	IBC02	–
1276	n-PROPYL ACETATE	3	–	II	–	1 L	E2	P001	–	IBC02	–
1277	PROPYLAMINE	3	8	II	–	1 L	E2	P001	–	IBC02	–
1278	1-CHLOROPROPANE	3	–	II	–	1 L	E0	P001	–	IBC02	B8
1279	1,2-DICHLOROPROPANE	3	–	II	–	1 L	E2	P001	–	IBC02	–
1280	PROPYLENE OXIDE	3	–	I	–	0	E3	P001	–	–	–
1281	PROPYL FORMATES	3	–	II	–	1 L	E2	P001	–	IBC02	–
1282	PYRIDINE	3	–	II	–	1 L	E2	P001	–	IBC02	–
1286	ROSIN OIL	3	–	II	–	1 L	E2	P001	–	IBC02	–
1286	ROSIN OIL	3	–	III	223	5 L	E1	P001 LP01	–	IBC03	–
1287	RUBBER SOLUTION	3	–	II	–	5 L	E2	P001	–	IBC02	–
1287	RUBBER SOLUTION	3	–	III	223 955	5 L	E1	P001 LP01	–	IBC03	–
1288	SHALE OIL	3	–	II	–	1 L	E2	P001	–	IBC02	–
1288	SHALE OIL	3	–	III	223	5 L	E1	P001 LP01	–	IBC03	–
1289	SODIUM METHYLATE SOLUTION in alcohol	3	8	II	–	1 L	E2	P001	–	IBC02	–
1289	SODIUM METHYLATE SOLUTION in alcohol	3	8	III	223	5 L	E1	P001	–	IBC03	–
1292	TETRAETHYL SILICATE	3	–	III	–	5 L	E1	P001 LP01	–	IBC03	–
1293	TINCTURES, MEDICINAL	3	–	II	–	1 L	E2	P001	–	IBC02	–

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	Tank instructions	Provisions					
(12)	(13) 4.2.5 4.3	(14) 4.2.5	(15) 5.4.3.2 7.8	(16a) 7.1 7.3–7.7	(16b) 7.2–7.7	(17)	(18)
–	T7	TP1 TP8 TP28	F-E, S-E	Category B	–	Immiscible with water.	1268
–	T4	TP1 TP29	F-E, S-E	Category A	–	See entry above.	1268
–	T2	TP2	F-E, S-E	Category A	–	Volatile oils with characteristic odours. Flashpoint: 57°C to 60°C c.c. Immiscible with water.	1272
–	T4	TP1	F-E, S-D	Category B	–	Colourless liquid. Explosive limits: 2% to 12%. Flashpoint: 15°C to 23°C c.c. Miscible with water.	1274
–	T2	TP1	F-E, S-D	Category A	–	See entry above. Flashpoint: 23°C to 26°C c.c.	1274
–	T7	TP1	F-E, S-D	Category E	–	Colourless liquid with a pungent odour. Flashpoint: below –18°C c.c. Explosive limits: 2.3% to 21%. Boiling point: 49°C. Miscible with water. Irritating to skin, eyes and mucous membranes.	1275
–	T4	TP1	F-E, S-D	Category B	–	Colourless, clear liquid with a pleasant odour. Flashpoint: 10°C c.c. Explosive limits: 1.8% to 8%. Immiscible with water.	1276
–	T7	TP1	F-E, S-C	Category E SW2	–	Colourless liquid. Flashpoint: below –18°C c.c. Explosive limits: 2% to 10.4%. Boiling point: 48°C. Miscible with water. Harmful if swallowed. Causes burns to skin, eyes and mucous membranes.	1277
–	T7	TP2	F-E, S-D	Category E	–	Colourless liquid with a chloroform-like odour. Flashpoint: –18°C c.c. Explosive limits: 2.6% to 10.5%. Boiling point: 47°C. Immiscible with water.	1278
–	T4	TP1	F-E, S-D	Category B	–	Colourless liquid. Flashpoint: 15°C c.c. Immiscible with water. Harmful by inhalation. Irritating to skin and eyes.	1279
–	T11	TP2 TP7	F-E, S-D	Category E SW2	–	Colourless, volatile liquid with an ether-like odour. Flashpoint: below –18°C c.c. Explosive limits: 2% to 22%. Boiling point: 34°C. Partially miscible with water.	1280
–	T4	TP1	F-E, S-D	Category B	–	Colourless liquids with a pleasant odour. Explosive limits: 2.4% to 7.8%. Miscibility with water depends upon the composition. Irritating to skin, eyes and mucous membranes.	1281
–	T4	TP2	F-E, S-D	Category B SW2	–	Colourless or slightly yellow liquid with a pungent odour. Flashpoint: 17°C c.c. Explosive limits: 1.8% to 12.4%. Miscible with water. Harmful by inhalation.	1282
–	T4	TP1	F-E, S-E	Category B	–	Colourless to brown viscous liquid. Immiscible with water.	1286
–	T2	TP1	F-E, S-E	Category A	–	See entry above.	1286
–	T4	TP1 TP8	F-E, S-D	Category B	–	Miscibility with water depends upon the composition.	1287
–	T2	TP1	F-E, S-D	Category A	–	See entry above.	1287
–	T4	TP1 TP8	F-E, S-E	Category B	–	Immiscible with water.	1288
–	T2	TP1	F-E, S-E	Category A	–	See entry above.	1288
–	T7	TP1 TP8	F-E, S-C	Category B	–	Reacts violently with water. Causes burns to skin, eyes and mucous membranes.	1289
–	T4	TP1	F-E, S-C	Category A	–	See entry above. Irritating to skin, eyes and mucous membranes.	1289
–	T2	TP1	F-E, S-D	Category A.	–	Colourless liquid. Flashpoint: 37°C c.c. Explosive limits: 1.3% to 23%. Immiscible with water.	1292
–	T4	TP1 TP8	F-E, S-D	Category B	–	Miscibility with water depends upon the composition.	1293

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						Limited quantities	Excepted quantities	Instructions	Provisions	Instructions	Provisions
(1)	(2) 3.1.2	(3) 2.0	(4) 2.0	(5) 2.0.1.3	(6) 3.3	(7a) 3.4	(7b) 3.5	(8) 4.1.4	(9) 4.1.4	(10) 4.1.4	(11) 4.1.4
1293	TINCTURES, MEDICINAL	3	–	III	904 955	5 L	E1	P001 LP01	–	IBC03	–
1294	TOLUENE	3	–	II	–	1 L	E2	P001	–	IBC02	–
1295	TRICHLOROSILANE	4.3	8/3	I	–	0	E0	P401	PP31	–	–
1296	TRIETHYLAMINE	3	8	II	–	1 L	E2	P001	–	IBC02	–
1297	TRIMETHYLAMINE, AQUEOUS SOLUTION not more than 50% trimethylamine, by mass	3	8	I	–	0	E0	P001	–	–	–
1297	TRIMETHYLAMINE, AQUEOUS SOLUTION not more than 50% trimethylamine, by mass	3	8	II	–	1 L	E2	P001	–	IBC02	–
1297	TRIMETHYLAMINE, AQUEOUS SOLUTION not more than 50% trimethylamine, by mass	3	8	III	223	5 L	E1	P001	–	IBC03	–
1298	TRIMETHYLCHLOROSILANE	3	8	II	–	0	E0	P010	–	–	–
1299	TURPENTINE	3	– P	III	–	5 L	E1	P001 LP01	–	IBC03	–
1300	TURPENTINE SUBSTITUTE	3	–	II	–	1 L	E2	P001	–	IBC02	–
1300	TURPENTINE SUBSTITUTE	3	–	III	223	5 L	E1	P001 LP01	–	IBC03	–
1301	VINYL ACETATE, STABILIZED	3	–	II	386	1 L	E2	P001	–	IBC02	–
1302	VINYL ETHYL ETHER, STABILIZED	3	–	I	386	0	E3	P001	–	–	–
1303	VINYLDENE CHLORIDE, STABILIZED	3	– P	I	386	0	E3	P001	–	–	–
1304	VINYL ISOBUTYL ETHER, STABILIZED	3	–	II	386	1 L	E2	P001	–	IBC02	–
1305	VINYLTRICHLOROSILANE	3	8	II	–	0	E0	P010	–	–	–
1306	WOOD PRESERVATIVES, LIQUID	3	–	II	–	5 L	E2	P001	–	IBC02	–
1306	WOOD PRESERVATIVES, LIQUID	3	–	III	223 955	5 L	E1	P001 LP01	–	IBC03	–

UN No.	Portable tanks and bulk containers		EmS	Stowage and handling	Segregation	Properties and observations	UN No.
	Tank instructions	Provisions					
(12)	(13) 4.2.5 4.3	(14) 4.2.5	(15) 5.4.3.2 7.8	(16a) 7.1 7.3–7.7	(16b) 7.2–7.7	(17)	(18)
–	T2	TP1	F-E, S-D	Category A	–	Miscibility with water depends upon the composition.	1293
–	T4	TP1	F-E, S-D	Category B	–	Colourless liquid with a benzene-like odour. Flashpoint: 7°C c.c. Explosive limits: 1.27% to 7%. Immiscible with water.	1294
–	T14	TP2 TP7 TP13	F-G, S-O	Category D SW2 H1	SG5 SG8 SG13 SG25 SG26 SG72	Colourless, very volatile, flammable and corrosive liquid. Flashpoint: below –50°C. Explosive limits: 1.2% to 90.5%. Boiling point: 32°C. Reacts with water or steam to produce heat, which may lead to self-ignition; toxic and corrosive fumes will be evolved. May react vigorously in contact with oxidizing substances. Causes burns to skin, eyes and mucous membranes.	1295
–	T7	TP1	F-E, S-C	Category B SW2	–	Colourless liquid with a strong ammonia-like odour. Flashpoint: –11°C c.c. Explosive limits: 1.2% to 8%. Miscible with water. Harmful by inhalation. Causes burns to skin and eyes. Irritating to mucous membranes.	1296
–	T11	TP1	F-E, S-C	Category D SW2	SG54	Aqueous solution of a flammable gas with an ammonia-like odour. Flashpoint depending on percentage of dissolved gas. May react explosively with mercury. Miscible with water. An aqueous solution of 45% TRIMETHYLAMINE, by mass, has a flashpoint of –45°C c.c. and a boiling point of 30°C (applicable to PG I only). Harmful by inhalation. Causes burns to skin, eyes and mucous membranes.	1297
–	T7	TP1	F-E, S-C	Category B SW2	SG54	See entry above.	1297
–	T7	TP1	F-E, S-C	Category A SW2	SG54	See entry above. Irritating to skin, eyes and mucous membranes.	1297
–	T10	TP2 TP7 TP13	F-E, S-C	Category E SW2	–	Colourless liquid. Flashpoint: below –18°C c.c. Explosive limits: 1.8% to 6%. Boiling point: 57°C. Immiscible with water. Readily hydrolysed by moisture, evolving hydrogen chloride, a toxic and corrosive gas. Causes burns to skin, eyes and mucous membranes.	1298
–	T2	TP2	F-E, S-E	Category A	–	Colourless liquid. Flashpoint: 35°C c.c. Mixture of resin and volatile oils. Immiscible with water.	1299
–	T4	TP1	F-E, S-E	Category B	–	Immiscible with water.	1300
–	T2	TP1	F-E, S-E	Category A	–	See entry above.	1300
–	T4	TP1	F-E, S-D	Category C SW1	–	Colourless to light yellow liquid. Flashpoint: –8°C c.c. Explosive limits: 2.6% to 14%. Immiscible with water.	1301
–	T11	TP2	F-E, S-D	Category D SW1	–	Colourless liquid. Flashpoint: below –18°C c.c. Explosive limits: 1.7% to 28%. Boiling point: 33°C. Immiscible with water. Extremely reactive; may polymerize.	1302
–	T12	TP2 TP7	F-E, S-D	Category D SW1 SW2	–	Colourless to straw-coloured, volatile liquid with a sweet odour. Flashpoint: –28°C c.c. Explosive limits: 6.5% to 15.5%. Boiling point: 32°C. Immiscible with water.	1303
–	T4	TP1	F-E, S-D	Category C SW1	–	Colourless liquid. Flashpoint: –9°C o.c. Immiscible with water.	1304
–	T10	TP2 TP7 TP13	F-E, S-C	Category B SW2	–	Colourless, pale yellow or pink liquid with a pungent odour. Flashpoint: 11°C c.c. Explosive limits: 3% to ... Readily hydrolysed by moisture, evolving hydrogen chloride, an irritating and corrosive gas apparent as white fumes. Immiscible with water. In the presence of moisture, corrosive to most metals.	1305
–	T4	TP1 TP8	F-E, S-D	Category B	–	Miscibility with water depends upon the composition. Harmful by inhalation.	1306
–	T2	TP1	F-E, S-D	Category A	–	See entry above.	1306

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						Limited quantities	Excepted quantities	Instructions	Provisions	Instructions	Provisions
(1)	(2) 3.1.2	(3) 2.0	(4) 2.0	(5) 2.0.1.3	(6) 3.3	(7a) 3.4	(7b) 3.5	(8) 4.1.4	(9) 4.1.4	(10) 4.1.4	(11) 4.1.4
1307	XYLENES	3	-	II	-	1 L	E2	P001	-	IBC02	-
1307	XYLENES	3	-	III	223	5 L	E1	P001 LP01	-	IBC03	-
1308	ZIRCONIUM, SUSPENDED IN A FLAMMABLE LIQUID	3	-	I	-	0	E0	P001	PP33	-	-
1308	ZIRCONIUM, SUSPENDED IN A FLAMMABLE LIQUID	3	-	II	-	1 L	E2	P001	PP33	-	-
1308	ZIRCONIUM, SUSPENDED IN A FLAMMABLE LIQUID	3	-	III	223	5 L	E1	P001	-	-	-
1309	ALUMINIUM POWDER, COATED	4.1	-	II	-	1 kg	E2	P002	PP38 PP100	IBC08	B4 B21
1309	ALUMINIUM POWDER, COATED	4.1	-	III	223	5 kg	E1	P002 LP02	PP11 PP38 PP100 L3	IBC08	B4
1310	AMMONIUM PICRATE, WETTED with not less than 10% water, by mass	4.1	-	I	28	0	E0	P406	PP26 PP31	-	-
1312	BORNEOL	4.1	-	III	-	5 kg	E1	P002 LP02	-	IBC08	B3
1313	CALCIUM RESINATE	4.1	-	III	-	5 kg	E1	P002	-	IBC06	-
1314	CALCIUM RESINATE, FUSED	4.1	-	III	-	5 kg	E1	P002	-	IBC04	-
1318	COBALT RESINATE, PRECIPITATED	4.1	-	III	-	5 kg	E1	P002	-	IBC06	-
1320	DINITROPHENOL, WETTED with not less than 15% water, by mass	4.1	6.1 P	I	28	0	E0	P406	PP26 PP31	-	-
1321	DINITROPHENOLATES, WETTED with not less than 15% water, by mass	4.1	6.1 P	I	28	0	E0	P406	PP26 PP31	-	-
1322	DINITRORESORCINOL, WETTED with not less than 15% water, by mass	4.1	-	I	28	0	E0	P406	PP26 PP31	-	-
1323	FERROCERIUM	4.1	-	II	249	1 kg	E2	P002	PP100	IBC08	B4 B21
1324	FILMS, NITROCELLULOSE BASE gelatin coated, except scrap	4.1	-	III	-	5 kg	E1	P002	PP15	-	-
1325	FLAMMABLE SOLID, ORGANIC, N.O.S.	4.1	-	II	274	1 kg	E2	P002	-	IBC08	B4 B21

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	Tank instructions	Provisions					
(12)	(13) 4.2.5 4.3	(14) 4.2.5	(15) 5.4.3.2 7.8	(16a) 7.1 7.3-7.7	(16b) 7.2-7.7	(17)	(18)
-	T4	TP1	F-E, S-D	Category B	-	Colourless liquids. Flashpoint: 17°C to 23°C c.c. Explosive limits: 1.1% to 7%. Immiscible with water.	1307
-	T2	TP1	F-E, S-D	Category A	-	See entry above. Flashpoint: 23°C to 30°C c.c.	1307
-	-	-	F-E, S-D	Category D	-	Finely divided zirconium metal in a flammable liquid. Immiscible with water. Spillage is liable to self-ignition.	1308
-	-	-	F-E, S-D	Category B	-	See entry above.	1308
-	-	-	F-E, S-D	Category B	-	See entry above.	1308
-	T3	TP33	F-G, S-G	Category A H1	SG17 SG25 SG26 SG32 SG35 SG36 SG52	If uncoated, it possesses the property of evolving hydrogen gas when in contact with water, especially seawater; if treated with oil or wax, it does not at ordinary temperatures. Reacts readily with acids and caustic alkalis, evolving hydrogen, a flammable gas. Reacts readily with iron oxide, producing a thermite effect. May form explosive mixtures with oxidizing substances. In the event of breakage of receptacles, the scattered powder is readily ignited by sparks or open flame and may give rise to an explosive atmosphere.	1309
-	T1	TP33	F-G, S-G	Category A H1	SG17 SG25 SG26 SG32 SG35 SG36 SG52	See entry above.	1309
-	-	-	F-B, S-J	Category D	SG7 SG30	Desensitized explosive. Substance in pure form consists of yellow crystals. Explosive and sensitive to friction in the dry state. May form extremely sensitive compounds with heavy metals or their salts. Harmful if swallowed or by skin contact.	1310
-	T1	TP33	F-A, S-I	Category A	-	White, translucent lumps. Camphor-like odour. Insoluble in water. Harmful by ingestion.	1312
-	T1	TP33	F-A, S-I	Category A	-	Yellowish-white, amorphous powder or lumps. Insoluble in water. Liable to spontaneous heating. Irritating to skin and mucous membranes.	1313
-	T1	TP33	F-A, S-I	Category A	-	Yellowish-white, amorphous powder or lumps. Insoluble in water. Liable to spontaneous heating. Irritating to skin and mucous membranes.	1314
-	T1	TP33	F-A, S-I	Category A	-	Dark brownish-black solid. Insoluble in water. Readily combustible; may ignite spontaneously if contaminated with vegetable fibres (such as cotton). Irritating to skin and mucous membranes.	1318
-	-	-	F-B, S-J	Category E	SG7 SG30	Desensitized explosive. Substance when pure consists of yellow crystals. Slightly soluble in water. May form extremely sensitive compounds with heavy metals or their salts. Toxic if swallowed, by skin contact or by inhalation.	1320
-	-	-	F-B, S-J	Category E	SG7 SG30	Desensitized explosives. Explosive and sensitive to friction in the dry state. May form extremely sensitive compounds with heavy metals or their salts. Toxic if swallowed, by skin contact or by inhalation.	1321
-	-	-	F-B, S-J	Category E	SG7 SG30	Desensitized explosive. Explosive when dry. May form extremely sensitive compounds with heavy metals or their salts. Harmful if swallowed or by skin contact.	1322
-	T3	TP33	F-G, S-G	Category A H1	SG25 SG26	Alloy derived from cerium or mischmetal, with the addition of 10% to 65% iron. Emits sparks when struck.	1323
-	-	-	F-G, S-I	Category D	SG7	Ignites readily. When involved in a fire, evolves toxic fumes; in closed compartments, these fumes may form an explosive mixture with air.	1324
-	T3	TP33	F-A, S-G	Category B	-	-	1325

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DANGEROUS GOODS (IMDG) CODE

UN No.	Proper shipping name (PSN)	Class or division	Subsidiary risk(s)	Packing group	Special provisions	Limited and excepted quantity provisions		Packing		IBC	
						Limited quantities	Excepted quantities	Instructions	Provisions	Instructions	Provisions
(1)	(2) 3.1.2	(3) 2.0	(4) 2.0	(5) 2.0.1.3	(6) 3.3	(7a) 3.4	(7b) 3.5	(8) 4.1.4	(9) 4.1.4	(10) 4.1.4	(11) 4.1.4
1325	FLAMMABLE SOLID, ORGANIC, N.O.S.	4.1	–	III	223 274	5 kg	E1	P002	–	IBC08	B3
1326	HAFNIUM POWDER, WETTED with not less than 25% water (a visible excess of water must be present) (a) mechanically produced, particle size less than 53 microns; (b) chemically produced, particle size less than 840 microns	4.1	–	II	916	1 kg	E2	P410	PP31 PP40	IBC06	B21
1327	HAY, STRAW or BHUSA	4.1	–	–	29 281 954	3 kg	E0	P003	PP19	IBC08	B6
1328	HEXAMETHYLENETETRAMINE	4.1	–	III	–	5 kg	E1	P002	–	IBC08	B3
1330	MANGANESE RESINATE	4.1	–	III	–	5 kg	E1	P002	–	IBC06	–
1331	MATCHES, "STRIKE ANYWHERE"	4.1	–	III	293	5 kg	E0	P407	PP27	–	–
1332	METALDEHYDE	4.1	–	III	–	5 kg	E1	P002 LP02	–	IBC08	B3
1333	CERIUM slabs, ingots or rods	4.1	–	II	–	1 kg	E2	P002	PP100	IBC08	B4 B21
1334	NAPHTHALENE, CRUDE or NAPHTHALENE, REFINED	4.1	– P	III	948 967	5 kg	E1	P002 LP02	–	IBC08	B3
1336	NITROGUANIDINE (PICRITE), WETTED with not less than 20% water, by mass	4.1	–	I	28	0	E0	P406	PP31	–	–
1337	NITROSTARCH, WETTED with not less than 20% water, by mass	4.1	–	I	28	0	E0	P406	PP31	–	–
1338	PHOSPHORUS, AMORPHOUS	4.1	–	III	–	5 kg	E1	P410	–	IBC08	B3
1339	PHOSPHORUS HEPTASULPHIDE free from yellow or white phosphorus	4.1	–	II	–	1 kg	E2	P410	PP31	IBC04	–
1340	PHOSPHORUS PENTASULPHIDE free from yellow or white phosphorus	4.3	4.1	II	–	500 g	E2	P410	PP31 PP40	IBC04	–
1341	PHOSPHORUS SESQUISULPHIDE free from yellow or white phosphorus	4.1	–	II	–	1 kg	E2	P410	PP31	IBC04	–
1343	PHOSPHORUS TRISULPHIDE free from yellow or white phosphorus	4.1	–	II	–	1 kg	E2	P410	PP31	IBC04	–

(12)	Portable tanks and bulk containers		EmS	Stowage and handling	Segregation	Properties and observations	UN No.
	Tank instructions	Provisions					
(13) 4.2.5 4.3	(14) 4.2.5	(15) 5.4.3.2 7.8	(16a) 7.1 7.3–7.7	(16b) 7.2–7.7	(17)	(18)	
–	T1	TP33	F-A, S-G	Category B	–	–	1325
–	T3	TP33	F-A, S-J	Category E	SG17	Insoluble in water. Liable to spontaneous combustion when dry. Forms explosive mixtures with oxidizing substances.	1326
–	–	–	F-A, S-I	Category A SW10	SG23	Ignites readily. Liable to spontaneous combustion when wet, damp or contaminated with oil. Refuse for shipment when loose, damp, wet or contaminated with oil.	1327
–	T1	TP33	F-A, S-G	Category A	–	White, crystalline powder. Soluble in water.	1328
–	T1	TP33	F-A, S-I	Category A	–	Very dark brown solid. Insoluble in water. Liable to spontaneous heating. Irritating to skin, eyes and mucous membranes.	1330
–	–	–	F-A, S-I	Category B	–	Ignite by friction; prepared surface is not required.	1331
–	T1	TP33	F-A, S-G	Category A	–	White crystals, powder or tablets. Insoluble in water. Harmful if swallowed or by dust inhalation.	1332
–	–	–	F-G, S-P	Category A H1	SG17 SG25 SG26	Contains 94–99% rare earth metals. In contact with water or moist air, evolves hydrogen, a flammable gas. Emits sparks when scratched or struck.	1333
–	T1 BK2 BK3	TP33	F-A, S-G	Category A SW23	–	Crystalline flakes or powder with a persistent odour. Evolves flammable vapours at, or below, its melting point.	1334
–	–	–	F-B, S-J	Category E	SG7 SG30	Desensitized explosive. White solid. When involved in a fire, evolves toxic fumes; in closed compartments, these fumes may form an explosive mixture with air. May form extremely sensitive compounds with heavy metals or their salts.	1336
–	–	–	F-B, S-J	Category D	SG7 SG30	Desensitized explosive. Orange powder. Explosive and sensitive to friction in the dry state. When involved in a fire, evolves toxic fumes; in closed compartments these fumes may form an explosive mixture with air. May form extremely sensitive compounds with heavy metals or their salts.	1337
–	T1	TP33	F-A, S-G	Category A	SG17	Reddish-brown powder. Insoluble in water. Ignites readily by friction. When involved in a fire, evolves irritating fumes. Forms explosive mixtures with oxidizing substances. Harmful if swallowed or by dust inhalation.	1338
–	T3	TP33	F-G, S-G	Category B H1	SG17 SG25 SG26	Yellow solid. Ignites readily by friction. Develops heat in contact with moist air, evolving toxic and flammable gases. Forms explosive mixtures with oxidizing substances. Harmful if swallowed or by dust inhalation.	1339
–	T3	TP33	F-G, S-N	Category D H1	SG26	Yellow solid. Ignites readily by friction. Develops heat in contact with moist air, evolving toxic and flammable gases. Forms explosive mixtures with oxidizing substances. Harmful if swallowed or by dust inhalation.	1340
–	T3	TP33	F-A, S-G	Category B	SG17	Yellow solid. Ignites readily by friction. Develops heat in contact with moist air, evolving toxic and flammable gases. Forms explosive mixtures with oxidizing substances. Harmful if swallowed or by dust inhalation.	1341
–	T3	TP33	F-G, S-G	Category B H1	SG17 SG25 SG26	Yellow solid. Ignites readily by friction. Develops heat in contact with moist air, evolving toxic and flammable gases. Forms explosive mixtures with oxidizing substances. Harmful if swallowed or by dust inhalation.	1343

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						Limited quantities	Excepted quantities	Instructions	Provisions	Instructions	Provisions
(1)	(2)	(3)	(4)	(5)	(6)	(7a)	(7b)	(8)	(9)	(10)	(11)
	3.1.2	2.0	2.0	2.0.1.3	3.3	3.4	3.5	4.1.4	4.1.4	4.1.4	4.1.4
1344	TRINITROPHENOL (PICRIC ACID), WETTED with not less than 30% water, by mass	4.1	-	I	28	0	E0	P406	PP26 PP31	-	-
1345	RUBBER SCRAP powdered or granulated, not exceeding 840 microns and rubber content exceeding 45% or RUBBER SHODDY powdered or granulated, not exceeding 840 microns and rubber content exceeding 45%	4.1	-	II	223 917	1 kg	E2	P002	-	IBC08	B4 B21
1346	SILICON POWDER, AMORPHOUS	4.1	-	III	32	5 kg	E1	P002 LP02	-	IBC08	B3
1347	SILVER PICRATE, WETTED with not less than 30% water, by mass	4.1	-	I	28 900	0	E0	P406	PP25 PP26 PP31	-	-
1348	SODIUM DINITRO- <i>o</i> -CRESOLATE, WETTED with not less than 15% water, by mass	4.1	6.1 P	I	28	0	E0	P406	PP26 PP31	-	-
1349	SODIUM PICRAMATE, WETTED with not less than 20% water, by mass	4.1	-	I	28	0	E0	P406	PP26 PP31	-	-
1350	SULPHUR	4.1	-	III	242 967	5 kg	E1	P002 LP02	-	IBC08	B3
1352	TITANIUM POWDER, WETTED with not less than 25% water (a visible excess of water must be present) (a) mechanically produced, particle size less than 53 microns; (b) chemically produced, particle size less than 840 microns	4.1	-	II	28 916	1 kg	E2	P410	PP31 PP40	IBC06	B21
1353	FIBRES or FABRICS IMPREGNATED WITH WEAKLY NITRATED NITROCELLULOSE, N.O.S.	4.1	-	III	-	5 kg	E1	P410	-	IBC08	B3
1354	TRINITROBENZENE, WETTED with not less than 30% water, by mass	4.1	-	I	28	0	E0	P406	PP31	-	-

(12)	Portable tanks and bulk containers		EmS	Stowage and handling	Segregation	Properties and observations	UN No.
	Tank instructions	Provisions					
(13)	(14)	(15)	(16a)	(16b)	(17)	(18)	
4.2.5 4.3	4.2.5	5.4.3.2 7.8	7.1 7.3-7.7	7.2-7.7			
-	-	-	F-B, S-J	Category E	SG7 SG30	Desensitized explosive. Substance in pure form consists of yellow crystals. Soluble in water. Explosive and sensitive to friction in the dry state. May form extremely sensitive compounds with heavy metals or their salts. Harmful if swallowed or by skin contact.	1344
-	T3	TP33	F-A, S-I	Category A	-	Liable to spontaneous heating.	1345
-	T1	TP33	F-A, S-G	Category A	SG17	Dark brown, non-metallic powder. Burns in air, when ignited; readily flammable when mixed with oxidizing substances.	1346
-	-	-	F-B, S-J	Category D	SG7 SG30	Desensitized explosive. Yellow crystals. Soluble in water. Explosive and sensitive to friction in the dry state. Harmful if swallowed or by skin contact. May form extremely sensitive compounds with heavy metals or their salts. Transport of SILVER PICRATE, dry or wetted with less than 30% water, by mass is prohibited.	1347
-	-	-	F-B, S-J	Category E	SG7 SG30	Desensitized explosive. Substance in pure form consists of yellow powder. Explosive and sensitive to friction in the dry state. May form extremely sensitive compounds with heavy metals or their salts. When involved in a fire, evolves toxic fumes; in closed compartments, these fumes may form an explosive mixture with air. Toxic if swallowed, by skin contact or by inhalation.	1348
-	-	-	F-B, S-J	Category E	SG7 SG30	Desensitized explosive. Substance in pure form consists of yellow powder. Explosive and sensitive to friction in the dry state. May form extremely sensitive compounds with heavy metals or their salts. When involved in a fire, evolves toxic fumes; in closed compartments, these fumes may form an explosive mixture with air. Harmful if swallowed or by skin contact.	1349
-	T1 BK2 BK3	TP33	F-A, S-G	Category A SW1 SW23	SG17	When involved in a fire, evolves toxic, very irritating and suffocating gas. The dust forms an explosive mixture with air which may be ignited by static electricity. Forms explosive mixtures with oxidizing substances. Corrosive to steel, in particular in the presence of moisture. The provisions of this Code should not apply to sulphur when it is formed to a specific shape (such as prills, granules, pellets, pastilles or flakes).	1350
-	T3	TP33	F-A, S-J	Category E	SG17	Grey powder. Forms explosive mixtures with oxidizing substances.	1352
-	-	-	F-A, S-I	Category D	-	Toe board used in the manufacture of boots and shoes. When involved in a fire, evolves toxic fumes; in closed compartments, these fumes may form an explosive mixture with air.	1353
-	-	-	F-B, S-J	Category E	SG7 SG30	Desensitized explosive. Substance in pure form consists of yellow crystals. When involved in a fire, evolves toxic fumes; in closed compartments these fumes may form an explosive mixture with air. Explosive and sensitive to friction in the dry state. May form extremely sensitive compounds with heavy metals or their salts. Harmful if swallowed or by skin contact.	1354

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						Limited quantities	Excepted quantities	Instructions	Provisions	Instructions	Provisions
(1)	(2) 3.1.2	(3) 2.0	(4) 2.0	(5) 2.0.1.3	(6) 3.3	(7a) 3.4	(7b) 3.5	(8) 4.1.4	(9) 4.1.4	(10) 4.1.4	(11) 4.1.4
1355	TRINITROBENZOIC ACID, WETTED with not less than 30% water, by mass	4.1	-	I	28	0	E0	P406	PP31	-	-
1356	TRINITROTOLUENE (TNT), WETTED with not less than 30% water, by mass	4.1	-	I	28	0	E0	P406	PP31	-	-
1357	UREA NITRATE, WETTED with not less than 20% water, by mass	4.1	-	I	28 227	0	E0	P406	PP31	-	-
1358	ZIRCONIUM POWDER, WETTED with not less than 25% water (a visible excess of water must be present) (a) mechanically produced, particle size less than 53 microns; (b) chemically produced, particle size less than 840 microns	4.1	-	II	916	1 kg	E2	P410	PP31 PP40	IBC06	B21
1360	CALCIUM PHOSPHIDE	4.3	6.1	I	-	0	E0	P403	PP31	-	-
1361	CARBON animal or vegetable origin	4.2	-	II	925	0	E0	P002	PP12	IBC06	-
1361	CARBON animal or vegetable origin	4.2	-	III	223 925	0	E0	P002 LP02	PP12	IBC08	B3
1362	CARBON, ACTIVATED	4.2	-	III	223 925	0	E1	P002	PP11 PP31	IBC08	B3
1363	COPRA	4.2	-	III	29 926	0	E0	P003 LP02	PP20	IBC08	B3 B6
1364	COTTON WASTE, OILY	4.2	-	III	29	0	E0	P003 LP02	PP19	IBC08	B3 B6
1365	COTTON, WET	4.2	-	III	29	0	E0	P003	PP19	IBC08	B3 B6
1369	p-NITROSODIMETHYLANILINE	4.2	-	II	927	0	E2	P410	-	IBC06	B21
1372	FIBRES ANIMAL or FIBRES VEGETABLE burnt, wet or damp	4.2	-	III	117	0	E1	P410	-	-	-
1373	FIBRES or FABRICS, ANIMAL or VEGETABLE or SYNTHETIC, N.O.S. with oil	4.2	-	III	-	0	E0	P410	PP31	IBC08	B3

UN No.	Portable tanks and bulk containers		EmS	Stowage and handling	Segregation	Properties and observations	UN No.
	Tank instructions	Provisions					
(12)	(13) 4.2.5 4.3	(14) 4.2.5	(15) 5.4.3.2 7.8	(16a) 7.1 7.3-7.7	(16b) 7.2-7.7	(17)	(18)
-	-	-	F-B, S-J	Category E	SG7 SG30	Desensitized explosive. Substance in pure form consists of yellow crystals. Soluble in water. When involved in a fire, evolves toxic fumes; in closed compartments these fumes may form an explosive mixture with air. Explosive and sensitive to friction in the dry state. Harmful if swallowed or by skin contact. May form extremely sensitive compounds with heavy metals or their salts.	1355
-	-	-	F-B, S-J	Category E	SG7 SG30	Desensitized explosive. Substance in pure form consists of yellow crystals. When involved in a fire, evolves toxic fumes; in closed compartments these fumes may form an explosive mixture with air. Explosive and sensitive to friction in the dry state. May form extremely sensitive compounds with heavy metals or their salts. Harmful if swallowed or by skin contact.	1356
-	-	-	F-B, S-J	Category E	SG7 SG30	Desensitized explosive. Substance in pure form consists of white crystals. Soluble in water. When involved in a fire, evolves toxic fumes; in closed compartments these fumes may form an explosive mixture with air. Explosive and sensitive to friction in the dry state. May form extremely sensitive compounds with heavy metals or their salts.	1357
-	T3	TP33	F-G, S-J	Category E H1	SG17 SG25 SG26	Grey powder. Insoluble in water. Liable to spontaneous combustion when dry. Forms explosive mixtures with oxidizing substances.	1358
-	-	-	F-G, S-N	Category E SW2 SW5 H1	SG26 SG35	Red to brown crystals. Reacts with acids or decomposes slowly in contact with water or damp air, evolving phosphine, a spontaneously flammable and highly toxic gas. Reacts violently with oxidizing substances. Toxic if swallowed, by skin contact or by inhalation.	1360
-	T3	TP33	F-A, S-J	Category A SW1 H2	-	Black powder or granules. Liable to heat slowly and ignite spontaneously in air. The material as offered for shipment should have been sufficiently heat-treated and should be cooled down to ambient temperature before packing.	1361
-	T1	TP33	F-A, S-J	Category A SW1 H2	-	See entry above.	1361
-	T1	TP33	F-A, S-J	Category A SW1 H2	-	Black powder or granules. Liable to heat slowly and ignite spontaneously in air. The material as offered for shipment should have been sufficiently heat-treated and should be cooled down to ambient temperature before packing.	1362
-	BK2	-	F-A, S-J	Category A SW1 SW9 H1	-	Dried kernels of coconuts, with a penetrating rancid odour which may taint other cargoes.	1363
-	-	-	F-A, S-J	Category A	SG41	Fibres of vegetable origin.	1364
-	-	-	F-A, S-J	Category A	-	Readily combustible, liable to ignite spontaneously according to moisture content.	1365
-	T3	TP33	F-A, S-J	Category D	SG29	Dark green, crystalline solid, insoluble in water. Ignites spontaneously in air when dry. Harmful if swallowed.	1369
-	-	-	F-A, S-J	Category A	-	Liable to ignite spontaneously according to moisture content.	1372
-	T1	TP33	F-A, S-J	Category A	-	Liable to ignite spontaneously according to the oil content.	1373

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						Limited quantities	Excepted quantities	Instructions	Provisions	Instructions	Provisions
(1)	(2) 3.1.2	(3) 2.0	(4) 2.0	(5) 2.0.1.3	(6) 3.3	(7a) 3.4	(7b) 3.5	(8) 4.1.4	(9) 4.1.4	(10) 4.1.4	(11) 4.1.4
1374	FISHMEAL, UNSTABILIZED or FISHSCRAP, UNSTABILIZED High hazard. Unrestricted moisture content. Unrestricted fat content in excess of 12%, by mass; unrestricted fat content in excess of 15%, by mass, in the case of anti-oxidant treated fishmeal or fishscrap	4.2	–	II	300 928	0	E2	P410	PP31 PP40	IBC08	B4 B21
1374	FISHMEAL, UNSTABILIZED or FISHSCRAP, UNSTABILIZED Not anti-oxidant treated. Moisture content: more than 5% but not more than 12%, by mass. Fat content: not more than 12%, by mass	4.2	–	III	29 300 907 928	0	E1	P410	PP31	IBC08	B3 B21
1376	IRON OXIDE, SPENT or IRON SPONGE, SPENT obtained from coal gas purification	4.2	–	III	223	0	E0	P002 LP02	PP100 L3	IBC08	B4
1378	METAL CATALYST, WETTED with a visible excess of liquid	4.2	–	II	274	0	E0	P410	PP31 PP39 PP40	IBC01	–
1379	PAPER, UNSATURATED OIL TREATED incompletely dried (including carbon paper)	4.2	–	III	–	0	E0	P410	PP31	IBC08	B3
1380	PENTABORANE	4.2	6.1	I	–	0	E0	P601	–	–	–
1381	PHOSPHORUS, WHITE or YELLOW, DRY or UNDER WATER or IN SOLUTION	4.2	6.1 P	I	–	0	E0	P405	PP31	–	–
1382	POTASSIUM SULPHIDE, ANHYDROUS or POTASSIUM SULPHIDE with less than 30% water of crystallization	4.2	–	II	–	0	E2	P410	PP31 PP40	IBC06	B21
1383	PYROPHORIC METAL, N.O.S. or PYROPHORIC ALLOY, N.O.S.	4.2	–	I	274	0	E0	P404	PP31	–	–
1384	SODIUM DITHIONITE (SODIUM HYDROSULPHITE)	4.2	–	II	–	0	E2	P410	PP31	IBC06	B21
1385	SODIUM SULPHIDE, ANHYDROUS or SODIUM SULPHIDE with less than 30% water of crystallization	4.2	–	II	–	0	E2	P410	PP31	IBC06	B21

(12)	Portable tanks and bulk containers		EmS	Stowage and handling	Segregation	Properties and observations	UN No.
	Tank instructions	Provisions					
(13) 4.2.5 4.3	(14) 4.2.5	(15) 5.4.3.2 7.8	(16a) 7.1 7.3–7.7	(16b) 7.2–7.7	(17)	(18)	
–	T3	TP33	F-A, S-J	Category B SW1 SW24	SG65	Brown to greenish-brown product derived from oily fish. Strong odour which may affect other cargo. Liable to heat and ignite spontaneously.	1374
–	T1	TP33	F-A, S-J	Category A SW1 SW24	–	See entry above.	1374
–	T1 BK2	TP33	F-G, S-P	Category E H1	SG26	Obtained from coal gas purification. Strong odour which may taint other cargo. Liable to heat and ignite spontaneously. May evolve hydrogen sulphide, sulphur dioxide and hydrogen cyanide, which are toxic gases. This substance should have been cooled and weathered for not less than eight weeks before shipment, unless packed in a metal drum.	1376
–	T3	TP33	F-H, S-M	Category C	–	Liable to ignite spontaneously if dry.	1378
–	–	–	F-A, S-J	Category A	–	Liable to ignite spontaneously. The provisions of this Code should not apply to manufactured articles properly aged.	1379
–	–	–	F-G, S-L	Category D H1	SG26	Colourless liquid. Boiling point range: 48°C to 63°C. Ignites spontaneously in air. Decomposes in contact with water, evolving hydrogen, a flammable gas. Toxic if swallowed, by skin contact or by inhalation.	1380
–	T9	TP3 TP31	F-A, S-J	Category E	–	Ignites spontaneously in air. Melting point: 44°C. Toxic if swallowed, by skin contact or by inhalation. Receptacles are usually filled with substance in the liquid state which subsequently solidifies. A sufficient ullage should be allowed.	1381
–	T3	TP33	F-A, S-J	Category A	SG35	Black solid, absorbs moisture to become crystalline. Liable to ignite spontaneously. In contact with acids, evolves hydrogen sulphide, a toxic and flammable gas. Reacts violently with acids.	1382
–	T21	TP7 TP33	F-G, S-M	Category D H1	SG26	Liable to ignite spontaneously in air. If shaken, may produce sparks. In contact with water, evolves hydrogen, a flammable gas.	1383
–	T3	TP33	F-A, S-J	Category E H1	–	White or grey crystalline powder. Liable to heat and ignite spontaneously in air and to evolve sulphur dioxide, an irritating gas.	1384
–	T3	TP33	F-A, S-J	Category A	SG35	Black solid, absorbs moisture to become crystalline. Liable to ignite spontaneously. In contact with acids, evolves hydrogen sulphide, a toxic and flammable gas. Reacts violently with acids.	1385

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						Limited quantities	Excepted quantities	Instructions	Provisions	Instructions	Provisions
(1)	(2)	(3)	(4)	(5)	(6)	(7a)	(7b)	(8)	(9)	(10)	(11)
	3.1.2	2.0	2.0	2.0.1.3	3.3	3.4	3.5	4.1.4	4.1.4	4.1.4	4.1.4
1386	SEED CAKE, containing vegetable oil (a) mechanically expelled seeds, containing more than 10% oil or more than 20% oil and moisture combined	4.2	–	III	29 929	0	E0	P003 LP02	PP20	IBC08	B3 B6
1386	SEED CAKE, containing vegetable oil (b) solvent extractions and expelled seeds, containing not more than 10% of oil and when the amount of moisture is higher than 10%, not more than 20% of oil and moisture combined	4.2	–	III	29 929	0	E0	P003 LP02	PP20	IBC08	B3 B6
1387	WOOL WASTE, WET	4.2	–	III	117	0	E1	P410	–	–	–
1389	ALKALI METAL AMALGAM, LIQUID	4.3	–	I	182	0	E0	P402	PP31	–	–
1390	ALKALI METAL AMIDE	4.3	–	II	182	500 g	E2	P410	PP31 PP40	IBC07	B4 B21
1391	ALKALI METAL DISPERSION or ALKALINE EARTH METAL DISPERSION	4.3	–	I	182 183	0	E0	P402	PP31	–	–
1392	ALKALINE EARTH METAL AMALGAM, LIQUID	4.3	–	I	183	0	E0	P402	PP31	–	–
1393	ALKALINE EARTH METAL ALLOY, N.O.S.	4.3	–	II	183	500 g	E2	P410	PP31 PP40	IBC07	B4 B21
1394	ALUMINIUM CARBIDE	4.3	–	II	–	500 g	E2	P410	PP31 PP40	IBC07	B4 B21
1395	ALUMINIUM FERROSILICON POWDER	4.3	6.1	II	932	500 g	E2	P410	PP31 PP40	IBC05	B21
1396	ALUMINIUM POWDER, UNCOATED	4.3	–	II	–	500 g	E2	P410	PP31 PP40	IBC07	B4 B21
1396	ALUMINIUM POWDER, UNCOATED	4.3	–	III	223	1 kg	E1	P410	PP31 PP40	IBC08	B4

UN No.	Portable tanks and bulk containers		EmS	Stowage and handling	Segregation	Properties and observations	UN No.
	Tank instructions	Provisions					
(12)	(13)	(14)	(15)	(16a)	(16b)	(17)	(18)
	4.2.5 4.3	4.2.5	5.4.3.2 7.8	7.1 7.3–7.7	7.2–7.7		
–	BK2	–	F-A, S-J	Category E SW1 SW25 H1	–	Residue remaining after oil has been expelled mechanically from oil-bearing seeds. Used mainly as animal feed or fertilizer. The most common seed cakes include those derived from coconut (copra), cottonseed, groundnut (peanut), linseed, maize (hominy chop), niger seed, palm kernel, rape seed, rice bran, soya bean and sunflower seed and they may be shipped in the form of cake, flakes, pellets, meal, etc. May self-heat slowly and, if wet or containing an excessive proportion of unoxidized oil, ignite spontaneously. Before shipment, this cargo should be properly aged. The duration of ageing varies with the oil content. Smoking and the use of naked lights should be prohibited during loading and unloading and on entry to the cargo space(s) at any time.	1386
–	BK2	–	F-A, S-J	Category A SW1 SW25 H1	–	Residue remaining after oil has been extracted by a solvent process or expelled mechanically from oil-bearing seeds. Used mainly as animal feed or fertilizer. The most common seed cakes include those derived from coconut (copra), cottonseed, groundnut (peanut), linseed, maize (hominy chop), niger seed, palm kernel, rape seed, rice bran, soya bean and sunflower seed and they may be shipped in the form of cake, flakes, pellets, meal, etc. May self-heat slowly and, if wet or containing an excessive proportion of unoxidized oil, ignite spontaneously. The seed cake should be substantially free from flammable solvent. Before shipment, this cargo should be properly aged. The duration of ageing varies with the oil content. Smoking and the use of naked lights should be prohibited during loading and unloading and on entry to the cargo space(s) at any other time.	1386
–	–	–	F-A, S-J	Category A	–	Liable to ignite spontaneously in air according to moisture content.	1387
–	–	–	F-G, S-N	Category D H1	SG26 SG35	Silvery liquid, consisting of metal alloyed with mercury. Reacts with moisture, water or acids, evolving hydrogen, a flammable gas. When heated, evolves toxic vapours.	1389
–	T3	TP33	F-G, S-O	Category E SW2 H1	SG26 SG35	Small crystals. Decomposes in contact with water or acids, evolving ammonia vapour and producing highly caustic alkaline solutions.	1390
–	–	–	F-G, S-N	Category D H1	SG26 SG35	Finely divided alkali metal or alkaline earth metal, suspended in a liquid. Reacts violently with moisture, water or acids, evolving hydrogen, which may be ignited by the heat of the reaction.	1391
–	–	–	F-G, S-N	Category D H1	SG26 SG35	Consists of metal alloyed with mercury. Contains 2% to 10% alkaline earth metals and may contain up to 98% mercury. Reacts with moisture, water or acids, evolving hydrogen, a flammable gas. When heated, evolves toxic vapours.	1392
–	T3	TP33	F-G, S-N	Category E H1	SG26 SG35	When containing a substantial proportion of alkaline earth metals, readily decomposed by water and reacts violently with acids, evolving hydrogen, which may be ignited by the heat of the reaction.	1393
–	T3	TP33	F-G, S-N	Category A H1	SG26 SG35	Yellow crystals or powder. In contact with water, rapidly evolves methane, a flammable gas. Reacts violently with acids.	1394
–	T3 BK2	TP33	F-G, S-N	Category A SW2 SW5 H1	SG26 SG32 SG35 SG36	In contact with water, caustic alkalis or acids, evolves hydrogen, a flammable gas. Impurities may, under similar circumstances, produce phosphine and arsine, which are highly toxic gases.	1395
–	T3	TP33	F-G, S-O	Category A H1	SG26 SG32 SG35 SG36	In contact with water, caustic alkalis or acids, evolves hydrogen, a flammable gas. When finely divided aluminium dust is scattered, it is easily ignited by naked lights, causing explosion. May explode when in contact with oxidizing substances. Reacts with liquid halogenated hydrocarbons.	1396
–	T1	TP33	F-G, S-O	Category A H1	SG26 SG32 SG35 SG36	See entry above.	1396

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UN No.	Proper shipping name (PSN)	Class or division	Subsidiary risk(s)	Packing group	Special provisions	Limited and excepted quantity provisions		Packing		IBC	
						Limited quantities (7a)	Excepted quantities (7b)	Instructions (8)	Provisions (9)	Instructions (10)	Provisions (11)
(1)	(2) 3.1.2	(3) 2.0	(4) 2.0	(5) 2.0.1.3	(6) 3.3	(7a) 3.4	(7b) 3.5	(8) 4.1.4	(9) 4.1.4	(10) 4.1.4	(11) 4.1.4
1397	ALUMINIUM PHOSPHIDE	4.3	6.1	I	–	0	E0	P403	PP31	–	–
1398	ALUMINIUM SILICON POWDER, UNCOATED	4.3	–	III	37 223 932	1 kg	E1	P410	PP31 PP40	IBC08	B4
1400	BARIUM	4.3	–	II	–	500 g	E2	P410	PP31 PP40	IBC07	B4 B21
1401	CALCIUM	4.3	–	II	–	500 g	E2	P410	PP31 PP40	IBC07	B4 B21
1402	CALCIUM CARBIDE	4.3	–	I	951	0	E0	P403	PP31 PP40	IBC04	B1
1402	CALCIUM CARBIDE	4.3	–	II	951	500 g	E2	P410	PP31 PP40	IBC07	B4 B21
1403	CALCIUM CYANAMIDE with more than 0.1% calcium carbide	4.3	–	III	38 934	1 kg	E1	P410	PP31 PP40	IBC08	B4
1404	CALCIUM HYDRIDE	4.3	–	I	–	0	E0	P403	PP31	–	–
1405	CALCIUM SILICIDE	4.3	–	II	932	500 g	E2	P410	PP31 PP40	IBC07	B4 B21
1405	CALCIUM SILICIDE	4.3	–	III	223 932	1 kg	E1	P410	PP31 PP40	IBC08	B4
1407	CAESIUM	4.3	–	I	–	0	E0	P403	PP31	IBC04	B1
1408	FERROSILICON with 30% or more but less than 90% silicon	4.3	6.1	III	39 223 932	1 kg	E1	P003	PP20 PP100	IBC08	B4 B6
1409	METAL HYDRIDES, WATER-REACTIVE, N.O.S.	4.3	–	I	274	0	E0	P403	PP31	–	–
1409	METAL HYDRIDES, WATER-REACTIVE, N.O.S.	4.3	–	II	274	500 g	E2	P410	PP31 PP40	IBC04	–
1410	LITHIUM ALUMINIUM HYDRIDE	4.3	–	I	–	0	E0	P403	PP31	–	–
1411	LITHIUM ALUMINIUM HYDRIDE, ETHEREAL	4.3	3	I	–	0	E0	P402	–	–	–
1413	LITHIUM BOROXYDRIDE	4.3	–	I	–	0	E0	P403	PP31	–	–

UN No.	Portable tanks and bulk containers		EmS	Stowage and handling	Segregation	Properties and observations	UN No.
	Tank instructions (12)	Provisions (14)					
(1)	(13) 4.2.5 4.3	(14) 4.2.5	(15) 5.4.3.2 7.8	(16a) 7.1 7.3–7.7	(16b) 7.2–7.7	(17)	(18)
1397	–	–	F-G, S-N	Category E SW2 SW5 H1	SG26 SG35	Crystals or powder. Reacts with acids or decomposes slowly in contact with water or damp air, evolving phosphine, a spontaneously flammable and highly toxic gas. Reacts violently with oxidizing substances. Toxic if swallowed, by skin contact or by inhalation.	1397
1398	T1 BK2	TP33	F-G, S-N	Category A SW2 SW5 H1	SG26 SG32 SG35 SG36	In contact with water, caustic alkalis or acids, generates heat and evolves hydrogen, a flammable gas. May also evolve silanes, which are toxic and may ignite spontaneously.	1398
1400	T3	TP33	F-G, S-O	Category E H1	SG26 SG35	Readily decomposes in water and reacts violently with acids, evolving hydrogen, which may be ignited by the heat of the reaction. Harmful if swallowed or by dust inhalation.	1400
1401	T3	TP33	F-G, S-O	Category E H1	SG26 SG35	Readily decomposes in water and reacts violently with acids, evolving hydrogen, which may be ignited by the heat of the reaction.	1401
1402	–	–	F-G, S-N	Category B H1	SG26 SG35	Solid. In contact with water, rapidly evolves acetylene, a highly flammable gas, which may be ignited by the heat of the reaction. Acetylene forms highly explosive compounds with salts of some heavy metals. Reacts violently with acids.	1402
1402	T3	TP33	F-G, S-N	Category B H1	SG26 SG35	See entry above.	1402
1403	T1	TP33	F-G, S-N	Category A H1	SG26 SG35	Powder or granules. Contains calcium carbide as an impurity. In contact with water, evolves ammonia and acetylene, which is a highly flammable gas. Reacts vigorously with acids.	1403
1404	–	–	F-G, S-O	Category E H1	SG26 SG35	Solid. In contact with water, acids or moisture, evolves hydrogen, which may be ignited by the heat of the reaction.	1404
1405	T3	TP33	F-G, S-N	Category B SW5 H1	SG26 SG35	In contact with water, evolves hydrogen, a flammable gas. If calcium carbide is present as an impurity, acetylene will also be evolved. In contact with acids, evolves silane, a spontaneously flammable gas.	1405
1405	T1	TP33	F-G, S-N	Category B SW5 H1	SG26 SG35	See entry above.	1405
1407	–	–	F-G, S-N	Category D H1	SG26 SG35	White, ductile, soft metal. Reacts violently with moisture, water or acids, evolving hydrogen, which may be ignited by the heat of the reaction. Highly reactive, sometimes with explosive effect.	1407
1408	T1 BK2	TP33	F-G, S-N	Category A SW2 SW5 H1	SG26 SG35 SG36	In contact with moisture, water, alkalis or acids, may evolve hydrogen, a flammable gas, which may form explosive mixtures with air, and also arsine and phosphine, which are highly toxic gases. These gases are evolved in proportions which, under mechanically ventilated conditions, make the poison hazard by far predominant over the explosion hazard. The rate of gas evolution is greatest from freshly broken surfaces, so is liable to increase whenever the cargo is disturbed, such as during loading. Toxic if swallowed, by skin contact or by vapour inhalation.	1408
1409	–	–	F-G, S-L	Category D H1	SG26 SG35	Solids. React with water, moisture or acids, evolving hydrogen, which may be ignited by the heat of the reaction.	1409
1409	T3	TP33	F-G, S-L	Category D H1	SG26 SG35	See entry above.	1409
1410	–	–	F-G, S-M	Category E H1	SG26 SG35	White powder. In contact with water, acids or moisture, evolves hydrogen, which may be ignited by the heat of the reaction.	1410
1411	–	–	F-G, S-M	Category D SW2 H1	SG26	Clear, colourless solution of lithium aluminium hydride in ether. Reacts readily with water, evolving hydrogen, a flammable gas. Evaporates readily to leave a residue which is easily ignited by a spark or friction.	1411
1413	–	–	F-G, S-O	Category E H1	SG26 SG35	Crystalline, hygroscopic solid. In contact with water, acids or moisture, evolves hydrogen, which may be ignited by the heat of the reaction.	1413

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UN No.	Proper shipping name (PSN)	Class or division	Subsidiary risk(s)	Packing group	Special provisions	Limited and excepted quantity provisions		Packing		IBC	
						Limited quantities	Excepted quantities	Instructions	Provisions	Instructions	Provisions
(1)	(2) 3.1.2	(3) 2.0	(4) 2.0	(5) 2.0.1.3	(6) 3.3	(7a) 3.4	(7b) 3.5	(8) 4.1.4	(9) 4.1.4	(10) 4.1.4	(11) 4.1.4
1414	LITHIUM HYDRIDE	4.3	–	I	–	0	E0	P403	PP31	–	–
1415	LITHIUM	4.3	–	I	–	0	E0	P403	PP31	IBC04	B1
1417	LITHIUM SILICON	4.3	–	II	–	500 g	E2	P410	PP31 PP40	IBC07	B4 B21
1418	MAGNESIUM POWDER or MAGNESIUM ALLOYS POWDER	4.3	4.2	I	–	0	E0	P403	PP31	–	–
1418	MAGNESIUM POWDER or MAGNESIUM ALLOYS POWDER	4.3	4.2	II	–	0	E2	P410	PP31 PP40	IBC05	B21
1418	MAGNESIUM POWDER or MAGNESIUM ALLOYS POWDER	4.3	4.2	III	223	0	E1	P410	PP31	IBC08	B4
1419	MAGNESIUM ALUMINIUM PHOSPHIDE	4.3	6.1	I	–	0	E0	P403	PP31	–	–
1420	POTASSIUM METAL ALLOYS, LIQUID	4.3	–	I	–	0	E0	P402	PP31	–	–
1421	ALKALI METAL ALLOY, LIQUID, N.O.S.	4.3	–	I	182	0	E0	P402	PP31	–	–
1422	POTASSIUM SODIUM ALLOYS, LIQUID	4.3	–	I	–	0	E0	P402	PP31	–	–
1423	RUBIDIUM	4.3	–	I	–	0	E0	P403	PP31	IBC04	B1
1426	SODIUM BOROHYDRIDE	4.3	–	I	–	0	E0	P403	PP31	–	–
1427	SODIUM HYDRIDE	4.3	–	I	–	0	E0	P403	PP31	–	–
1428	SODIUM	4.3	–	I	–	0	E0	P403	PP31	IBC04	B1
1431	SODIUM METHYLATE	4.2	8	II	–	0	E2	P410	PP31	IBC05	B21

(12)	Portable tanks and bulk containers		EmS	Stowage and handling	Segregation	Properties and observations	UN No.
	Tank instructions	Provisions					
(13) 4.2.5 4.3	(14) 4.2.5	(15) 5.4.3.2 7.8	(16a) 7.1 7.3–7.7	(16b) 7.2–7.7	(17)	(18)	
–	–	–	F–G, S–N	Category E H1	SG26 SG35	Solid. In contact with water, acids or moisture, evolves hydrogen, which may be ignited by the heat of the reaction.	1414
–	T9	TP7 TP33	F–G, S–N	Category E H1	SG26 SG35	White, ductile, soft metal. Floats on water. Readily decomposes in water and reacts violently with acids, evolving hydrogen, which may be ignited by the heat of the reaction. For fire-fighting purposes, dry lithium chloride powder, dry sodium chloride or graphite powder should be carried on board when this substance is transported.	1415
–	T3	TP33	F–G, S–N	Category A SW5 H1	SG26	Shiny lumps, crystals or powder, with sharp irritating odour. Reacts readily with water, evolving hydrogen and silane, flammable gases. Enough heat may be generated to ignite the gas mixture in air.	1417
–	–	–	F–G, S–O	Category A H1	SG26 SG32 SG35	In contact with moisture, water or acids, evolves hydrogen, a flammable gas. Magnesium dust is easily ignited, causing explosion. May explode when in contact with oxidizing substances. For fire-fighting purposes, dry lithium chloride powder, dry sodium chloride or graphite powder should be carried on board when this substance is transported. Reacts with liquid halogenated hydrocarbons.	1418
–	T3	TP33	F–G, S–O	Category A H1	SG26 SG32 SG35	See entry above.	1418
–	T1	TP33	F–G, S–O	Category A H1	SG26 SG32 SG35	See entry above.	1418
–	–	–	F–G, S–N	Category E SW2 SW5 H1	SG26 SG35	Solid. Reacts with acids or decomposes slowly in contact with water or damp air, evolving phosphine, a spontaneously flammable and highly toxic gas. Reacts violently with oxidizing substances. Toxic if swallowed, by skin contact or by inhalation.	1419
–	–	–	F–G, S–L	Category D H1	SG26 SG35	Soft, silvery metal liquid. Floats on water. Reacts violently with moisture, water or acids, evolving hydrogen, which may be ignited by the heat of the reaction. Highly reactive, sometimes with explosive effect.	1420
–	–	–	F–G, S–L	Category D H1	SG26 SG35	Flows like mercury at ordinary temperatures. Not volatile. Reacts violently with moisture, water or acids, evolving hydrogen, a flammable gas, and developing considerable heat, which may ignite the gas.	1421
–	T9	TP3 TP7 TP31	F–G, S–L	Category D H1	SG26 SG35	Soft, silvery metal liquid. Floats on water. Reacts violently with moisture, water or acids, evolving hydrogen, which may be ignited by the heat of the reaction. Highly reactive, sometimes with explosive effect.	1422
–	–	–	F–G, S–N	Category D H1	SG26 SG35	Silvery-white, ductile, soft metal. Melting point: 39°C. Floats on water. Reacts violently with moisture, water or acids, evolving hydrogen, which may be ignited by the heat of the reaction. Highly reactive, sometimes with explosive effect.	1423
–	–	–	F–G, S–O	Category E H1	SG26 SG35	Crystalline powder. In contact with water, acids or moisture, evolves hydrogen, which may be ignited by the heat of the reaction.	1426
–	–	–	F–G, S–O	Category E H1	SG26 SG35	White powder. In contact with water, acids or moisture, evolves hydrogen, which may be ignited by the heat of the reaction.	1427
–	T9	TP7 TP33	F–G, S–N	Category D H1	SG26 SG35	White, ductile, soft metal. Floats on water. Reacts violently with moisture, water or acids, evolving hydrogen, which may be ignited by the heat of the reaction. Highly reactive, sometimes with explosive effect.	1428
–	T3	TP33	F–A, S–L	Category B	–	White, amorphous, free-flowing, hygroscopic powder. Decomposed by water to form methanol, a flammable liquid, which may be ignited by the heat of the reaction. Causes burns to skin, eyes and mucous membranes.	1431

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						Limited quantities (7a)	Excepted quantities (7b)	Instructions (8)	Provisions (9)	Instructions (10)	Provisions (11)
(1)	(2) 3.1.2	(3) 2.0	(4) 2.0	(5) 2.0.1.3	(6) 3.3	(7a) 3.4	(7b) 3.5	(8) 4.1.4	(9) 4.1.4	(10) 4.1.4	(11) 4.1.4
1432	SODIUM PHOSPHIDE	4.3	6.1	I	–	0	E0	P403	PP31	–	–
1433	STANNIC PHOSPHIDE	4.3	6.1	I	–	0	E0	P403	PP31	–	–
1435	ZINC ASHES	4.3	–	III	223 935	1 kg	E1	P002	PP100	IBC08	B4
1436	ZINC POWDER or ZINC DUST	4.3	4.2	I	–	0	E0	P403	PP31	–	–
1436	ZINC POWDER or ZINC DUST	4.3	4.2	II	–	0	E2	P410	PP31 PP40	IBC07	B21
1436	ZINC POWDER or ZINC DUST	4.3	4.2	III	223	0	E1	P410	PP31	IBC08	B4
1437	ZIRCONIUM HYDRIDE	4.1	–	II	–	1 kg	E2	P410	PP31 PP40	IBC04	–
1438	ALUMINIUM NITRATE	5.1	–	III	–	5 kg	E1	P002 LP02	–	IBC08	B3
1439	AMMONIUM DICHROMATE	5.1	–	II	–	1 kg	E2	P002	–	IBC08	B4 B21
1442	AMMONIUM PERCHLORATE	5.1	–	II	152	1 kg	E2	P002	–	IBC06	B21
1444	AMMONIUM PERSULPHATE	5.1	–	III	–	5 kg	E1	P002 LP02	–	IBC08	B3
1445	BARIUM CHLORATE, SOLID	5.1	6.1	II	–	1 kg	E2	P002	–	IBC06	B21
1446	BARIUM NITRATE	5.1	6.1	II	–	1 kg	E2	P002	–	IBC08	B4 B21
1447	BARIUM PERCHLORATE, SOLID	5.1	6.1	II	–	1 kg	E2	P002	–	IBC06	B21
1448	BARIUM PERMANGANATE	5.1	6.1	II	–	1 kg	E2	P002	–	IBC06	B21

UN No.	Portable tanks and bulk containers		EmS	Stowage and handling	Segregation	Properties and observations	UN No.
	Tank instructions (12)	Provisions (14)					
(1)	(13) 4.2.5 4.3	(14) 4.2.5	(15) 5.4.3.2 7.8	(16a) 7.1 7.3–7.7	(16b) 7.2–7.7	(17)	(18)
1432	–	–	F-G, S-N	Category E SW2 SW5 H1	SG26 SG35	Solid. Reacts with acids or decomposes slowly in contact with water or damp air, evolving phosphine, a spontaneously flammable and highly toxic gas. Reacts violently with oxidizing substances. Toxic if swallowed, by skin contact or by inhalation.	1432
1433	–	–	F-G, S-N	Category E SW2 SW5 H1	SG26 SG35	Silver-white solid. Reacts with acids or decomposes slowly in contact with water or damp air, evolving phosphine, a spontaneously flammable and highly toxic gas. Reacts violently with oxidizing substances. Toxic if swallowed, by skin contact or by inhalation.	1433
1435	T1 BK2	TP33	F-G, S-O	Category A H1	SG26	In contact with moisture or water, liable to evolve dangerous gases, including hydrogen, a flammable gas.	1435
1436	–	–	F-G, S-O	Category A H1	SG26 SG35 SG36	In contact with water, alkalis or acids, evolves hydrogen, a flammable gas. Zinc dust is easily ignited, causing explosion. May explode when in contact with oxidizing substances.	1436
1436	T3	TP33	F-G, S-O	Category A H1	SG26 SG35 SG36	See entry above.	1436
1436	T1	TP33	F-G, S-O	Category A H1	SG26 SG35 SG36	See entry above.	1436
1437	T3	TP33	F-A, S-G	Category E	–	Black coloured powder.	1437
1438	T1 BK2	TP33	F-A, S-Q	Category A	–	Colourless or white crystals. Deliquescent. Soluble in water. Slightly corrosive. Mixtures with combustible material are readily ignited and may burn fiercely. Harmful if swallowed.	1438
1439	T3	TP33	F-H, S-Q	Category A	SG75	Orange needles. Soluble in water. Mixtures with combustible material are readily ignited and may burn fiercely. May ignite spontaneously in contact with strong acids. Harmful if swallowed.	1439
1442	T3	TP33	F-H, S-Q	Category E	SG49 SG60	White crystals or powder. Soluble in water. When heated, decomposes readily, even with explosion, evolving toxic fumes. Forms highly explosive mixtures with combustible material or powdered metals. These mixtures are sensitive to friction and are liable to ignite.	1442
1444	T1	TP33	F-A, S-Q	Category A	–	White crystals or powder. Soluble in water. Mixtures with combustible material are sensitive to friction and are liable to ignite.	1444
1445	T3	TP33	F-H, S-Q	Category A	SG38 SG49	Colourless crystals or powder. Reacts vigorously with sulphuric acid. Reacts fiercely with cyanides when heated or by friction. May form explosive mixtures with combustible material, powdered metals or ammonium compounds. These mixtures are sensitive to friction and are liable to ignite. When involved in a fire, may cause an explosion. Toxic if swallowed, by skin contact or by dust inhalation.	1445
1446	T3	TP33	F-A, S-Q	Category A	–	White crystals. Mixtures with combustible material are readily ignited and may burn fiercely. Toxic if swallowed, by skin contact or by dust inhalation.	1446
1447	T3	TP33	F-H, S-Q	Category A	SG38 SG49	White crystals or powder, soluble in water. Reacts vigorously with sulphuric acid. Reacts fiercely with cyanides when heated or by friction. May form explosive mixtures with combustible material, powdered metals or ammonium compounds. These mixtures are sensitive to friction and are liable to ignite. When involved in a fire, may cause an explosion. Toxic if swallowed, by skin contact or by dust inhalation.	1447
1448	T3	TP33	F-H, S-Q	Category D	SG38 SG49 SG60	Brownish-violet crystals. Soluble in water. Reacts vigorously with sulphuric acid and hydrogen peroxide. Reacts fiercely with cyanides when heated or by friction. May form explosive mixtures with combustible material, powdered metals or ammonium compounds. These mixtures are sensitive to friction and are liable to ignite. When involved in a fire, may cause an explosion. Toxic if swallowed, by skin contact or by dust inhalation.	1448

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UN No.	Proper shipping name (PSN)	Class or division	Subsidiary risk(s)	Packing group	Special provisions	Limited and excepted quantity provisions		Packing		IBC	
						Limited quantities	Excepted quantities	Instructions	Provisions	Instructions	Provisions
(1)	(2) 3.1.2	(3) 2.0	(4) 2.0	(5) 2.0.1.3	(6) 3.3	(7a) 3.4	(7b) 3.5	(8) 4.1.4	(9) 4.1.4	(10) 4.1.4	(11) 4.1.4
1449	BARIUM PEROXIDE	5.1	6.1	II	–	1 kg	E2	P002	PP100	IBC06	B21
1450	BROMATES, INORGANIC, N.O.S.	5.1	–	II	274 350	1 kg	E2	P002	–	IBC08	B4 B21
1451	CAESIUM NITRATE	5.1	–	III	–	5 kg	E1	P002 LP02	–	IBC08	B3
1452	CALCIUM CHLORATE	5.1	–	II	–	1 kg	E2	P002	–	IBC08	B4 B21
1453	CALCIUM CHLORITE	5.1	–	II	–	1 kg	E2	P002	–	IBC08	B4 B21
1454	CALCIUM NITRATE	5.1	–	III	208 967	5 kg	E1	P002 LP02	–	IBC08	B3
1455	CALCIUM PERCHLORATE	5.1	–	II	–	1 kg	E2	P002	–	IBC06	B21
1456	CALCIUM PERMANGANATE	5.1	–	II	–	1 kg	E2	P002	–	IBC06	B21
1457	CALCIUM PEROXIDE	5.1	–	II	–	1 kg	E2	P002	PP100	IBC06	B21
1458	CHLORATE AND BORATE MIXTURE	5.1	–	II	–	1 kg	E2	P002	–	IBC08	B4 B21
1458	CHLORATE AND BORATE MIXTURE	5.1	–	III	223	5 kg	E1	P002 LP02	–	IBC08	B3
1459	CHLORATE AND MAGNESIUM CHLORIDE MIXTURE, SOLID	5.1	–	II	–	1 kg	E2	P002	–	IBC08	B4 B21
1459	CHLORATE AND MAGNESIUM CHLORIDE MIXTURE, SOLID	5.1	–	III	223	5 kg	E1	P002 LP02	–	IBC08	B3

(12)	Portable tanks and bulk containers		EmS	Stowage and handling	Segregation	Properties and observations	UN No.
	Tank instructions	Provisions					
(13) 4.2.5 4.3	(14) 4.2.5	(15) 5.4.3.2 7.8	(16a) 7.1 7.3–7.7	(16b) 7.2–7.7	(17)	(18)	
–	T3	TP33	F-G, S-Q	Category C H1	SG16 SG26 SG35 SG59	White powder. Particularly if wetted with small quantities of water, a mixture with combustible material may ignite following impact or friction. When involved in a fire, or in contact with water or acids, decomposes, evolving oxygen. Toxic if swallowed, by skin contact or by dust inhalation.	1449
–	T3	TP33	F-H, S-Q	Category A	SG38 SG49	Solids. React vigorously with sulphuric acid. React fiercely with cyanides when heated or by friction, and may form explosive mixtures with combustible material, powdered metals or ammonium compounds. These mixtures are sensitive to friction and are liable to ignite. When involved in a fire, may cause an explosion. Transport of ammonium bromate and mixtures of a bromate with an ammonium salt is prohibited .	1450
–	T1	TP33	F-A, S-Q	Category A	–	White powder. Mixtures with combustible material are readily ignited and may burn fiercely. Harmful if swallowed.	1451
–	T3	TP33	F-H, S-Q	Category A	SG38 SG49	White to yellowish deliquescent crystals. Soluble in water. Reacts vigorously with sulphuric acid. Reacts fiercely with cyanides when heated or by friction. May form explosive mixtures with combustible material, powdered metals or ammonium compounds. These mixtures are sensitive to friction and are liable to ignite. When involved in a fire, may cause an explosion.	1452
–	T3	TP33	F-H, S-Q	Category A	SG38 SG49	White deliquescent crystals. Soluble in water. Sensitive to heat. Reacts vigorously with sulphuric acid. Reacts fiercely with cyanides when heated or by friction. May form explosive mixtures with combustible material, powdered metals or ammonium compounds. These mixtures are sensitive to friction and are liable to ignite. When involved in a fire, may cause an explosion.	1453
–	T1 BK2 BK3	TP33	F-A, S-Q	Category A SW23	–	White deliquescent solid, soluble in water. Mixtures with combustible material are readily ignited and may burn fiercely. Harmful if swallowed.	1454
–	T3	TP33	F-H, S-Q	Category A	SG38 SG49	White crystals or powder. Reacts vigorously with sulphuric acid. Reacts fiercely with cyanides when heated or by friction. May form explosive mixtures with combustible material, powdered metals or ammonium compounds. These mixtures are sensitive to friction and are liable to ignite. When involved in a fire, may cause an explosion.	1455
–	T3	TP33	F-H, S-Q	Category D	SG38 SG49 SG60	Violet deliquescent crystals. Soluble in water. Occurs in hydrated form. Reacts vigorously with sulphuric acid and hydrogen peroxide. Reacts fiercely with cyanides when heated or by friction. May form explosive mixtures with combustible material, powdered metals or ammonium compounds. These mixtures are sensitive to friction and are liable to ignite. When involved in a fire, may cause an explosion.	1456
–	T3	TP33	F-G, S-Q	Category C H1	SG16 SG26 SG35 SG59	White or yellowish powder. Particularly if wetted with small quantities of water, a mixture with combustible material may ignite following impact or friction. When involved in a fire, or on contact with water or acids, decomposes, evolving oxygen.	1457
–	T3	TP33	F-H, S-Q	Category A	SG38 SG49	Solid. Reacts vigorously with sulphuric acid. Reacts fiercely with cyanides when heated or by friction. May form explosive mixtures with combustible material, powdered metals or ammonium compounds. These mixtures are sensitive to friction and are liable to ignite. When involved in a fire, may cause an explosion.	1458
–	T1	TP33	F-H, S-Q	Category A	SG38 SG49	See entry above.	1458
–	T3	TP33	F-H, S-Q	Category A	SG38 SG49	Deliquescent solid. Reacts vigorously with sulphuric acid. Reacts fiercely with cyanides when heated or by friction. May form explosive mixtures with combustible material, powdered metals or ammonium compounds. These mixtures are sensitive to friction and are liable to ignite. When involved in a fire, may cause an explosion.	1459
–	T1	TP33	F-H, S-Q	Category A	SG38 SG49	See entry above.	1459

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						Limited quantities	Excepted quantities	Instructions	Provisions	Instructions	Provisions
(1)	(2) 3.1.2	(3) 2.0	(4) 2.0	(5) 2.0.1.3	(6) 3.3	(7a) 3.4	(7b) 3.5	(8) 4.1.4	(9) 4.1.4	(10) 4.1.4	(11) 4.1.4
1461	CHLORATES, INORGANIC, N.O.S.	5.1	–	II	274 351	1 kg	E2	P002	–	IBC06	B21
1462	CHLORITES, INORGANIC, N.O.S.	5.1	–	II	274 352	1 kg	E2	P002	–	IBC06	B21
1463	CHROMIUM TRIOXIDE, ANHYDROUS	5.1	6.1 8	II	–	1 kg	E2	P002	PP31	IBC08	B4 B21
1465	DIDYMIUM NITRATE	5.1	–	III	–	5 kg	E1	P002 LP02	–	IBC08	B3
1466	FERRIC NITRATE	5.1	–	III	–	5 kg	E1	P002 LP02	–	IBC08	B3
1467	GUANIDINE NITRATE	5.1	–	III	–	5 kg	E1	P002 LP02	–	IBC08	B3
1469	LEAD NITRATE	5.1	6.1 P	II	–	1 kg	E2	P002	–	IBC08	B4 B21
1470	LEAD PERCHLORATE, SOLID	5.1	6.1 P	II	–	1 kg	E2	P002	–	IBC06	B21
1471	LITHIUM HYPOCHLORITE, DRY or LITHIUM HYPOCHLORITE MIXTURE	5.1	–	II	–	1 kg	E2	P002	–	IBC08	B4 B21
1471	LITHIUM HYPOCHLORITE, DRY or LITHIUM HYPOCHLORITE MIXTURE	5.1	–	III	223	5 kg	E1	P002 LP02	–	IBC08	B3
1472	LITHIUM PEROXIDE	5.1	–	II	–	1 kg	E2	P002	PP100	IBC06	B21
1473	MAGNESIUM BROMATE	5.1	–	II	–	1 kg	E2	P002	–	IBC08	B4 B21

UN No.	Portable tanks and bulk containers		EmS	Stowage and handling	Segregation	Properties and observations	UN No.
	Tank instructions	Provisions					
(12)	(13) 4.2.5 4.3	(14) 4.2.5	(15) 5.4.3.2 7.8	(16a) 7.1 7.3–7.7	(16b) 7.2–7.7	(17)	(18)
–	T3	TP33	F-H, S-Q	Category A	SG38 SG49	Solids. React vigorously with sulphuric acid. React fiercely with cyanides when heated or by friction. May form explosive mixtures with combustible material, powdered metals or ammonium compounds. These mixtures are sensitive to friction and are liable to ignite. When involved in a fire, may cause an explosion. Transport of ammonium chlorate and mixtures of a chlorate with an ammonium salt is prohibited.	1461
–	T3	TP33	F-H, S-Q	Category A	SG38 SG49	Solids. React vigorously with sulphuric acid. React fiercely with cyanides when heated or by friction. May form explosive mixtures with combustible material, powdered metals or ammonium compounds. These mixtures are sensitive to friction and are liable to ignite. When involved in a fire, may cause an explosion. Transport of ammonium chlorite and mixtures of a chlorite with an ammonium salt is prohibited.	1462
–	T3	TP33	F-A, S-Q	Category A	SG6 SG16 SG19	Dark purplish-red deliquescent crystals. Soluble in water. Mixtures with combustible material may ignite spontaneously and may even explode. In the presence of moisture, corrosive to most metals. Causes burns to skin, eyes and mucous membranes.	1463
–	T1	TP33	F-A, S-Q	Category A	–	Hygroscopic solid. Mixture of neodymium nitrate and praseodymium nitrate. Mixtures with combustible material are readily ignited and may burn fiercely. Harmful if swallowed.	1465
–	T1	TP33	F-A, S-Q	Category A	–	Violet deliquescent crystals. Soluble in water. Melting point: 47°C. Mixtures with combustible material are readily ignited and may burn fiercely. Solutions in water are slightly corrosive to most metals. Harmful if swallowed.	1466
–	T1	TP33	F-A, S-Q	Category A	SG45	White granules. Soluble in water. Mixtures with combustible material are sensitive to friction and are liable to ignite. NITROGUANIDINE is a different substance.	1467
–	T3	TP33	F-A, S-Q	Category A	–	White crystals. Soluble in water. Mixtures with combustible material are readily ignited and may burn fiercely. Toxic if swallowed, by skin contact or by dust inhalation.	1469
–	T3	TP33	F-H, S-Q	Category A	SG38 SG49	White crystals or powder. Soluble in water. Reacts vigorously with sulphuric acid. Reacts fiercely with cyanides when heated or by friction. May form explosive mixtures with combustible material, powdered metals or ammonium compounds. These mixtures are sensitive to friction and are liable to ignite. When involved in a fire, may cause an explosion. Toxic if swallowed, by skin contact or by dust inhalation.	1470
–	T3	TP33	F-H, S-Q	Category A SW1 SW8	SG35 SG38 SG49 SG53 SG60	White powder with pungent odour. Soluble in water. Critical ambient temperature of decomposition may be as low as 60°C. May cause fire in contact with organic material or ammonium compounds. Reacts with acids, evolving chlorine, an irritating, corrosive and toxic gas. In the presence of moisture, corrosive to most metals. Dust irritates mucous membranes.	1471
–	T1	TP33	F-H, S-Q	Category A SW1 SW8	SG35 SG38 SG49 SG53 SG60	See entry above.	1471
–	T3	TP33	F-G, S-Q	Category C H1	SG16 SG26 SG35 SG59	White powder. Soluble in water. Solution in water is an alkaline corrosive liquid. Particularly if wetted with small quantities of water, a mixture with combustible material may ignite following impact or friction. When involved in a fire, or in contact with water or acids, decomposes, evolving oxygen.	1472
–	T3	TP33	F-H, S-Q	Category A	SG38 SG49	White deliquescent crystals or crystalline powder. Soluble in water. Reacts vigorously with sulphuric acid. Reacts fiercely with cyanides when heated or by friction. May form explosive mixtures with combustible material, powdered metals or ammonium compounds. These mixtures are sensitive to friction and are liable to ignite. When involved in a fire, may cause an explosion.	1473

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						Limited quantities	Excepted quantities	Instructions	Provisions	Instructions	Provisions
(1)	(2)	(3)	(4)	(5)	(6)	(7a)	(7b)	(8)	(9)	(10)	(11)
	3.1.2	2.0	2.0	2.0.1.3	3.3	3.4	3.5	4.1.4	4.1.4	4.1.4	4.1.4
1474	MAGNESIUM NITRATE	5.1	–	III	332 967	5 kg	E1	P002 LP02	–	IBC08	B3
1475	MAGNESIUM PERCHLORATE	5.1	–	II	–	1 kg	E2	P002	–	IBC06	B21
1476	MAGNESIUM PEROXIDE	5.1	–	II	–	1 kg	E2	P002	PP100	IBC06	B21
1477	NITRATES, INORGANIC, N.O.S.	5.1	–	II	–	1 kg	E2	P002	–	IBC08	B4 B21
1477	NITRATES, INORGANIC, N.O.S.	5.1	–	III	223	5 kg	E1	P002 LP02	–	IBC08	B3
1479	OXIDIZING SOLID, N.O.S.	5.1	–	I	274 900	0	E0	P503	–	IBC05	B1
1479	OXIDIZING SOLID, N.O.S.	5.1	–	II	274 900	1 kg	E2	P002	–	IBC08	B4 B21
1479	OXIDIZING SOLID, N.O.S.	5.1	–	III	223 274 900	5 kg	E1	P002 LP02	–	IBC08	B3
1481	PERCHLORATES, INORGANIC, N.O.S.	5.1	–	II	–	1 kg	E2	P002	–	IBC06	B21
1481	PERCHLORATES, INORGANIC, N.O.S.	5.1	–	III	223	5 kg	E1	P002 LP02	–	IBC08	B3
1482	PERMANGANATES, INORGANIC, N.O.S.	5.1	–	II	274 353	1 kg	E2	P002	–	IBC06	B21
1482	PERMANGANATES, INORGANIC, N.O.S.	5.1	–	III	223 274 353	5 kg	E1	P002	–	IBC08	B3
1483	PEROXIDES, INORGANIC, N.O.S.	5.1	–	II	–	1 kg	E2	P002	PP100	IBC06	B21
1483	PEROXIDES, INORGANIC, N.O.S.	5.1	–	III	223	5 kg	E1	P002 LP02	PP100 L3	IBC08	B4

UN No.	Portable tanks and bulk containers		EmS	Stowage and handling	Segregation	Properties and observations	UN No.
	Tank instructions	Provisions					
(12)	(13)	(14)	(15)	(16a)	(16b)	(17)	(18)
	4.2.5 4.3	4.2.5	5.4.3.2 7.8	7.1 7.3–7.7	7.2–7.7		
–	T1 BK2 BK3	TP33	F-A, S-Q	Category A SW23	–	White deliquescent crystals, soluble in water. Mixtures with combustible material are readily ignited and may burn fiercely. Harmful if swallowed.	1474
–	T3	TP33	F-H, S-Q	Category A	SG38 SG49	White crystals or powder. Reacts vigorously with sulphuric acid. Reacts fiercely with cyanides when heated or by friction. May form explosive mixtures with combustible material, powdered metals or ammonium compounds. These mixtures are sensitive to friction and are liable to ignite. When involved in a fire, may cause an explosion.	1475
–	T3	TP33	F-G, S-Q	Category C H1	SG16 SG26 SG35 SG59	White powder. Particularly if wetted with small quantities of water, a mixture with combustible material may ignite following impact or friction. When involved in a fire, or in contact with water or acids, decomposes, evolving oxygen. Harmful if swallowed.	1476
–	T3	TP33	F-A, S-Q	Category A	SG38 SG49	Solids. Solid mixtures with combustible material are readily ignited and may burn fiercely. Harmful if swallowed.	1477
–	T1	TP33	F-A, S-Q	Category A	SG38 SG49	See entry above.	1477
–	–	–	F-A, S-Q	Category D	SG38 SG49 SG60 SG61	–	1479
–	T3	TP33	F-A, S-Q	Category B	SG38 SG49 SG60 SG61	–	1479
–	T1	TP33	F-A, S-Q	Category B	SG38 SG49 SG60 SG61	–	1479
–	T3	TP33	F-H, S-Q	Category A	SG38 SG49	Solids. React vigorously with sulphuric acid. React fiercely with cyanides when heated or by friction. May form explosive mixtures with combustible material, powdered metals or ammonium compounds. These mixtures are sensitive to friction and are liable to ignite. When involved in a fire, may cause an explosion.	1481
–	T1	TP33	F-H, S-Q	Category A	SG38 SG49	See entry above.	1481
–	T3	TP33	F-H, S-Q	Category D	SG38 SG49 SG60	Solids. React vigorously with sulphuric acid. React fiercely with cyanides when heated or by friction. May form explosive mixtures with combustible material, powdered metals or ammonium compounds. These mixtures are sensitive to friction and are liable to ignite. When involved in a fire, may cause an explosion. Transport of ammonium permanganate and mixtures of a permanganate with an ammonium salt is prohibited .	1482
–	T1	TP33	F-H, S-Q	Category D	SG38 SG49 SG60	See entry above.	1482
–	T3	TP33	F-G, S-Q	Category C H1	SG16 SG26 SG35 SG59	Particularly if wetted with small quantities of water, a mixture with combustible material may ignite following impact or friction. When involved in a fire, or in contact with water or acids, decomposes, evolving oxygen.	1483
–	T1	TP33	F-G, S-Q	Category C H1	SG16 SG26 SG35 SG59	See entry above.	1483

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						Limited quantities	Excepted quantities	Instructions	Provisions	Instructions	Provisions
(1)	(2) 3.1.2	(3) 2.0	(4) 2.0	(5) 2.0.1.3	(6) 3.3	(7a) 3.4	(7b) 3.5	(8) 4.1.4	(9) 4.1.4	(10) 4.1.4	(11) 4.1.4
1484	POTASSIUM BROMATE	5.1	–	II	–	1 kg	E2	P002	–	IBC08	B4 B21
1485	POTASSIUM CHLORATE	5.1	–	II	–	1 kg	E2	P002	–	IBC08	B4 B21
1486	POTASSIUM NITRATE	5.1	–	III	964 967	5 kg	E1	P002 LP02	–	IBC08	B3
1487	POTASSIUM NITRATE AND SODIUM NITRITE MIXTURE	5.1	–	II	–	1 kg	E2	P002	–	IBC08	B4 B21
1488	POTASSIUM NITRITE	5.1	–	II	–	1 kg	E2	P002	–	IBC08	B4 B21
1489	POTASSIUM PERCHLORATE	5.1	–	II	–	1 kg	E2	P002	–	IBC06	B21
1490	POTASSIUM PERMANGANATE	5.1	–	II	–	1 kg	E2	P002	–	IBC08	B4 B21
1491	POTASSIUM PEROXIDE	5.1	–	I	–	0	E0	P503	–	IBC06	B1
1492	POTASSIUM PERSULPHATE	5.1	–	III	–	5 kg	E1	P002 LP02	–	IBC08	B3
1493	SILVER NITRATE	5.1	–	II	–	1 kg	E2	P002	–	IBC08	B4 B21
1494	SODIUM BROMATE	5.1	–	II	–	1 kg	E2	P002	–	IBC08	B4 B21
1495	SODIUM CHLORATE	5.1	–	II	–	1 kg	E2	P002	–	IBC08	B4 B21

(12)	Portable tanks and bulk containers		EmS	Stowage and handling	Segregation	Properties and observations	UN No.
	Tank instructions	Provisions					
(13) 4.2.5 4.3	(14) 4.2.5	(15) 5.4.3.2 7.8	(16a) 7.1 7.3–7.7	(16b) 7.2–7.7	(17)	(18)	
–	T3	TP33	F-H, S-Q	Category A	SG38 SG49	White crystals or powder. Soluble in water. Reacts vigorously with sulphuric acid. Reacts fiercely with cyanides when heated or by friction. May form explosive mixtures with combustible materials, powdered metals or ammonium compounds. These mixtures are sensitive to friction and are liable to ignite. When involved in a fire, may cause an explosion.	1484
–	T3	TP33	F-H, S-Q	Category A	SG38 SG49	White crystals or powder. Soluble in water. Reacts vigorously with sulphuric acid. Reacts fiercely with cyanides when heated or by friction. May form explosive mixtures with combustible material, powdered metals or ammonium compounds. These mixtures are sensitive to friction and are liable to ignite. When involved in a fire, may cause an explosion.	1485
–	T1 BK2 BK3	TP33	F-A, S-Q	Category A SW23	–	White crystals or powder. Soluble in water. Mixtures with combustible material are readily ignited and may burn fiercely. Harmful if swallowed.	1486
–	T3	TP33	F-A, S-Q	Category A	SG38 SG49	Deliquescent solid. Soluble in water. May cause fire in contact with organic material such as wood, cotton or straw. Mixtures with ammonium compounds or cyanides may explode. Harmful if swallowed. May be shipped in the form of fused solid block or lumps.	1487
–	T3	TP33	F-A, S-Q	Category A	SG38 SG49	White or slightly yellowish deliquescent crystals or sticks. Soluble in water. Mixtures with combustible material are readily ignited and may burn fiercely. Mixtures with ammonium compounds or cyanides may explode. Harmful if swallowed.	1488
–	T3	TP33	F-H, S-Q	Category A	SG38 SG49	White crystals or powder, soluble in water. Reacts vigorously with sulphuric acid. Reacts fiercely with cyanides when heated or by friction. May form explosive mixtures with combustible material, powdered metals or ammonium compounds. These mixtures are sensitive to friction and are liable to ignite. When involved in a fire, may cause an explosion.	1489
–	T3	TP33	F-H, S-Q	Category D	SG38 SG49 SG60	Dark purple crystals or powder. Soluble in water. Reacts vigorously with sulphuric acid and hydrogen peroxide. Reacts fiercely with cyanides when heated or by friction. May form explosive mixtures with combustible material, powdered metals or ammonium compounds. These mixtures are sensitive to friction and are liable to ignite. When involved in a fire, may cause an explosion.	1490
–	–	–	F-G, S-Q	Category C H1	SG16 SG26 SG35 SG59	Yellow powder. Particularly if wetted with small quantities of water, a mixture with combustible material may ignite, following impact or friction. When involved in a fire, or in contact with water or acids, decomposes, evolving oxygen. Highly irritating to skin, eyes and mucous membranes.	1491
–	T1	TP33	F-A, S-Q	Category A	SG39 SG49	White crystals or powder. Soluble in water. Mixtures with combustible material are sensitive to friction and are liable to ignite. Reacts fiercely with cyanides when heated or by friction. May form explosive mixture with powdered metals or ammonium compounds.	1492
–	T3	TP33	F-A, S-Q	Category A	–	Colourless crystals. Soluble in water. Mixtures with combustible material are readily ignited and may burn fiercely. Harmful if swallowed. Irritating to skin and mucous membranes.	1493
–	T3	TP33	F-H, S-Q	Category A	SG38 SG49	White deliquescent crystals. Soluble in water. Reacts vigorously with sulphuric acid. Reacts fiercely with cyanides when heated or by friction. May form explosive mixtures with combustible material, powdered metals or ammonium compounds. These mixtures are sensitive to friction and are liable to ignite. When involved in a fire, may cause an explosion.	1494
–	T3 BK2	TP33	F-H, S-Q	Category A	SG38 SG49	Colourless deliquescent crystals. Soluble in water. Reacts vigorously with sulphuric acid. Reacts fiercely with cyanides when heated or by friction. May form explosive mixtures with combustible material, powdered metals or ammonium compounds. These mixtures are sensitive to friction and are liable to ignite. When involved in a fire, may cause an explosion.	1495

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						Limited quantities	Excepted quantities	Instructions	Provisions	Instructions	Provisions
(1)	(2) 3.1.2	(3) 2.0	(4) 2.0	(5) 2.0.1.3	(6) 3.3	(7a) 3.4	(7b) 3.5	(8) 4.1.4	(9) 4.1.4	(10) 4.1.4	(11) 4.1.4
1496	SODIUM CHLORITE	5.1	–	II	–	1 kg	E2	P002	–	IBC08	B4 B21
1498	SODIUM NITRATE	5.1	–	III	964 967	5 kg	E1	P002 LP02	–	IBC08	B3
1499	SODIUM NITRATE AND POTASSIUM NITRATE MIXTURE	5.1	–	III	964 967	5 kg	E1	P002 LP02	–	IBC08	B3
1500	SODIUM NITRITE	5.1	6.1	III	–	5 kg	E1	P002	–	IBC08	B3
1502	SODIUM PERCHLORATE	5.1	–	II	–	1 kg	E2	P002	–	IBC06	B21
1503	SODIUM PERMANGANATE	5.1	–	II	–	1 kg	E2	P002	–	IBC06	B21
1504	SODIUM PEROXIDE	5.1	–	I	–	0	E0	P503	–	IBC05	B1
1505	SODIUM PERSULPHATE	5.1	–	III	–	5 kg	E1	P002 LP02	–	IBC08	B3
1506	STRONTIUM CHLORATE	5.1	–	II	–	1 kg	E2	P002	–	IBC08	B4 B21
1507	STRONTIUM NITRATE	5.1	–	III	–	5 kg	E1	P002 LP02	–	IBC08	B3
1508	STRONTIUM PERCHLORATE	5.1	–	II	–	1 kg	E2	P002	–	IBC06	B21
1509	STRONTIUM PEROXIDE	5.1	–	II	–	1 kg	E2	P002	PP100	IBC06	B21

(12)	Portable tanks and bulk containers		EmS	Stowage and handling	Segregation	Properties and observations	UN No.
	Tank instructions	Provisions					
(13) 4.2.5 4.3	(14) 4.2.5	(15) 5.4.3.2 7.8	(16a) 7.1 7.3–7.7	(16b) 7.2–7.7	(17)	(18)	
–	T3	TP33	F-H, S-Q	Category A	SG38 SG49	Colourless deliquescent solid. Soluble in water. Reacts vigorously with sulphuric acid. Reacts fiercely with cyanides when heated or by friction. May form explosive mixtures with combustible material, powdered metals or ammonium compounds. These mixtures are sensitive to friction and are liable to ignite. When involved in a fire, may cause an explosion.	1496
–	T1 BK2 BK3	TP33	F-A, S-Q	Category A SW23	–	Colourless deliquescent solid. Soluble in water. Mixtures with combustible material are readily ignited and may burn fiercely. Harmful if swallowed. This substance in the impure form is known as Chile Saltpetre.	1498
–	T1 BK2 BK3	TP33	F-A, S-Q	Category A SW23	–	Colourless, hygroscopic solid. Soluble in water. Mixtures with combustible material are readily ignited and may burn fiercely. Harmful if swallowed. Mixture prepared as a fertilizer.	1499
–	T1	TP33	F-A, S-Q	Category A	SG38 SG49	Colourless deliquescent solid. Soluble in water. Mixtures with combustible material are readily ignited and may burn fiercely. Mixtures with ammonium compounds or cyanides may explode. Decomposes if heated, giving off toxic nitrous fumes and gases supporting combustion. Harmful if swallowed or by dust inhalation.	1500
–	T3	TP33	F-H, S-Q	Category A	SG38 SG49	Colourless crystals or powder, soluble in water. Reacts vigorously with sulphuric acid. Reacts fiercely with cyanides when heated or by friction. May form explosive mixtures with combustible material, powdered metals or ammonium compounds. These mixtures are sensitive to friction and are liable to ignite. When involved in a fire, may cause an explosion.	1502
–	T3	TP33	F-H, S-Q	Category D	SG38 SG49 SG60	Red crystals or powder. Soluble in water. Reacts vigorously with sulphuric acid and hydrogen peroxide. Reacts fiercely with cyanides when heated or by friction. May form explosive mixtures with combustible material, powdered metals or ammonium compounds. These mixtures are sensitive to friction and are liable to ignite. When involved in a fire, may cause an explosion.	1503
–	–	–	F-G, S-Q	Category C H1	SG16 SG26 SG35 SG59	Pale yellow coarse powder or granules. Particularly if wetted with small quantities of water, a mixture with combustible material may ignite, following impact or friction. When involved in a fire, or in contact with water or acids, decomposes, evolving oxygen. Highly irritating to skin, eyes and mucous membranes.	1504
–	T1	TP33	F-A, S-Q	Category A	SG39 SG49	Colourless crystals or powder. Soluble in water. Mixtures with combustible material are sensitive to friction and are liable to ignite. Reacts fiercely with cyanides when heated or by friction. May form explosive mixture with powdered metals or ammonium compounds.	1505
–	T3	TP33	F-H, S-Q	Category A	SG38 SG49	Colourless deliquescent solid, soluble in water. Reacts vigorously with sulphuric acid. Reacts fiercely with cyanides when heated or by friction. May form explosive mixtures with combustible material, powdered metals or ammonium compounds. These mixtures are sensitive to friction and are liable to ignite. When involved in a fire, may cause an explosion.	1506
–	T1	TP33	F-A, S-Q	Category A	–	Colourless solid. Soluble in water. Mixtures with combustible material are readily ignited and may burn fiercely. Harmful if swallowed.	1507
–	T3	TP33	F-H, S-Q	Category A	SG38 SG49	Colourless crystals or powder, soluble in water. Reacts vigorously with sulphuric acid. Reacts fiercely with cyanides when heated or by friction. May form explosive mixtures with combustible material, powdered metals or ammonium compounds. These mixtures are sensitive to friction and are liable to ignite. When involved in a fire, may cause an explosion.	1508
–	T3	TP33	F-G, S-Q	Category C H1	SG16 SG26 SG35 SG59	Colourless powder. Particularly if wetted with small quantities of water, a mixture with combustible materials may ignite following impact or friction. When involved in a fire, or in contact with water or acids, decomposes, evolving oxygen.	1509

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UN No.	Proper shipping name (PSN)	Class or division	Subsidiary risk(s)	Packing group	Special provisions	Limited and excepted quantity provisions		Packing		IBC	
						Limited quantities	Excepted quantities	Instructions	Provisions	Instructions	Provisions
(1)	(2) 3.1.2	(3) 2.0	(4) 2.0	(5) 2.0.1.3	(6) 3.3	(7a) 3.4	(7b) 3.5	(8) 4.1.4	(9) 4.1.4	(10) 4.1.4	(11) 4.1.4
1510	TETRANITROMETHANE	6.1	5.1	I	354	0	E0	P602	-	-	-
1511	UREA HYDROGEN PEROXIDE	5.1	8	III	-	5 kg	E1	P002	-	IBC08	B3
1512	ZINC AMMONIUM NITRITE	5.1	-	-	900	-	-	-	-	-	-
1513	ZINC CHLORATE	5.1	-	II	-	1 kg	E2	P002	-	IBC08	B4 B21
1514	ZINC NITRATE	5.1	-	II	-	1 kg	E2	P002	-	IBC08	B4 B21
1515	ZINC PERMANGANATE	5.1	-	II	-	1 kg	E2	P002	-	IBC06	B21
1516	ZINC PEROXIDE	5.1	-	II	-	1 kg	E2	P002	PP100	IBC06	B21
1517	ZIRCONIUM PICRAMATE, WETTED with not less than 20% water, by mass	4.1	-	I	28	0	E0	P406	PP26 PP31	-	-
1541	ACETONE CYANOHYDRIN, STABILIZED	6.1	- P	I	354	0	E0	P602	-	-	-
1544	ALKALOIDS, SOLID, N.O.S. or ALKALOIDS SALTS, SOLID, N.O.S.	6.1	-	I	43 274	0	E5	P002	-	IBC07	B1
1544	ALKALOIDS, SOLID, N.O.S. or ALKALOIDS SALTS, SOLID, N.O.S.	6.1	-	II	43 274	500 g	E4	P002	-	IBC08	B4 B21
1544	ALKALOIDS, SOLID, N.O.S. or ALKALOIDS SALTS, SOLID, N.O.S.	6.1	-	III	43 223 274	5 kg	E1	P002 LP02	-	IBC08	B3
1545	ALLYL ISOTHIOCYANATE, STABILIZED	6.1	3	II	386	100 mL	E0	P001	-	IBC02	-
1546	AMMONIUM ARSENATE	6.1	-	II	-	500 g	E4	P002	-	IBC08	B4 B21
1547	ANILINE	6.1	- P	II	279	100 mL	E4	P001	-	IBC02	-
1548	ANILINE HYDROCHLORIDE	6.1	-	III	-	5 kg	E1	P002 LP02	-	IBC08	B3
1549	ANTIMONY COMPOUND, INORGANIC, SOLID, N.O.S.	6.1	-	III	45 274	5 kg	E1	P002 LP02	-	IBC08	B3

UN No.	Portable tanks and bulk containers		EmS	Stowage and handling	Segregation	Properties and observations	UN No.
	Tank instructions	Provisions					
(12)	(13) 4.2.5 4.3	(14) 4.2.5	(15) 5.4.3.2 7.8	(16a) 7.1 7.3-7.7	(16b) 7.2-7.7	(17)	(18)
-	-	-	F-H, S-Q	Category D SW2	SG16	Colourless liquid with a pungent odour. Freezing point: 12.5°C. Insoluble in water. Mixtures with combustible material are readily ignited, burn fiercely and may also explode by friction or shock. Highly toxic if swallowed, by skin contact or by inhalation.	1510
-	T1	TP33	F-A, S-Q	Category A H1	-	White crystals or powder. Soluble in water. Mixtures with combustible material are sensitive to friction and are liable to ignite. Irritating to skin, eyes and mucous membranes.	1511
-	-	-	-	-	-	Transport is prohibited.	1512
-	T3	TP33	F-H, S-Q	Category A	SG38 SG49	Colourless or yellowish crystals. Soluble in water. Reacts vigorously with sulphuric acid. Reacts fiercely with cyanides when heated or by friction. May form explosive mixtures with combustible material, powdered metals or ammonium compounds. These mixtures are sensitive to friction and are liable to ignite. When involved in a fire, may cause an explosion.	1513
-	T3	TP33	F-H, S-Q	Category A	-	Colourless solid. Soluble in water. Melting point: 36°C. Mixtures with combustible material are readily ignited and may burn fiercely. Solutions in water are slightly corrosive. Harmful if swallowed.	1514
-	T3	TP33	F-H, S-Q	Category D	SG38 SG49 SG60	Violet-brown or black crystals or powder. Soluble in water. Reacts vigorously with sulphuric acid and hydrogen peroxide. Reacts fiercely with cyanides when heated or by friction. May form explosive mixtures with combustible material, powdered metals or ammonium compounds. These mixtures are sensitive to friction and are liable to ignite. When involved in a fire, may cause an explosion.	1515
-	T3	TP33	F-G, S-Q	Category C H1	SG16 SG26 SG35 SG59	White powder. Particularly if wetted with small quantities of water, a mixture with combustible material may ignite following impact or friction. When involved in a fire, or in contact with water or acids, decomposes, evolving oxygen.	1516
-	-	-	F-B, S-J	Category D	SG7 SG30	Desensitized explosive. Highly explosive in the dry state or if insufficiently wetted. May react violently in contact with heavy metals or their salts.	1517
-	T20	TP2 TP13 TP37	F-A, S-A	Category D SW1 SW2	SG35 SG36	Colourless to amber liquid evolving toxic vapour. Miscible with water. Unstable in contact with acids and alkalis, evolving hydrogen cyanide, a highly toxic and flammable gas. Highly toxic if swallowed, by skin contact or by inhalation.	1541
-	T6	TP33	F-A, S-A	Category A	-	A wide range of toxic solids, generally of vegetable origin. Toxic if swallowed, by skin contact or by inhalation.	1544
-	T3	TP33	F-A, S-A	Category A	-	See entry above.	1544
-	T1	TP33	F-A, S-A	Category A	-	See entry above.	1544
-	T7	TP2	F-E, S-D	Category D SW1 SW2	-	Colourless liquid evolving toxic vapour which is irritating and causes tears. Flashpoint: 46°C c.c. Toxic if swallowed, by skin contact or by inhalation.	1545
-	T3	TP33	F-A, S-A	Category A	SG36	White powder or crystals. Soluble in water. Reacts with alkalis, evolving ammonia gas. Toxic if swallowed, by skin contact or by dust inhalation.	1546
-	T7	TP2	F-A, S-A	Category A SW2	SG35	Colourless, oily, volatile liquid. Reacts with acids. Toxic if swallowed, by skin contact or by inhalation.	1547
-	T1	TP33	F-A, S-A	Category A	-	White, crystalline solid. Soluble in water. Decomposes to aniline in contact with alkalis. Toxic if swallowed, by skin contact or by inhalation.	1548
-	T1	TP33	F-A, S-A	Category A	-	A wide range of toxic solids. Toxic if swallowed, by skin contact or by inhalation.	1549

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						Limited quantities	Excepted quantities	Instructions	Provisions	Instructions	Provisions
(1)	(2) 3.1.2	(3) 2.0	(4) 2.0	(5) 2.0.1.3	(6) 3.3	(7a) 3.4	(7b) 3.5	(8) 4.1.4	(9) 4.1.4	(10) 4.1.4	(11) 4.1.4
1550	ANTIMONY LACTATE	6.1	–	III	–	5 kg	E1	P002 LP02	–	IBC08	B3
1551	ANTIMONY POTASSIUM TARTRATE	6.1	–	III	–	5 kg	E1	P002 LP02	–	IBC08	B3
1553	ARSENIC ACID, LIQUID	6.1	–	I	–	0	E5	P001	PP31	–	–
1554	ARSENIC ACID, SOLID	6.1	–	II	–	500 g	E4	P002	–	IBC08	B4 B21
1555	ARSENIC BROMIDE	6.1	–	II	–	500 g	E4	P002	–	IBC08	B4 B21
1556	ARSENIC COMPOUND, LIQUID, N.O.S. inorganic, including: Arsenates, n.o.s., Arsenites, n.o.s., and Arsenic sulphides, n.o.s.	6.1	–	I	43 274	0	E5	P001	–	–	–
1556	ARSENIC COMPOUND, LIQUID, N.O.S. inorganic, including: Arsenates, n.o.s., Arsenites, n.o.s., and Arsenic sulphides, n.o.s.	6.1	–	II	43 274	100 mL	E4	P001	–	IBC02	–
1556	ARSENIC COMPOUND, LIQUID, N.O.S. inorganic, including: Arsenates, n.o.s., Arsenites, n.o.s., and Arsenic sulphides, n.o.s.	6.1	–	III	43 223 274	5 L	E1	P001 LP01	–	IBC03	–
1557	ARSENIC COMPOUND, SOLID, N.O.S. inorganic, including: Arsenates, n.o.s.; Arsenites, n.o.s.; and Arsenic sulphides, n.o.s.	6.1	–	I	43 274	0	E5	P002	–	IBC07	B1
1557	ARSENIC COMPOUND, SOLID, N.O.S. inorganic, including: Arsenates, n.o.s.; Arsenites, n.o.s.; and Arsenic sulphides, n.o.s.	6.1	–	II	43 274	500 g	E4	P002	–	IBC08	B4 B21
1557	ARSENIC COMPOUND, SOLID, N.O.S. inorganic, including: Arsenates, n.o.s.; Arsenites, n.o.s.; and Arsenic sulphides, n.o.s.	6.1	–	III	43 223 274	5 kg	E1	P002 LP02	–	IBC08	B3
1558	ARSENIC	6.1	–	II	–	500 g	E4	P002	–	IBC08	B4 B21
1559	ARSENIC PENTOXIDE	6.1	–	II	–	500 g	E4	P002	–	IBC08	B4 B21
1560	ARSENIC TRICHLORIDE	6.1	–	I	–	0	E0	P602	–	–	–
1561	ARSENIC TRIOXIDE	6.1	–	II	–	500 g	E4	P002	–	IBC08	B4 B21
1562	ARSENICAL DUST	6.1	–	II	–	500 g	E4	P002	–	IBC08	B4 B21

UN No.	Portable tanks and bulk containers		EmS	Stowage and handling	Segregation	Properties and observations	UN No.
	Tank instructions	Provisions					
(12)	(13) 4.2.5 4.3	(14) 4.2.5	(15) 5.4.3.2 7.8	(16a) 7.1 7.3–7.7	(16b) 7.2–7.7	(17)	(18)
–	T1	TP33	F-A, S-A	Category A	–	White powder or crystals. Toxic if swallowed, by skin contact or by dust inhalation.	1550
–	T1	TP33	F-A, S-A	Category A	–	Colourless crystals or white powder. Toxic if swallowed, by skin contact or by dust inhalation.	1551
–	T20	TP2 TP7 TP13	F-A, S-A	Category B	SG33	White, deliquescent crystals which readily become liquid. Melting point: approximately 35°C. Miscible with water. In contact with metals, may evolve arsine, an extremely toxic gas. Highly toxic if swallowed, by skin contact or by inhalation.	1553
–	T3	TP33	F-A, S-A	Category A	–	White crystals with a relatively high melting point. Soluble in water. Toxic if swallowed, by skin contact or by dust inhalation.	1554
–	T3	TP33	F-A, S-A	Category A SW1 SW2 H2	–	White, deliquescent crystals. Melting point: approximately 33°C. Decomposed by water, evolving hydrogen bromide, an irritating and corrosive gas, apparent as white fumes. Toxic if swallowed, by skin contact or by dust inhalation.	1555
–	T14	TP2 TP13 TP27	F-A, S-A	Category B SW2	SG70	A wide variety of toxic liquids. In contact with acids, arsenic sulphide evolves hydrogen sulphide, a toxic and flammable gas. Toxic if swallowed, by skin contact or by inhalation.	1556
–	T11	TP2 TP13 TP27	F-A, S-A	Category B SW2	SG70	See entry above.	1556
–	T7	TP2 TP28	F-A, S-A	Category B SW2	SG70	See entry above.	1556
–	T6	TP33	F-A, S-A	Category A	SG70	A wide variety of toxic solids. In contact with acids, arsenic sulphide evolves hydrogen sulphide, a toxic and flammable gas. Toxic if swallowed, by skin contact or by dust inhalation.	1557
–	T3	TP33	F-A, S-A	Category A	SG70	See entry above.	1557
–	T1	TP33	F-A, S-A	Category A	SG70	See entry above.	1557
–	T3	TP33	F-A, S-A	Category A	–	Silvery, brittle, crystalline solid with the appearance of a metal. Toxic if swallowed, by skin contact or by dust inhalation.	1558
–	T3	TP33	F-A, S-A	Category A	–	White, deliquescent powder. Soluble in water. Toxic if swallowed, by skin contact or by dust inhalation.	1559
–	T14	TP2 TP13	F-A, S-A	Category B SW2	–	Colourless, oily liquid. Fumes in moist air, evolving hydrogen chloride, an irritating and corrosive gas, apparent as white fumes. Reacts with water. Highly toxic if swallowed, by skin contact or by inhalation.	1560
–	T3	TP33	F-A, S-A	Category A	–	White powder. Slightly soluble in water. Toxic if swallowed, by skin contact or by dust inhalation.	1561
–	T3	TP33	F-A, S-A	Category A	–	Fine powder. Toxic if swallowed, by skin contact or by dust inhalation.	1562

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						Limited quantities	Excepted quantities	Instructions	Provisions	Instructions	Provisions
(1)	(2) 3.1.2	(3) 2.0	(4) 2.0	(5) 2.0.1.3	(6) 3.3	(7a) 3.4	(7b) 3.5	(8) 4.1.4	(9) 4.1.4	(10) 4.1.4	(11) 4.1.4
1564	BARIUM COMPOUND, N.O.S.	6.1	–	II	177 274	500 g	E4	P002	–	IBC08	B4 B21
1564	BARIUM COMPOUND, N.O.S.	6.1	–	III	177 223 274	5 kg	E1	P002 LP02	–	IBC08	B3
1565	BARIUM CYANIDE	6.1	– P	I	–	0	E5	P002	PP31	IBC07	B1
1566	BERYLLIUM COMPOUND, N.O.S.	6.1	–	II	274	500 g	E4	P002	–	IBC08	B4 B21
1566	BERYLLIUM COMPOUND, N.O.S.	6.1	–	III	223 274	5 kg	E1	P002 LP02	–	IBC08	B3
1567	BERYLLIUM POWDER	6.1	4.1	II	–	500 g	E4	P002	PP100	IBC08	B4 B21
1569	BROMOACETONE	6.1	3 P	II	–	0	E0	P602	–	–	–
1570	BRUCINE	6.1	–	I	43	0	E5	P002	–	IBC07	B1
1571	BARIUM AZIDE, WETTED with not less than 50% water, by mass	4.1	6.1	I	28	0	E0	P406	PP31	–	–
1572	CACODYLIC ACID	6.1	–	II	–	500 g	E4	P002	–	IBC08	B4 B21
1573	CALCIUM ARSENATE	6.1	– P	II	–	500 g	E4	P002	–	IBC08	B4 B21
1574	CALCIUM ARSENATE AND CALCIUM ARSENITE MIXTURE, SOLID	6.1	– P	II	–	500 g	E4	P002	–	IBC08	B4 B21
1575	CALCIUM CYANIDE	6.1	– P	I	–	0	E5	P002	PP31	IBC07	B1
1577	CHLORODINITROBENZENES, LIQUID	6.1	– P	II	279	100 mL	E4	P001	–	IBC02	–
1578	CHLORONITROBENZENES, SOLID	6.1	–	II	279	500 g	E4	P002	–	IBC08	B4 B21
1579	4-CHLORO- <i>o</i> -TOLUIDINE HYDROCHLORIDE, SOLID	6.1	–	III	–	5 kg	E1	P002 LP02	–	IBC08	B3
1580	CHLOROPICRIN	6.1	– P	I	354	0	E0	P601	–	–	–
1581	CHLOROPICRIN AND METHYL BROMIDE MIXTURE with more than 2% chloropicrin	2.3	–	–	–	0	E0	P200	–	–	–
1582	CHLOROPICRIN AND METHYL CHLORIDE MIXTURE	2.3	–	–	–	0	E0	P200	–	–	–
1583	CHLOROPICRIN MIXTURE, N.O.S.	6.1	–	I	43 274 315	0	E0	P602	–	–	–
1583	CHLOROPICRIN MIXTURE, N.O.S.	6.1	–	II	43 274	100 mL	E0	P001	–	IBC02	–

UN No.	Portable tanks and bulk containers		EmS	Stowage and handling	Segregation	Properties and observations	UN No.
	Tank instructions	Provisions					
(12)	(13) 4.2.5 4.3	(14) 4.2.5	(15) 5.4.3.2 7.8	(16a) 7.1 7.3–7.7	(16b) 7.2–7.7	(17)	(18)
–	T3	TP33	F-A, S-A	Category A	–	White powder, lumps or crystals. Toxic if swallowed, by skin contact or by inhalation.	1564
–	T1	TP33	F-A, S-A	Category A	–	See entry above.	1564
–	T6	TP33	F-A, S-A	Category A SW2	SG35	White crystals or powder. Soluble in water. Reacts with acids or acid fumes, evolving hydrogen cyanide, a highly toxic and flammable gas. Highly toxic if swallowed, by skin contact or by dust inhalation.	1565
–	T3	TP33	F-A, S-A	Category A	–	A wide range of toxic solids. Toxic if swallowed, by skin contact or by dust inhalation.	1566
–	T1	TP33	F-A, S-A	Category A	–	See entry above.	1566
–	T3	TP33	F-G, S-G	Category A H1	SG25 SG26	White, metallic powder. Toxic if swallowed, by skin contact or by dust inhalation.	1567
–	T20	TP2 TP13	F-E, S-D	Category D SW2	–	When pure, colourless liquid evolving irritating vapour ("Tear Gas"). Flashpoint: approximately 45°C c.c. Toxic if swallowed, by skin contact or by inhalation.	1569
–	T6	TP33	F-A, S-A	Category A	–	White crystals or powder. Highly toxic if swallowed, by skin contact or by dust inhalation.	1570
–	–	–	F-B, S-J	Category D	SG7 SG30	Desensitized explosive. White crystals or powder. Explosive and sensitive to friction in the dry state. Toxic if swallowed, by skin contact or by dust inhalation. May form extremely sensitive compounds with heavy metals or their salts.	1571
–	T3	TP33	F-A, S-A	Category E	SG35	Colourless crystals or white powder with an offensive odour. Soluble in water. May react with acids, evolving dimethylarsine, an extremely toxic gas. Toxic if swallowed, by skin contact or by dust inhalation.	1572
–	T3	TP33	F-A, S-A	Category A	–	White powder. Slightly soluble in water. Toxic if swallowed, by skin contact or by dust inhalation.	1573
–	T3	TP33	F-A, S-A	Category A	–	White powder. Toxic if swallowed, by skin contact or by dust inhalation.	1574
–	T6	TP33	F-A, S-A	Category A SW2	SG35	White crystals or powder. Decomposes slowly in water to form a weak hydrogen cyanide solution. Reacts with acids or acid fumes, evolving hydrogen cyanide, a highly toxic and flammable gas. Highly toxic if swallowed, by skin contact or by dust inhalation.	1575
–	T7	TP2	F-A, S-A	Category A	SG15	Colourless liquids. May explode if involved in a fire. Toxic if swallowed, by skin contact or by inhalation.	1577
–	T3	TP33	F-A, S-A	Category A	–	Yellow crystals. Melting point: approximately 30°C to 80°C. Toxic if swallowed, by skin contact or by dust inhalation.	1578
–	T1	TP33	F-A, S-A	Category A	–	Dry solid or paste. Toxic if swallowed, by skin contact or by dust inhalation.	1579
–	T22	TP2 TP13 TP37	F-A, S-A	Category D SW2	–	Colourless, oily liquid. Highly toxic if swallowed, by skin contact or by inhalation.	1580
–	T50	–	F-C, S-U	Category D SW1 SW2	–	Extremely volatile liquid evolving highly toxic vapours. Highly toxic by skin contact or by inhalation. Causes burns to skin and eyes; vapour irritating to mucous membranes.	1581
–	T50	–	F-C, S-U	Category D SW1 SW2	–	Extremely volatile liquid evolving highly toxic vapours. Highly toxic by skin contact or by inhalation. Causes burns to skin and eyes; vapour irritating to mucous membranes.	1582
–	–	–	F-A, S-A	Category C SW2	–	A wide range of liquid mixtures. May evolve highly toxic vapour. Toxic if swallowed, by skin contact or by inhalation.	1583
–	–	–	F-A, S-A	Category C SW2	–	See entry above.	1583

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UN No.	Proper shipping name (PSN)	Class or division	Subsidiary risk(s)	Packing group	Special provisions	Limited and excepted quantity provisions		Packing		IBC	
						Limited quantities	Excepted quantities	Instructions	Provisions	Instructions	Provisions
(1)	(2) 3.1.2	(3) 2.0	(4) 2.0	(5) 2.0.1.3	(6) 3.3	(7a) 3.4	(7b) 3.5	(8) 4.1.4	(9) 4.1.4	(10) 4.1.4	(11) 4.1.4
1583	CHLOROPICRIN MIXTURE, N.O.S.	6.1	–	III	43 223 274	5 L	E0	P001 LP01	–	IBC03	–
1585	COPPER ACETOARSENITE	6.1	– P	II	–	500 g	E4	P002	–	IBC08	B4 B21
1586	COPPER ARSENITE	6.1	– P	II	–	500 g	E4	P002	–	IBC08	B4 B21
1587	COPPER CYANIDE	6.1	– P	II	–	500 g	E4	P002	–	IBC08	B4 B21
1588	CYANIDES, INORGANIC, SOLID, N.O.S.	6.1	– P	I	47 274	0	E5	P002	–	IBC07	B1
1588	CYANIDES, INORGANIC, SOLID, N.O.S.	6.1	– P	II	47 274	500 g	E4	P002	–	IBC08	B4 B21
1588	CYANIDES, INORGANIC, SOLID, N.O.S.	6.1	– P	III	47 223 274	5 kg	E1	P002 LP02	–	IBC08	B3
1589	CYANOGEN CHLORIDE, STABILIZED	2.3	8 P	–	386	0	E0	P200	–	–	–
1590	DICHLOROANILINES, LIQUID	6.1	– P	II	279	100 mL	E4	P001	–	IBC02	–
1591	o-DICHLOROBENZENE	6.1	–	III	279	5 L	E1	P001 LP01	–	IBC03	–
1593	DICHLOROMETHANE	6.1	–	III	–	5 L	E1	P001 LP01	–	IBC03	B8
1594	DIETHYL SULPHATE	6.1	–	II	–	100 mL	E4	P001	–	IBC02	–
1595	DIMETHYL SULPHATE	6.1	8	I	354	0	E0	P602	–	–	–
1596	DINITROANILINES	6.1	–	II	–	500 g	E4	P002	–	IBC08	B4 B21
1597	DINITROBENZENES, LIQUID	6.1	–	II	–	100 mL	E4	P001	–	IBC03	–
1597	DINITROBENZENES, LIQUID	6.1	–	III	223	5 L	E1	P001 LP01	–	IBC03	–
1598	DINITRO-o-CRESOL	6.1	– P	II	43	500 g	E4	P002	–	IBC08	B4 B21
1599	DINITROPHENOL SOLUTION	6.1	– P	II	–	100 mL	E4	P001	–	IBC02	–
1599	DINITROPHENOL SOLUTION	6.1	– P	III	223	5 L	E1	P001 LP01	–	IBC03	–

UN No.	Portable tanks and bulk containers		EmS	Stowage and handling	Segregation	Properties and observations	UN No.
	Tank instructions	Provisions					
(12)	(13) 4.2.5 4.3	(14) 4.2.5	(15) 5.4.3.2 7.8	(16a) 7.1 7.3–7.7	(16b) 7.2–7.7	(17)	(18)
–	–	–	F-A, S-A	Category C SW2	–	A wide range of liquid mixtures. May evolve highly toxic vapour. Toxic if swallowed, by skin contact or by inhalation.	1583
–	T3	TP33	F-A, S-A	Category A	–	Green powder. Insoluble in water. Toxic if swallowed, by skin contact or by dust inhalation.	1585
–	T3	TP33	F-A, S-A	Category A	–	Yellowish-green powder. Insoluble in water. Toxic if swallowed, by skin contact or by dust inhalation.	1586
–	T3	TP33	F-A, S-A	Category A	SG35	Green powder. Slightly soluble in water. Reacts with acids or acid fumes, evolving hydrogen cyanide, a highly toxic and flammable gas. Toxic if swallowed, by skin contact or by dust inhalation.	1587
–	T6	TP33	F-A, S-A	Category A	SG35	Solids. May be soluble in water. On contact with water, may form a weak hydrogen cyanide solution. React with acids or acid fumes, evolving hydrogen cyanide, a highly toxic and flammable gas. Toxic if swallowed, by skin contact or by dust inhalation. The provisions of this Code shall not apply to complex ferricyanides and ferrocyanides.	1588
–	T3	TP33	F-A, S-A	Category A	SG35	See entry above.	1588
–	T1	TP33	F-A, S-A	Category A	SG35	See entry above.	1588
–	–	–	F-C, S-U	Category D SW1 SW2	–	Liquefied, non-flammable, toxic and corrosive gas with an irritating odour. Produces severe tearing of the eyes. On contact with water, reacts violently to give off highly toxic and corrosive fumes. Much heavier than air (2.1). Boiling point: 13°C. Toxic by skin contact or by inhalation. Highly irritating to skin, eyes and mucous membranes.	1589
–	T7	TP2	F-A, S-A	Category A SW2	–	Colourless liquid with a penetrating odour. Liquid mixtures of various isomers of dichloroanilines, some of which in the pure state may be solid, with a melting point varying from 24°C to 72°C. Toxic if swallowed, by skin contact or by inhalation.	1590
–	T4	TP1	F-A, S-A	Category A	–	Volatile liquid. Melting point: approximately –17°C. Toxic if swallowed, by skin contact or by inhalation.	1591
–	T7	TP2	F-A, S-A	Category A	–	Colourless, volatile liquid with heavy vapours. Boiling point: 40°C. When involved in a fire, evolves extremely toxic fumes (phosgene). Toxic if swallowed, by skin contact or by inhalation.	1593
–	T7	TP2	F-A, S-A	Category C	–	Colourless, oily liquid. Readily hydrolysed by moisture to sulphuric acid, which is a corrosive liquid. Toxic if swallowed, by skin contact or by inhalation.	1594
–	T20	TP2 TP13 TP35	F-A, S-B	Category D SW2	–	Colourless, volatile liquid evolving toxic vapours. In the presence of moisture, corrosive to most metals. Highly toxic if swallowed, by skin contact or by inhalation. Causes burns to skin, eyes and mucous membranes.	1595
–	T3	TP33	F-A, S-A	Category A	SG15	Yellow crystals in pure form. Insoluble in water. May explode if involved in a fire. Toxic if swallowed, by skin contact or by inhalation.	1596
–	T7	TP2	F-A, S-A	Category A	SG15	Yellow solutions. May explode if involved in a fire. Toxic if swallowed, by skin contact or by inhalation.	1597
–	T7	TP2	F-A, S-A	Category A	SG15	See entry above.	1597
–	T3	TP33	F-A, S-A	Category A	–	Yellow crystals or crystallized mass. Slightly soluble in water. Toxic if swallowed, by skin contact or by dust inhalation.	1598
–	T7	TP2	F-A, S-A	Category A	SG30	Substance when pure consists of yellow crystals. Slightly soluble in water. May form extremely sensitive compounds with heavy metals or their salts. Toxic if swallowed, by skin contact or by inhalation.	1599
–	T4	TP1	F-A, S-A	Category A	SG30	See entry above.	1599

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						Limited quantities	Excepted quantities	Instructions	Provisions	Instructions	Provisions
(1)	(2) 3.1.2	(3) 2.0	(4) 2.0	(5) 2.0.1.3	(6) 3.3	(7a) 3.4	(7b) 3.5	(8) 4.1.4	(9) 4.1.4	(10) 4.1.4	(11) 4.1.4
1600	DINITROTOLUENES, MOLTEN	6.1	- P	II	-	0	E0	-	-	-	-
1601	DISINFECTANT, SOLID, TOXIC, N.O.S.	6.1	-	I	274	0	E5	P002	-	IBC07	B1
1601	DISINFECTANT, SOLID, TOXIC, N.O.S.	6.1	-	II	274	500 g	E4	P002	-	IBC08	B4 B21
1601	DISINFECTANT, SOLID, TOXIC, N.O.S.	6.1	-	III	223 274	5 kg	E1	P002 LP02	-	IBC08	B3
1602	DYE, LIQUID, TOXIC, N.O.S. or DYE INTERMEDIATE, LIQUID, TOXIC, N.O.S.	6.1	-	I	274	0	E5	P001	-	-	-
1602	DYE, LIQUID, TOXIC, N.O.S. or DYE INTERMEDIATE, LIQUID, TOXIC, N.O.S.	6.1	-	II	274	100 mL	E4	P001	-	IBC02	-
1602	DYE, LIQUID, TOXIC, N.O.S. or DYE INTERMEDIATE, LIQUID, TOXIC, N.O.S.	6.1	-	III	223 274	5 L	E1	P001 LP01	-	IBC03	-
1603	ETHYL BROMOACETATE	6.1	3	II	-	100 mL	E0	P001	-	IBC02	-
1604	ETHYLENEDIAMINE	8	3	II	-	1 L	E2	P001	-	IBC02	-
1605	ETHYLENE DIBROMIDE	6.1	-	I	354	0	E0	P602	-	-	-
1606	FERRIC ARSENATE	6.1	- P	II	-	500 g	E4	P002	-	IBC08	B4 B21
1607	FERRIC ARSENITE	6.1	- P	II	-	500 g	E4	P002	-	IBC08	B4 B21
1608	FERROUS ARSENATE	6.1	- P	II	-	500 g	E4	P002	-	IBC08	B4 B21
1611	HEXAETHYL TETRAPHOSPHATE	6.1	- P	II	-	100 mL	E4	P001	-	IBC02	-
1612	HEXAETHYL TETRAPHOSPHATE AND COMPRESSED GAS MIXTURE	2.3	-	-	-	0	E0	P200	-	-	-
1613	HYDROCYANIC ACID, AQUEOUS SOLUTION (HYDROGEN CYANIDE, AQUEOUS SOLUTION) with not more than 20% hydrogen cyanide	6.1	- P	I	900	0	E0	P601	-	-	-
1614	HYDROGEN CYANIDE, STABILIZED containing less than 3% water and absorbed in a porous inert material	6.1	- P	I	386	0	E0	P099	-	-	-
1616	LEAD ACETATE	6.1	- P	III	-	5 kg	E1	P002 LP02	-	IBC08	B3
1617	LEAD ARSENATES	6.1	- P	II	-	500 g	E4	P002	-	IBC08	B4 B21
1618	LEAD ARSENITES	6.1	- P	II	-	500 g	E4	P002	-	IBC08	B4 B21

UN No.	Portable tanks and bulk containers		EmS	Stowage and handling	Segregation	Properties and observations	UN No.
	Tank instructions	Provisions					
(12)	(13) 4.2.5 4.3	(14) 4.2.5	(15) 5.4.3.2 7.8	(16a) 7.1 7.3-7.7	(16b) 7.2-7.7	(17)	(18)
-	T7	TP3	F-A, S-A	Category C	-	Molten liquid. This entry covers the 2,3-, 2,4-, 2,5-, 2,6-, 3,4- and 3,5-isomers having melting points between 52°C and 93°C. Toxic if swallowed, by skin contact or by inhalation.	1600
-	T6	TP33	F-A, S-A	Category A SW2	-	A wide range of toxic solids. Toxic if swallowed, by skin contact or by inhalation.	1601
-	T3	TP33	F-A, S-A	Category A SW2	-	See entry above.	1601
-	T1	TP33	F-A, S-A	Category A SW2	-	See entry above.	1601
-	-	-	F-A, S-A	Category A	-	A wide range of toxic liquids. Toxic if swallowed, by skin contact or by inhalation.	1602
-	-	-	F-A, S-A	Category A	-	See entry above.	1602
-	-	-	F-A, S-A	Category A	-	See entry above.	1602
-	T7	TP2	F-E, S-D	Category D SW2	-	Colourless, flammable liquid evolving irritating vapour ("Tear Gas"). Flashpoint: 58°C c.c. Toxic if swallowed, by skin contact or by inhalation.	1603
-	T7	TP2	F-E, S-C	Category A SW2	SG35	Volatile, colourless, hygroscopic flammable liquid with an ammonia-like odour. Flashpoint: 34°C c.c. Miscible with water. Causes burns to skin, eyes and mucous membranes. Reacts violently with acids.	1604
-	T20	TP2 TP13 TP37	F-A, S-A	Category D SW2	-	Colourless, volatile liquid. Highly toxic if swallowed, by skin contact or by inhalation.	1605
-	T3	TP33	F-A, S-A	Category A	-	Green crystals or powder. Insoluble in water. Toxic if swallowed, by skin contact or by dust inhalation.	1606
-	T3	TP33	F-A, S-A	Category A	-	Brown or yellow powder. Insoluble in water. Toxic if swallowed, by skin contact or by dust inhalation.	1607
-	T3	TP33	F-A, S-A	Category A	-	Green powder. Insoluble in water. Toxic if swallowed, by skin contact or by dust inhalation.	1608
-	T7	TP2	F-A, S-A	Category E SW2	-	Yellow liquid. Miscible with water. Toxic if swallowed, by skin contact or by inhalation.	1611
-	-	-	F-C, S-U	Category D SW2	-	Toxic if swallowed, by skin contact or by inhalation.	1612
-	T14	TP2 TP13	F-A, S-A	Category D SW2	-	Colourless liquid evolving extremely toxic vapour with a bitter almond odour. Miscible with water. Highly toxic if swallowed, by skin contact or by inhalation. Transport of HYDROCYANIC ACID, AQUEOUS SOLUTION with more than 20% hydrogen cyanide and of HYDROGEN CYANIDE, AQUEOUS SOLUTION with more than 20% hydrogen cyanide is prohibited.	1613
-	-	-	F-A, S-U	Category D SW1 SW2	-	Very volatile, colourless liquid, evolving extremely toxic flammable vapours, absorbed in a porous inert material. Miscible with water. Highly toxic if swallowed, by skin contact or by inhalation.	1614
-	T1	TP33	F-A, S-A	Category A	-	White crystals, or brown or grey lumps. Soluble in water. Toxic if swallowed, by skin contact or by inhalation.	1616
-	T3	TP33	F-A, S-A	Category A	-	White crystals or powder. Insoluble in water. Toxic if swallowed, by skin contact or by dust inhalation.	1617
-	T3	TP33	F-A, S-A	Category A	-	White powder. Insoluble in water. Toxic if swallowed, by skin contact or by dust inhalation.	1618

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						Limited quantities	Excepted quantities	Instructions	Provisions	Instructions	Provisions
(1)	(2) 3.1.2	(3) 2.0	(4) 2.0	(5) 2.0.1.3	(6) 3.3	(7a) 3.4	(7b) 3.5	(8) 4.1.4	(9) 4.1.4	(10) 4.1.4	(11) 4.1.4
1620	LEAD CYANIDE	6.1	- P	II	-	500 g	E4	P002	-	IBC08	B4 B21
1621	LONDON PURPLE	6.1	- P	II	43	500 g	E4	P002	-	IBC08	B4 B21
1622	MAGNESIUM ARSENATE	6.1	- P	II	-	500 g	E4	P002	-	IBC08	B4 B21
1623	MERCURIC ARSENATE	6.1	- P	II	-	500 g	E4	P002	-	IBC08	B4 B21
1624	MERCURIC CHLORIDE	6.1	- P	II	-	500 g	E4	P002	-	IBC08	B4 B21
1625	MERCURIC NITRATE	6.1	- P	II	-	500 g	E4	P002	-	IBC08	B4 B21
1626	MERCURIC POTASSIUM CYANIDE	6.1	- P	I	-	0	E5	P002	PP31	IBC07	B1
1627	MERCUROUS NITRATE	6.1	- P	II	-	500 g	E4	P002	-	IBC08	B4 B21
1629	MERCURY ACETATE	6.1	- P	II	-	500 g	E4	P002	-	IBC08	B4 B21
1630	MERCURY AMMONIUM CHLORIDE	6.1	- P	II	-	500 g	E4	P002	-	IBC08	B4 B21
1631	MERCURY BENZOATE	6.1	- P	II	-	500 g	E4	P002	-	IBC08	B4 B21
1634	MERCURY BROMIDES	6.1	- P	II	-	500 g	E4	P002	-	IBC08	B4 B21
1636	MERCURY CYANIDE	6.1	- P	II	-	500 g	E4	P002	-	IBC08	B4 B21
1637	MERCURY GLUCONATE	6.1	- P	II	-	500 g	E4	P002	-	IBC08	B4 B21
1638	MERCURY IODIDE	6.1	- P	II	-	500 g	E4	P002	-	IBC08	B4 B21
1639	MERCURY NUCLEATE	6.1	- P	II	-	500 g	E4	P002	-	IBC08	B4 B21
1640	MERCURY OLEATE	6.1	- P	II	-	500 g	E4	P002	-	IBC08	B4 B21
1641	MERCURY OXIDE	6.1	- P	II	-	500 g	E4	P002	-	IBC08	B4 B21
1642	MERCURY OXYCYANIDE, DESENSITIZED	6.1	- P	II	900	500 g	E4	P002	-	IBC08	B4 B21
1643	MERCURY POTASSIUM IODIDE	6.1	- P	II	-	500 g	E4	P002	-	IBC08	B4 B21
1644	MERCURY SALICYLATE	6.1	- P	II	-	500 g	E4	P002	-	IBC08	B4 B21
1645	MERCURY SULPHATE	6.1	- P	II	-	500 g	E4	P002	-	IBC08	B4 B21

UN No.	Portable tanks and bulk containers		EmS	Stowage and handling	Segregation	Properties and observations	UN No.
	Tank instructions	Provisions					
(12)	(13) 4.2.5 4.3	(14) 4.2.5	(15) 5.4.3.2 7.8	(16a) 7.1 7.3-7.7	(16b) 7.2-7.7	(17)	(18)
-	T3	TP33	F-A, S-A	Category A	SG35	White powder. Slightly soluble in water. Reacts with acids or acid fumes, evolving hydrogen cyanide, a highly toxic and flammable gas. Toxic if swallowed, by skin contact or by dust inhalation.	1620
-	T3	TP33	F-A, S-A	Category A	-	Mixture of arsenic trioxide, lime and ferric oxide, used as an insecticide. Insoluble in water. Toxic if swallowed, by skin contact or by dust inhalation.	1621
-	T3	TP33	F-A, S-A	Category A	-	White crystals or powder. Insoluble in water. Toxic if swallowed, by skin contact or by dust inhalation.	1622
-	T3	TP33	F-A, S-A	Category A	-	Yellow crystals or powder. Insoluble in water. Toxic if swallowed, by skin contact or by dust inhalation.	1623
-	T3	TP33	F-A, S-A	Category A	-	White crystals or powder. Soluble in water. Toxic if swallowed, by skin contact or by dust inhalation.	1624
-	T3	TP33	F-A, S-A	Category A	-	White, deliquescent crystals or powder. Soluble in water. Toxic if swallowed, by skin contact or by dust inhalation.	1625
-	T6	TP33	F-A, S-A	Category A	SG35	Colourless crystals. Soluble in water. Reacts with acids, evolving hydrogen cyanide, a highly toxic and flammable gas. Highly toxic if swallowed, by skin contact or by dust inhalation.	1626
-	T3	TP33	F-A, S-A	Category A	-	Crystals or powder. Toxic if swallowed, by skin contact or by dust inhalation.	1627
-	T3	TP33	F-A, S-A	Category A	-	White crystals or powder. Toxic if swallowed, by skin contact or by dust inhalation.	1629
-	T3	TP33	F-A, S-A	Category A	-	White crystals or powder. Insoluble in water. Toxic if swallowed, by skin contact or by dust inhalation.	1630
-	T3	TP33	F-A, S-A	Category A	-	White crystals. Toxic if swallowed, by skin contact or by dust inhalation.	1631
-	T3	TP33	F-A, S-A	Category A	-	White crystals or powder. Toxic if swallowed, by skin contact or by dust inhalation.	1634
-	T3	TP33	F-A, S-A	Category A	SG35	White crystals or powder. Soluble in water. Reacts with acids or acid fumes, evolving hydrogen cyanide, a highly toxic and flammable gas. Toxic if swallowed, by skin contact or by dust inhalation.	1636
-	T3	TP33	F-A, S-A	Category A	-	Solid. Soluble in water. Toxic if swallowed, by skin contact or by dust inhalation.	1637
-	T3	TP33	F-A, S-A	Category A	-	Red crystals or powder. Insoluble in water. Toxic if swallowed, by skin contact or by dust inhalation.	1638
-	T3	TP33	F-A, S-A	Category A	-	Brown powder containing about 20% mercury. Toxic if swallowed, by skin contact or by dust inhalation.	1639
-	T3	TP33	F-A, S-A	Category A	-	Yellow oily paste. Insoluble in water. Toxic if swallowed, by skin contact or by inhalation.	1640
-	T3	TP33	F-A, S-A	Category A	-	Orange powder. Insoluble in water. Toxic if swallowed, by skin contact or by dust inhalation.	1641
-	T3	TP33	F-A, S-A	Category A	SG15 SG35	White crystals or powder. Reacts with acids or acid fumes, evolving hydrogen cyanide, a highly toxic and flammable gas. May explode if involved in a fire. Toxic if swallowed, by skin contact or by dust inhalation. Should be sufficiently phlegmatized (mercury oxycyanide-mercury cyanide mixtures containing not less than 65% by mass of mercury cyanide can be regarded as adequately phlegmatized). Transport of MERCURY OXYCYANIDE pure is prohibited.	1642
-	T3	TP33	F-A, S-A	Category A	-	Yellow, deliquescent crystals or powder. Soluble in water. Toxic if swallowed, by skin contact or by dust inhalation.	1643
-	T3	TP33	F-A, S-A	Category A	-	White powder. Insoluble in water. Toxic if swallowed, by skin contact or by dust inhalation.	1644
-	T3	TP33	F-A, S-A	Category A	-	White crystals or powder. Decomposes in water, forming sulphuric acid. Toxic if swallowed, by skin contact or by dust inhalation.	1645

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						Limited quantities	Excepted quantities	Instructions	Provisions	Instructions	Provisions
(1)	(2) 3.1.2	(3) 2.0	(4) 2.0	(5) 2.0.1.3	(6) 3.3	(7a) 3.4	(7b) 3.5	(8) 4.1.4	(9) 4.1.4	(10) 4.1.4	(11) 4.1.4
1646	MERCURY THIOCYANATE	6.1	- P	II	-	500 g	E4	P002	-	IBC08	B4 B21
1647	METHYL BROMIDE AND ETHYLENE DIBROMIDE MIXTURE, LIQUID	6.1	- P	I	354	0	E0	P602	-	-	-
1648	ACETONITRILE	3	-	II	-	1 L	E2	P001	-	IBC02	-
1649	MOTOR FUEL ANTI-KNOCK MIXTURE	6.1	- P	I	-	0	E0	P602	-	-	-
1650	beta-NAPHTHYLAMINE, SOLID	6.1	-	II	-	500 g	E4	P002	-	IBC08	B4 B21
1651	NAPHTHYLTHIOUREA	6.1	-	II	43	500 g	E4	P002	-	IBC08	B4 B21
1652	NAPHTHYLUREA	6.1	-	II	-	500 g	E4	P002	-	IBC08	B4 B21
1653	NICKEL CYANIDE	6.1	- P	II	-	500 g	E4	P002	-	IBC08	B4 B21
1654	NICOTINE	6.1	-	II	-	100 mL	E4	P001	-	IBC02	-
1655	NICOTINE COMPOUND, SOLID, N.O.S. or NICOTINE PREPARATION, SOLID, N.O.S.	6.1	-	I	43 274	0	E5	P002	-	IBC07	B1
1655	NICOTINE COMPOUND, SOLID, N.O.S. or NICOTINE PREPARATION, SOLID, N.O.S.	6.1	-	II	43 274	500 g	E4	P002	-	IBC08	B4 B21
1655	NICOTINE COMPOUND, SOLID, N.O.S. or NICOTINE PREPARATION, SOLID, N.O.S.	6.1	-	III	43 223 274	5 kg	E1	P002 LP02	-	IBC08	B3
1656	NICOTINE HYDROCHLORIDE, LIQUID or SOLUTION	6.1	-	II	43	100 mL	E4	P001	-	IBC02	-
1656	NICOTINE HYDROCHLORIDE, LIQUID or SOLUTION	6.1	-	III	43 223	5 L	E1	P001 LP01	-	IBC03	-
1657	NICOTINE SALICYLATE	6.1	-	II	-	500 g	E4	P002	-	IBC08	B4 B21
1658	NICOTINE SULPHATE SOLUTION	6.1	-	II	-	100 mL	E4	P001	-	IBC02	-
1658	NICOTINE SULPHATE SOLUTION	6.1	-	III	223	5 L	E1	P001 LP01	-	IBC03	-
1659	NICOTINE TARTRATE	6.1	-	II	-	500 g	E4	P002	-	IBC08	B4 B21
1660	NITRIC OXIDE, COMPRESSED	2.3	5.1/8	-	-	0	E0	P200	-	-	-
1661	NITROANILINES (o-, m-, p-)	6.1	-	II	279	500 g	E4	P002	-	IBC08	B4 B21
1662	NITROBENZENE	6.1	-	II	279	100 mL	E4	P001	-	IBC02	-

UN No.	Portable tanks and bulk containers		EmS	Stowage and handling	Segregation	Properties and observations	UN No.
	Tank instructions	Provisions					
(12)	(13) 4.2.5 4.3	(14) 4.2.5	(15) 5.4.3.2 7.8	(16a) 7.1 7.3-7.7	(16b) 7.2-7.7	(17)	(18)
-	T3	TP33	F-A, S-A	Category A	-	White powder. Insoluble in water. Toxic if swallowed, by skin contact or by dust inhalation.	1646
-	T20	TP2 TP13	F-A, S-A	Category D SW2	-	Solutions of methyl bromide gas, evolving toxic vapour. Methyl bromide has a boiling point of approximately 4°C. Highly toxic if swallowed, by skin contact or by inhalation.	1647
-	T7	TP2	F-E, S-D	Category B SW2	-	Colourless, volatile liquid. Flashpoint: 2°C c.c. Explosive limits: 3% to 16%. Miscible with water. When involved in a fire, evolves toxic cyanide fumes. Harmful if swallowed, by skin contact or by inhalation.	1648
-	T14	TP2 TP13	F-A, S-A	Category D SW1 SW2	-	Volatile liquids evolving toxic vapour. Mixture of tetraethyllead or tetramethyllead with ethylene dibromide and ethylene dichloride. Insoluble in water. Highly toxic if swallowed, by skin contact or by inhalation.	1649
-	T3	TP33	F-A, S-A	Category A	-	White crystals. Toxic if swallowed, by skin contact or by inhalation.	1650
-	T3	TP33	F-A, S-A	Category A	-	White crystals or powder. Toxic if swallowed, by skin contact or by dust inhalation.	1651
-	T3	TP33	F-A, S-A	Category A	-	Crystals or powder. Toxic if swallowed, by skin contact or by dust inhalation.	1652
-	T3	TP33	F-A, S-A	Category A	SG35	Green crystals or powder. Insoluble in water. Reacts with acids or acid fumes, evolving hydrogen cyanide, a highly toxic and flammable gas. Toxic if swallowed, by skin contact or by dust inhalation.	1653
-	-	-	F-A, S-A	Category A	-	Thick colourless oil, turning brown on exposure to air. Miscible with water. Toxic if swallowed, by skin contact or by inhalation.	1654
-	T6	TP33	F-A, S-A	Category B	-	A wide variety of toxic solids. Toxic if swallowed, by skin contact or by dust inhalation.	1655
-	T3	TP33	F-A, S-A	Category A	-	See entry above.	1655
-	T1	TP33	F-A, S-A	Category A	-	See entry above.	1655
-	-	-	F-A, S-A	Category A	-	Miscible with water. Toxic if swallowed, by skin contact or by inhalation.	1656
-	-	-	F-A, S-A	Category A	-	See entry above.	1656
-	T3	TP33	F-A, S-A	Category A	-	White crystals. Soluble in water. Toxic if swallowed, by skin contact or by dust inhalation.	1657
-	T7	TP2	F-A, S-A	Category A	-	Miscible with water. Toxic if swallowed, by skin contact or by inhalation.	1658
-	T7	TP2	F-A, S-A	Category A	-	See entry above.	1658
-	T3	TP33	F-A, S-A	Category A	-	White crystals. Soluble in water. Toxic if swallowed, by skin contact or by dust inhalation.	1659
-	-	-	F-C, S-W	Category D SW2	SG6 SG19	Non-flammable, toxic and corrosive gas. Strong oxidizing agent. On contact with air, gives off brown fumes which are toxic by inhalation, with delayed effect similar to phosgene. Heavier than air (1.04). Highly irritating to skin, eyes and mucous membranes.	1660
-	T3	TP33	F-A, S-A	Category A	-	Yellow crystals. Toxic if swallowed, by skin contact or by dust inhalation. <i>ortho</i> -NITROANILINES may be carried in the molten state.	1661
-	T7	TP2	F-A, S-A	Category A SW2	-	Oily liquid, evolving toxic vapour. Melting point: approximately 6°C. Toxic if swallowed, by skin contact or by inhalation.	1662

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UN No.	Proper shipping name (PSN)	Class or division	Subsidiary risk(s)	Packing group	Special provisions	Limited and excepted quantity provisions		Packing		IBC	
						Limited quantities	Excepted quantities	Instructions	Provisions	Instructions	Provisions
(1)	(2) 3.1.2	(3) 2.0	(4) 2.0	(5) 2.0.1.3	(6) 3.3	(7a) 3.4	(7b) 3.5	(8) 4.1.4	(9) 4.1.4	(10) 4.1.4	(11) 4.1.4
1663	NITROPHENOLS (<i>o</i> -, <i>m</i> -, <i>p</i> -)	6.1	–	III	279	5 kg	E1	P002 LP02	–	IBC08	B3
1664	NITROTOLUENES, LIQUID	6.1	–	II	–	100 mL	E4	P001	–	IBC02	–
1665	NITROXYLENES, LIQUID	6.1	–	II	–	100 mL	E4	P001	–	IBC02	–
1669	PENTACHLOROETHANE	6.1	– P	II	–	100 mL	E4	P001	–	IBC02	–
1670	PERCHLOROMETHYL MERCAPTAN	6.1	– P	I	354	0	E0	P602	–	–	–
1671	PHENOL, SOLID	6.1	–	II	279	500 g	E4	P002	–	IBC08	B4 B21
1672	PHENYL CARBYLAMINE CHLORIDE	6.1	–	I	–	0	E0	P602	–	–	–
1673	PHENYLENEDIAMINES (<i>o</i> -, <i>m</i> -, <i>p</i> -)	6.1	–	III	279	5 kg	E1	P002 LP02	–	IBC08	B3
1674	PHENYLMERCURIC ACETATE	6.1	– P	II	43	500 g	E4	P002	–	IBC08	B4 B21
1677	POTASSIUM ARSENATE	6.1	–	II	–	500 g	E4	P002	–	IBC08	B4 B21
1678	POTASSIUM ARSENITE	6.1	–	II	–	500 g	E4	P002	–	IBC08	B4 B21
1679	POTASSIUM CUPROCYANIDE	6.1	– P	II	–	500 g	E4	P002	–	IBC08	B4 B21
1680	POTASSIUM CYANIDE, SOLID	6.1	– P	I	–	0	E5	P002	PP31	IBC07	B1
1683	SILVER ARSENITE	6.1	– P	II	–	500 g	E4	P002	–	IBC08	B4 B21
1684	SILVER CYANIDE	6.1	– P	II	–	500 g	E4	P002	–	IBC08	B4 B21
1685	SODIUM ARSENATE	6.1	–	II	–	500 g	E4	P002	–	IBC08	B4 B21
1686	SODIUM ARSENITE, AQUEOUS SOLUTION	6.1	–	II	43	100 mL	E4	P001	–	IBC02	–
1686	SODIUM ARSENITE, AQUEOUS SOLUTION	6.1	–	III	43 223	5 L	E1	P001 LP01	–	IBC03	–
1687	SODIUM AZIDE	6.1	–	II	–	500 g	E4	P002	–	IBC08	B4 B21
1688	SODIUM CACODYLATE	6.1	–	II	–	500 g	E4	P002	–	IBC08	B4 B21

UN No.	Portable tanks and bulk containers		EmS	Stowage and handling	Segregation	Properties and observations	UN No.
	Tank instructions	Provisions					
(12)	(13) 4.2.5 4.3	(14) 4.2.5	(15) 5.4.3.2 7.8	(16a) 7.1 7.3–7.7	(16b) 7.2–7.7	(17)	(18)
–	T1	TP33	F-A, S-A	Category A	–	Yellow crystals. Some isomers may have a melting point as low as 44°C. Toxic if swallowed, by skin contact or by dust inhalation. May be carried in the molten state.	1663
–	T7	TP2	F-A, S-A	Category A	–	Yellow liquids. Melting points: <i>ortho</i> -NITROTOLUENE: –4°C, <i>meta</i> -NITROTOLUENE: 15°C. Toxic if swallowed, by skin contact or by inhalation.	1664
–	T7	TP2	F-A, S-A	Category A	–	Yellow liquids. Melting points: 2-NITRO-3-XYLENE: 14°C to 16°C, 3-NITRO-2-XYLENE: 7°C to 9°C, 4-NITRO-3-XYLENE: 2°C. Immiscible with water. Toxic if swallowed, by skin contact or by inhalation.	1665
–	T7	TP2	F-A, S-A	Category A SW2	–	Colourless liquid. Toxic if swallowed, by skin contact or by inhalation.	1669
–	T20	TP2 TP13 TP37	F-A, S-A	Category D SW2	–	Yellow, oily, volatile liquid evolving irritating vapour (“Tear Gas”). Slowly decomposes in contact with water, producing hydrochloric acid. Reacts with iron or steel, evolving carbon tetrachloride. Corrosive to most metals. Highly toxic if swallowed, by skin contact or by inhalation.	1670
–	T3	TP33	F-A, S-A	Category A	–	Colourless or white crystals or crystallized mass. Melting point: 43°C (pure product). Soluble in water. Toxic if swallowed, by skin contact or by vapour inhalation. Rapidly absorbed through the skin.	1671
–	T14	TP2 TP13	F-A, S-A	Category D SW2	–	Pale yellow, oily liquid with an irritating unpleasant odour. Highly toxic if swallowed, by skin contact or by inhalation.	1672
–	T1	TP33	F-A, S-A	Category A	–	White crystals or powder. Toxic if swallowed, by skin contact or by dust inhalation. May be carried in the molten state.	1673
–	T3	TP33	F-A, S-A	Category A	–	Toxic if swallowed, by skin contact or by dust inhalation.	1674
–	T3	TP33	F-A, S-A	Category A	–	Colourless crystals or white powder. Soluble in water. Toxic if swallowed, by skin contact or by dust inhalation.	1677
–	T3	TP33	F-A, S-A	Category A	–	White powder. Soluble in water. Toxic if swallowed, by skin contact or by dust inhalation.	1678
–	T3	TP33	F-A, S-A	Category A	SG35	White crystals or powder. Soluble in water. Reacts with acids or acid fumes, evolving hydrogen cyanide, a highly toxic and flammable gas. Toxic if swallowed, by skin contact or by dust inhalation.	1679
–	T6	TP33	F-A, S-A	Category B	SG35	White, deliquescent crystals or lumps. Soluble in water. Reacts with acids or acid fumes, evolving hydrogen cyanide, a highly toxic and flammable gas. Highly toxic if swallowed, by skin contact or by dust inhalation.	1680
–	T3	TP33	F-A, S-A	Category A	–	Yellow powder. Insoluble in water. Toxic if swallowed, by skin contact or by dust inhalation.	1683
–	T3	TP33	F-A, S-A	Category A SW2	SG35	White powder. Insoluble in water. Reacts with acids or acid fumes, evolving hydrogen cyanide, a highly toxic and flammable gas. Toxic if swallowed, by skin contact or by dust inhalation.	1684
–	T3	TP33	F-A, S-A	Category A	–	Colourless crystals. Soluble in water. Toxic if swallowed, by skin contact or by dust inhalation.	1685
–	T7	TP2	F-A, S-A	Category A	–	Colourless. Toxic if swallowed, by skin contact or by inhalation.	1686
–	T4	TP2	F-A, S-A	Category A	–	See entry above.	1686
–	–	–	F-A, S-A	Category A	SG15 SG30 SG35	Colourless crystals. May react vigorously with acids to form hydrazoic acid, which is an explosive. May form extremely sensitive compounds with heavy metals or their salts. May explode if involved in a fire. Toxic if swallowed, by skin contact or by dust inhalation.	1687
–	T3	TP33	F-A, S-A	Category A	SG35	White, deliquescent solid with a foul odour. Reacts with acids, evolving dimethylarsine, an extremely toxic gas. Soluble in water. Toxic if swallowed, by skin contact or by dust inhalation.	1688

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						Limited quantities	Excepted quantities	Instructions	Provisions	Instructions	Provisions
(1)	(2) 3.1.2	(3) 2.0	(4) 2.0	(5) 2.0.1.3	(6) 3.3	(7a) 3.4	(7b) 3.5	(8) 4.1.4	(9) 4.1.4	(10) 4.1.4	(11) 4.1.4
1689	SODIUM CYANIDE, SOLID	6.1	– P	I	–	0	E5	P002	PP31	IBC07	B1
1690	SODIUM FLUORIDE, SOLID	6.1	–	III	–	5 kg	E1	P002 LP02	–	IBC08	B3
1691	STRONTIUM ARSENITE	6.1	–	II	–	500 g	E4	P002	–	IBC08	B4 B21
1692	STRYCHNINE or STRYCHNINE SALTS	6.1	– P	I	43	0	E5	P002	–	IBC07	B1
1693	TEAR GAS SUBSTANCE, LIQUID, N.O.S.	6.1	–	I	274	0	E0	P001	PP31	–	–
1693	TEAR GAS SUBSTANCE, LIQUID, N.O.S.	6.1	–	II	274	0	E0	P001	PP31	IBC02	–
1694	BROMOBENZYL CYANIDES, LIQUID	6.1	–	I	138	0	E0	P001	PP31	–	–
1695	CHLOROACETONE, STABILIZED	6.1	3/8 P	I	354	0	E0	P602	–	–	–
1697	CHLOROACETOPHENONE, SOLID	6.1	–	II	–	0	E0	P002	–	IBC08	B4 B21
1698	DIPHENYLAMINE CHLOROARSINE	6.1	– P	I	–	0	E0	P002	PP31	–	–
1699	DIPHENYLCHLOROARSINE, LIQUID	6.1	– P	I	–	0	E0	P001	PP31	–	–
1700	TEAR GAS CANDLES	6.1	4.1	–	–	0	E0	P600	–	–	–
1701	XYLYL BROMIDE, LIQUID	6.1	–	II	–	0	E0	P001	PP31	IBC02	–
1702	1,1,2,2-TETRACHLOROETHANE	6.1	– P	II	–	100 mL	E4	P001	–	IBC02	–
1704	TETRAETHYL DITHIOPYROPHOSPHATE	6.1	– P	II	43	100 mL	E4	P001	–	IBC02	–
1707	THALLIUM COMPOUND, N.O.S.	6.1	– P	II	43 274	500 g	E4	P002	–	IBC08	B4 B21
1708	TOLUIDINES, LIQUID	6.1	– P	II	279	100 mL	E4	P001	–	IBC02	–
1709	2,4-TOLUYLENEDIAMINE, SOLID	6.1	–	III	–	5 kg	E1	P002 LP02	–	IBC08	B3
1710	TRICHLOROETHYLENE	6.1	–	III	–	5 L	E1	P001 LP01	–	IBC03	–
1711	XYLIDINES, LIQUID	6.1	–	II	–	100 mL	E4	P001	–	IBC02	–

UN No.	Portable tanks and bulk containers		EmS	Stowage and handling	Segregation	Properties and observations	UN No.
	Tank instructions	Provisions					
(12)	(13) 4.2.5 4.3	(14) 4.2.5	(15) 5.4.3.2 7.8	(16a) 7.1 7.3–7.7	(16b) 7.2–7.7	(17)	(18)
–	T6	TP33	F-A, S-A	Category B	SG35	White, deliquescent crystals or lumps. Soluble in water. Reacts with acids or acid fumes, evolving hydrogen cyanide, a highly toxic and flammable gas. Highly toxic if swallowed, by skin contact or by dust inhalation.	1689
–	T1	TP33	F-A, S-A	Category A	SG35	White crystals or powder. React with acids, evolving hydrogen fluoride, a toxic, irritating and corrosive gas, apparent as white fumes. Toxic if swallowed, by skin contact or by inhalation.	1690
–	T3	TP33	F-A, S-A	Category A	–	White powder. Soluble in water. Toxic if swallowed, by skin contact or by dust inhalation.	1691
–	T6	TP33	F-A, S-A	Category A	–	White crystals or powder. Strychnine is slightly soluble; the salts are soluble in water. Highly toxic if swallowed, by skin contact or by dust inhalation.	1692
–	–	–	F-A, S-A	Category D SW2	–	“Tear gas substance” is a generic term for substances which, in minute quantities dispersed in air, cause extreme eye irritation and profuse tears. Toxic if swallowed, by skin contact or by inhalation.	1693
–	–	–	F-A, S-A	Category D SW2	–	See entry above.	1693
–	T14	TP2 TP13	F-A, S-A	Category D SW1 SW2 H2	SG35	Volatile liquids evolving irritating vapour (“Tear Gas”). Melting points: <i>ortho</i> -BROMOBENZYL CYANIDE 1°C. Highly toxic if swallowed, by skin contact or by inhalation.	1694
–	T20	TP2 TP13 TP35	F-E, S-C	Category D SW2	SG5 SG8	Flammable, corrosive, colourless liquid, evolving irritating vapour (“Tear Gas”). Miscible with water. Flashpoint: 25°C c.c. Highly toxic if swallowed, by skin contact or by inhalation.	1695
–	T3	TP33	F-A, S-A	Category D SW1 SW2 H2	–	White crystals evolving irritating vapour (“Tear Gas”). Melting point may be as low as 20°C. Toxic if swallowed, by skin contact or by inhalation.	1697
–	T6	TP33	F-A, S-A	Category D SW2	–	Volatile, yellow crystals evolving irritating vapour (“Tear Gas”). Highly toxic if swallowed, by skin contact or by inhalation.	1698
–	–	–	F-A, S-A	Category D SW2	–	When pure, colourless liquid. The commercial product may be a dark brown liquid. Volatile liquid evolving an irritating vapour (“Tear Gas”). Highly toxic if swallowed, by skin contact or by inhalation.	1699
–	–	–	F-A, S-G	Category D SW2	–	Devices containing tear-producing substances which, in minute quantities dispersed in air, cause extreme eye irritation and profuse tears.	1700
–	T7	TP2 TP13	F-A, S-A	Category D SW2	–	Colourless liquid, evolving irritating vapour (“Tear Gas”). Toxic if swallowed, by skin contact or by inhalation.	1701
–	T7	TP2	F-A, S-A	Category A SW2	–	Colourless liquid with a chloroform-like odour. Toxic if swallowed, by skin contact or by inhalation.	1702
–	T7	TP2	F-A, S-A	Category D SW2	–	Colourless liquid. In the presence of moisture, corrosive to most metals. Toxic if swallowed, by skin contact or by inhalation.	1704
–	T3	TP33	F-A, S-A	Category A	–	White crystals or powder. Toxic if swallowed, by skin contact or by dust inhalation.	1707
–	T7	TP2	F-A, S-A	Category A	–	Colourless liquids. Toxic if swallowed, by skin contact or by inhalation.	1708
–	T1	TP33	F-A, S-A	Category A	–	White crystals or powder. Toxic if swallowed, by skin contact or by dust inhalation.	1709
–	T4	TP1	F-A, S-A	Category A SW2	–	Colourless liquid with a chloroform-like odour. When involved in a fire, evolves extremely toxic fumes (phosgene). Toxic if swallowed, by skin contact or by inhalation.	1710
–	T7	TP2	F-A, S-A	Category A	–	Toxic if swallowed, by skin contact or by inhalation.	1711

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						Limited quantities	Excepted quantities	Instructions	Provisions	Instructions	Provisions
(1)	(2) 3.1.2	(3) 2.0	(4) 2.0	(5) 2.0.1.3	(6) 3.3	(7a) 3.4	(7b) 3.5	(8) 4.1.4	(9) 4.1.4	(10) 4.1.4	(11) 4.1.4
1712	ZINC ARSENATE or ZINC ARSENITE or ZINC ARSENATE, ZINC ARSENITE MIXTURE	6.1	–	II	–	500 g	E4	P002	–	IBC08	B4 B21
1713	ZINC CYANIDE	6.1	– P	I	–	0	E5	P002	–	IBC07	B1
1714	ZINC PHOSPHIDE	4.3	6.1	I	–	0	E0	P403	PP31	–	–
1715	ACETIC ANHYDRIDE	8	3	II	–	1 L	E2	P001	–	IBC02	–
1716	ACETYL BROMIDE	8	–	II	–	1 L	E2	P001	–	IBC02	B20
1717	ACETYL CHLORIDE	3	8	II	–	1 L	E2	P001	–	IBC02	B20
1718	BUTYL ACID PHOSPHATE	8	–	III	–	5 L	E1	P001 LP01	–	IBC03	–
1719	CAUSTIC ALKALI LIQUID, N.O.S.	8	–	II	274	1 L	E2	P001	–	IBC02	–
1719	CAUSTIC ALKALI LIQUID, N.O.S.	8	–	III	223 274	5 L	E1	P001	–	IBC03	–
1722	ALLYL CHLOROFORMATE	6.1	3/8	I	–	0	E0	P001	–	–	–
1723	ALLYL IODIDE	3	8	II	–	1 L	E2	P001	–	IBC02	–
1724	ALLYLTRICHLOROSILANE, STABILIZED	8	3	II	386	0	E0	P010	–	–	–
1725	ALUMINIUM BROMIDE, ANHYDROUS	8	–	II	937	1 kg	E2	P002	–	IBC08	B4 B21
1726	ALUMINIUM CHLORIDE, ANHYDROUS	8	–	II	937	1 kg	E2	P002	–	IBC08	B4 B21

(12)	Portable tanks and bulk containers		EmS	Stowage and handling	Segregation	Properties and observations	UN No.
	Tank instructions	Provisions					
(13) 4.2.5 4.3	(14) 4.2.5	(15) 5.4.3.2 7.8	(16a) 7.1 7.3–7.7	(16b) 7.2–7.7	(17)	(18)	
–	T3	TP33	F-A, S-A	Category A	–	Crystalline solid. Insoluble in water. Toxic if swallowed, by skin contact or by dust inhalation.	1712
–	T6	TP33	F-A, S-A	Category A	SG35	White crystals or powder. Insoluble in water. Reacts with acids or acid fumes, evolving hydrogen cyanide, a highly toxic and flammable gas. Highly toxic if swallowed, by skin contact or by dust inhalation.	1713
–	–	–	F-G, S-N	Category E SW2 SW5 H1	SG26 SG35	Grey crystals or powder. Reacts with acids or decomposes slowly in contact with water or damp air, evolving phosphine, a spontaneously flammable and highly toxic gas. Reacts violently with oxidizing substances.	1714
–	T7	TP2	F-E, S-C	Category A SW2	–	Colourless, flammable liquid with an irritating odour. Flashpoint: 54°C c.c. Immiscible with water. In the presence of moisture, corrosive to most metals. Vapour irritates mucous membranes.	1715
–	T8	TP2	F-A, S-B	Category C SW2	–	Colourless liquid. Reacts violently with water, evolving hydrogen bromide, an irritating and corrosive gas apparent as white fumes. In the presence of moisture, highly corrosive to most metals. Vapour irritates mucous membranes.	1716
–	T8	TP2	F-E, S-C	Category B SW2	–	Colourless liquid. Flashpoint: 5°C c.c. Boiling point: 51°C. Reacts violently with water, evolving hydrogen chloride, an irritating and corrosive gas apparent as white fumes. In the presence of moisture, highly corrosive to most metals. Causes burns to skin, eyes and mucous membranes.	1717
–	T4	TP1	F-A, S-B	Category A	–	Yellow liquid. Insoluble in water. Mildly corrosive to most metals.	1718
–	T11	TP2 TP27	F-A, S-B	Category A	SG22 SG35	Corrosive to aluminium, zinc and tin. Reacts violently with acids. Reacts with ammonium salts, evolving ammonia gas. Causes burns to skin, eyes and mucous membranes.	1719
–	T7	TP1 TP28	F-A, S-B	Category A	SG22 SG35	See entry above.	1719
–	T14	TP2 TP13	F-E, S-C	Category D SW2	SG5 SG8	Colourless, flammable liquid, extremely irritating odour, causes tears. Flashpoint: 31°C c.c. When involved in a fire, evolves toxic gases. In the presence of moisture, corrosive to most metals. Highly toxic if swallowed, by skin contact or by inhalation. Causes burns to skin, eyes and mucous membranes.	1722
–	T7	TP2 TP13	F-E, S-C	Category B SW2	–	Yellow liquid with an irritating odour. Flashpoint: 5°C c.c. Immiscible with water. In the presence of moisture, corrosive to most metals. Causes burns to skin, eyes and mucous membranes.	1723
–	T10	TP2 TP7 TP13	F-E, S-C	Category C SW1 SW2	–	Colourless, flammable liquid with a pungent odour. Flashpoint: 35°C c.c. Reacts violently with water, evolving hydrogen chloride, an irritating and corrosive gas, apparent as white fumes. When involved in a fire, evolves toxic gases. In the presence of moisture, highly corrosive to most metals. Causes burns to skin, eyes and mucous membranes.	1724
–	T3	TP33	F-A, S-B	Category A SW2	–	White to yellowish hygroscopic crystals. Forms corrosive vapours in moist air. Reacts violently with water, evolving heat and hydrogen bromide, an irritating and corrosive gas apparent as white fumes. In the presence of moisture, highly corrosive to most metals. Highly irritating to skin, eyes and mucous membranes. The solid hydrated form of this substance is not subject to the provisions of this Code.	1725
–	T3	TP33	F-A, S-B	Category A SW2	–	White to yellowish hygroscopic crystals. Forms corrosive vapours in moist air. Reacts violently with water, evolving heat and hydrogen chloride, an irritating and corrosive gas apparent as white fumes. In the presence of moisture, highly corrosive to most metals. Highly irritating to skin, eyes and mucous membranes. The solid hydrated form of this substance is not subject to the provisions of this Code.	1726

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UN No.	Proper shipping name (PSN)	Class or division	Subsidiary risk(s)	Packing group	Special provisions	Limited and excepted quantity provisions		Packing		IBC	
						Limited quantities	Excepted quantities	Instructions	Provisions	Instructions	Provisions
(1)	(2) 3.1.2	(3) 2.0	(4) 2.0	(5) 2.0.1.3	(6) 3.3	(7a) 3.4	(7b) 3.5	(8) 4.1.4	(9) 4.1.4	(10) 4.1.4	(11) 4.1.4
1727	AMMONIUM HYDROGENDIFLUORIDE, SOLID	8	–	II	–	1 kg	E2	P002	–	IBC08	B4 B21
1728	AMYLTRICHLOROSILANE	8	–	II	–	0	E0	P010	–	–	–
1729	ANISOYL CHLORIDE	8	–	II	–	1 kg	E2	P002	–	IBC08	B4 B21
1730	ANTIMONY PENTACHLORIDE, LIQUID	8	–	II	–	1 L	E2	P001	–	IBC02	–
1731	ANTIMONY PENTACHLORIDE SOLUTION	8	–	II	–	1 L	E2	P001	–	IBC02	–
1731	ANTIMONY PENTACHLORIDE SOLUTION	8	–	III	223	5 L	E1	P001 LP01	–	IBC03	–
1732	ANTIMONY PENTAFLUORIDE	8	6.1	II	–	1 L	E0	P001	–	IBC02	–
1733	ANTIMONY TRICHLORIDE	8	–	II	–	1 kg	E2	P002	–	IBC08	B4 B21
1736	BENZOYL CHLORIDE	8	–	II	–	1 L	E2	P001	–	IBC02	B20
1737	BENZYL BROMIDE	6.1	8	II	–	0	E4	P001	–	IBC02	B20
1738	BENZYL CHLORIDE	6.1	8	II	–	0	E4	P001	–	IBC02	B20
1739	BENZYL CHLOROFORMATE	8	– P	I	–	0	E0	P001	–	–	–
1740	HYDROGENDIFLUORIDES, SOLID, N.O.S.	8	–	II	–	1 kg	E2	P002	–	IBC08	B4 B21
1740	HYDROGENDIFLUORIDES, SOLID, N.O.S.	8	–	III	223	5 kg	E1	P002 LP02	–	IBC08	B3

UN No.	Portable tanks and bulk containers		EmS	Stowage and handling	Segregation	Properties and observations	UN No.
	Tank instructions	Provisions					
(12)	(13) 4.2.5 4.3	(14) 4.2.5	(15) 5.4.3.2 7.8	(16a) 7.1 7.3–7.7	(16b) 7.2–7.7	(17)	(18)
–	T3	TP33	F-A, S-B	Category A SW1 SW2	SG35	White deliquescent crystals. Decomposed by heat or acids, evolving hydrogen fluoride, a toxic, extremely irritating and corrosive gas, apparent as white fumes. In the presence of moisture, highly corrosive to glass, other siliceous materials and most metals. Causes burns to skin and mucous membranes.	1727
–	T10	TP2 TP7 TP13	F-A, S-B	Category C SW2	–	Colourless liquid with a pungent odour. Reacts violently with water, evolving hydrogen chloride, an irritating and corrosive gas apparent as white fumes. When involved in a fire, evolves toxic gases. In the presence of moisture, highly corrosive to most metals. Vapour irritates mucous membranes.	1728
–	T3	TP33	F-A, S-B	Category C SW2	–	Crystalline powder. Melting point: 22°C. Reacts violently with water, evolving hydrogen chloride, an irritating and corrosive gas apparent as white fumes. In the presence of moisture, highly corrosive to most metals. Vapour irritates mucous membranes.	1729
–	T7	TP2	F-A, S-B	Category C SW2	–	Yellow, oily liquid with an offensive odour. May solidify by absorption of moisture. Reacts violently with water, evolving hydrogen chloride, an irritating and corrosive gas apparent as white fumes. In the presence of moisture, highly corrosive to most metals. Causes burns to skin, eyes and mucous membranes.	1730
–	T7	TP2	F-A, S-B	Category C SW2	–	Yellow liquid with an offensive odour. Corrosive to most metals. Causes burns to skin, eyes and mucous membranes.	1731
–	T4	TP1	F-A, S-B	Category C SW2	–	See entry above.	1731
–	T7	TP2	F-A, S-B	Category D SW2	SG6 SG8 SG10 SG12	Colourless liquid with a pungent odour. When anhydrous, mildly corrosive to glass, other siliceous materials and most metals. Reacts violently with water, evolving hydrogen fluoride, an irritating gas, highly corrosive to glass and other siliceous materials and most metals. Powerful oxidant, may cause fire in contact with readily flammable organic substances. Toxic if swallowed, by skin contact or by inhalation. Causes burns to skin and mucous membranes.	1732
–	T3	TP33	F-A, S-B	Category C SW2	–	Reacts slowly with water, evolving hydrogen chloride, an irritating and corrosive gas. In the presence of moisture, corrosive to most metals.	1733
–	T8	TP2 TP13	F-A, S-B	Category C SW2	–	Colourless liquid, very irritating odour, causes tears. Reacts violently with water, evolving hydrogen chloride, an irritating and corrosive gas apparent as white fumes. In the presence of moisture, highly corrosive to most metals. Vapour irritates mucous membranes.	1736
–	T8	TP2 TP13	F-A, S-B	Category D SW2 H1	–	Colourless liquid with a pungent odour, causes tears. In the presence of moisture, corrosive to most metals. Toxic if swallowed, by skin contact or by inhalation. Causes burns to skin, eyes and mucous membranes.	1737
–	T8	TP2 TP13	F-A, S-B	Category D SW2 H1	–	Colourless liquid with a pungent odour. Causes tears. Immiscible with water, but hydrolyses slowly in contact with it. In the presence of moisture, corrosive to most metals. Toxic if swallowed, by skin contact or by vapour inhalation. Causes burns to skin, eyes and mucous membranes.	1738
–	T10	TP2 TP13	F-A, S-B	Category D SW2	–	Colourless liquid with an irritating odour. Reacts with water. When involved in a fire, evolves toxic gases. In the presence of moisture, highly corrosive to most metals. Causes severe burns to skin, eyes and mucous membranes.	1739
–	T3	TP33	F-A, S-B	Category A SW1 SW2	SG35	Crystalline solids. Decomposed by heat or acid, evolving hydrogen fluoride, an extremely irritating and corrosive gas. In the presence of moisture, corrosive to glass, other siliceous materials and most metals. Cause burns to skin, eyes and mucous membranes.	1740
–	T1	TP33	F-A, S-B	Category A SW1 SW2	SG35	See entry above.	1740

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UN No.	Proper shipping name (PSN)	Class or division	Subsidiary risk(s)	Packing group	Special provisions	Limited and excepted quantity provisions		Packing		IBC	
						Limited quantities	Excepted quantities	Instructions	Provisions	Instructions	Provisions
(1)	(2) 3.1.2	(3) 2.0	(4) 2.0	(5) 2.0.1.3	(6) 3.3	(7a) 3.4	(7b) 3.5	(8) 4.1.4	(9) 4.1.4	(10) 4.1.4	(11) 4.1.4
1741	BORON TRICHLORIDE	2.3	8	–	–	0	E0	P200	–	–	–
1742	BORON TRIFLUORIDE ACETIC ACID COMPLEX, LIQUID	8	–	II	–	1 L	E2	P001	–	IBC02	B20
1743	BORON TRIFLUORIDE PROPIONIC ACID COMPLEX, LIQUID	8	–	II	–	500 mL	E2	P001	–	IBC02	B20
1744	BROMINE or BROMINE SOLUTION	8	6.1	I	–	0	E0	P804	–	–	–
1745	BROMINE PENTAFLUORIDE	5.1	6.1/8	I	–	0	E0	P200	–	–	–
1746	BROMINE TRIFLUORIDE	5.1	6.1/8	I	–	0	E0	P200	–	–	–
1747	BUTYLTRICHLOROSILANE	8	3	II	–	0	E0	P010	–	–	–
1748	CALCIUM HYPOCHLORITE, DRY or CALCIUM HYPOCHLORITE MIXTURE, DRY with more than 39% available chlorine (8.8% available oxygen)	5.1	– P	II	314	1 kg	E2	P002	PP85	–	–
1748	CALCIUM HYPOCHLORITE, DRY or CALCIUM HYPOCHLORITE MIXTURE, DRY with more than 39% available chlorine (8.8% available oxygen)	5.1	– P	III	316	5 kg	E1	P002	PP85	–	–

UN No.	Portable tanks and bulk containers		EmS	Stowage and handling	Segregation	Properties and observations	UN No.
	Tank instructions	Provisions					
(12)	(13) 4.2.5 4.3	(14) 4.2.5	(15) 5.4.3.2 7.8	(16a) 7.1 7.3–7.7	(16b) 7.2–7.7	(17)	(18)
–	–	–	F-C, S-U	Category D SW1 SW2	–	Non-flammable, toxic and corrosive gas. Forms dense white corrosive fumes in moist air. Reacts violently with water, evolving hydrogen chloride, an irritating and corrosive gas apparent as white fumes. In the presence of moisture, highly corrosive to most metals. Much heavier than air (2.35). Highly irritating to skin, eyes and mucous membranes.	1741
–	T8	TP2	F-A, S-B	Category A	–	Highly corrosive to most metals. Causes burns to skin, eyes and mucous membranes.	1742
–	T8	TP2	F-A, S-B	Category A	–	Highly corrosive to most metals. Causes burns to skin, eyes and mucous membranes.	1743
–	T22	TP2 TP10 TP13	F-A, S-B	Category D SW1 SW2 H2	SG6 SG16 SG17 SG19	Very dark brown, heavy liquid with an extremely irritating odour. Density: 3.1 (pure product). Boiling point: 59°C. Powerful oxidant; may cause fire in contact with organic materials such as wood, cotton or straw. Highly corrosive to most metals. Solutions have the same properties to a lesser degree, depending on concentration. Toxic if swallowed, by skin contact or by inhalation. Causes burns to skin, eyes and mucous membranes.	1744
–	T22	TP2 TP13	F-A, S-B	Category D SW1 SW2	SG6 SG16 SG19	Colourless, heavy liquid with an extremely irritating odour. Boiling point: 40°C. Powerful oxidant; may cause fire in contact with organic material such as wood, cotton or straw. Reacts violently with water, evolving hydrogen fluoride, a toxic, extremely corrosive gas apparent as white fumes. In contact with acids or acid fumes, evolves highly toxic fumes of bromine, fluorine and their compounds. Highly corrosive to most metals. Toxic if swallowed, by skin contact or by inhalation. Causes burns to skin, eyes and mucous membranes.	1745
–	T22	TP2 TP13	F-A, S-B	Category D SW1 SW2	SG6 SG16 SG19	Colourless, heavy liquid with an extremely irritating odour. Powerful oxidant; may cause fire in contact with organic material such as wood, cotton or straw. Reacts violently with water, evolving hydrogen fluoride, a toxic, extremely corrosive gas apparent as white fumes. In contact with acids or acid fumes, evolves highly toxic fumes of bromine, fluorine and their compounds. Highly corrosive to most metals. Toxic if swallowed, by skin contact or by inhalation. Causes burns to skin, eyes and mucous membranes.	1746
–	T10	TP2 TP7 TP13	F-E, S-C	Category C SW2	–	Colourless, flammable liquid with a pungent odour. Flashpoint: 52°C c.c. Reacts violently with water, evolving hydrogen chloride, an irritating and corrosive gas apparent as white fumes. When involved in a fire, evolves toxic gases. In the presence of moisture, highly corrosive to most metals. Vapour irritates mucous membranes.	1747
–	–	–	F-H, S-Q	Category D SW1 SW11	SG35 SG38 SG49 SG53 SG60	White or yellowish solid (powder, granules or tablets) with chlorine-like odour. Soluble in water. May cause fire in contact with organic material or ammonium compounds. Substances are liable to exothermic decomposition at elevated temperatures. This condition may lead to fire or explosion. Decomposition can be initiated by heat or by impurities (e.g. powdered metals (iron, manganese, cobalt, magnesium) and their compounds). Liable to heat slowly. Reacts with acids, evolving chlorine, an irritating, corrosive and toxic gas. In the presence of moisture, corrosive to most metals. Dust irritates mucous membranes.	1748
–	–	–	F-H, S-Q	Category D SW1 SW11	SG35 SG38 SG49 SG53 SG60	See entry above.	1748

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						Limited quantities	Excepted quantities	Instructions	Provisions	Instructions	Provisions
(1)	(2) 3.1.2	(3) 2.0	(4) 2.0	(5) 2.0.1.3	(6) 3.3	(7a) 3.4	(7b) 3.5	(8) 4.1.4	(9) 4.1.4	(10) 4.1.4	(11) 4.1.4
1749	CHLORINE TRIFLUORIDE	2.3	5.1/8	-	-	0	E0	P200	-	-	-
1750	CHLOROACETIC ACID SOLUTION	6.1	8	II	-	100 mL	E4	P001	-	IBC02	-
1751	CHLOROACETIC ACID, SOLID	6.1	8	II	-	500 g	E4	P002	-	IBC08	B4 B21
1752	CHLOROACETYL CHLORIDE	6.1	8	I	354	0	E0	P602	-	-	-
1753	CHLOROPHENYL-TRICHLOROSILANE	8	- P	II	-	0	E2	P010	-	-	-
1754	CHLOROSULPHONIC ACID (with or without sulphur trioxide)	8	-	I	-	0	E0	P001	-	-	-
1755	CHROMIC ACID SOLUTION	8	-	II	-	1 L	E2	P001	-	IBC02	B20
1755	CHROMIC ACID SOLUTION	8	-	III	223	5 L	E1	P001 LP01	-	IBC03	-
1756	CHROMIC FLUORIDE, SOLID	8	-	II	-	1 kg	E2	P002	-	IBC08	B4 B21
1757	CHROMIC FLUORIDE SOLUTION	8	-	II	-	1 L	E2	P001	-	IBC02	-
1757	CHROMIC FLUORIDE SOLUTION	8	-	III	223	5 L	E1	P001 LP01	-	IBC03	-
1758	CHROMIUM OXYCHLORIDE	8	-	I	-	0	E0	P001	-	-	-
1759	CORROSIVE SOLID, N.O.S.	8	-	I	274	0	E0	P002	-	IBC07	B1
1759	CORROSIVE SOLID, N.O.S.	8	-	II	274	1 kg	E2	P002	-	IBC08	B4 B21
1759	CORROSIVE SOLID, N.O.S.	8	-	III	223 274	5 kg	E1	P002 LP02	-	IBC08	B3

UN No.	Portable tanks and bulk containers		EmS	Stowage and handling	Segregation	Properties and observations	UN No.
	Tank instructions	Provisions					
(12)	(13) 4.2.5 4.3	(14) 4.2.5	(15) 5.4.3.2 7.8	(16a) 7.1 7.3-7.7	(16b) 7.2-7.7	(17)	(18)
-	-	-	F-C, S-W	Category D SW2	SG6 SG19	Non-flammable, toxic and corrosive gas. Forms dense, white, corrosive fumes in moist air. Reacts violently with water, evolving hydrogen fluoride, an irritating and corrosive gas apparent as white fumes. Corrosive to glass and to most metals. Powerful oxidizing agent which may cause fires with combustible materials. Much heavier than air. Highly irritating to skin, eyes and mucous membranes.	1749
-	T7	TP2	F-A, S-B	Category C SW2	-	Colourless liquid. Corrosive to most metals. Toxic if swallowed, by skin contact or by inhalation. Causes burns to skin, eyes and mucous membranes.	1750
-	T3	TP33	F-A, S-B	Category C SW2	-	Colourless, very deliquescent crystals. Melting point may be as low as 50°C. In the presence of moisture, corrosive to most metals. Toxic if swallowed, by skin contact or by dust inhalation. Causes burns to skin, eyes and mucous membranes.	1751
-	T20	TP2 TP13 TP35	F-A, S-B	Category D SW2	-	Colourless liquid, with extremely irritating odour, causing tears. Reacts violently with water, evolving hydrogen chloride, an irritating and corrosive gas apparent as white fumes. In the presence of moisture, highly corrosive to most metals. Highly toxic if swallowed, by skin contact or by inhalation. Causes burns to skin, eyes and mucous membranes.	1752
-	T10	TP2 TP7	F-A, S-B	Category C SW2	-	Colourless liquid with a pungent odour. Reacts violently with water, evolving hydrogen chloride, an irritating and corrosive gas apparent as white fumes. When involved in a fire, evolves toxic gases. In the presence of moisture, highly corrosive to most metals. Irritating to skin, eyes and mucous membranes.	1753
-	T20	TP2	F-A, S-B	Category C SW2	-	Colourless liquid with a pungent odour. Reacts violently with water, evolving hydrogen chloride, an irritating and corrosive gas apparent as white fumes. In the presence of moisture, highly corrosive to most metals. Causes severe burns to skin, eyes and mucous membranes.	1754
-	T8	TP2	F-A, S-B	Category C SW2	SG6 SG8 SG10 SG12	Orange liquid. Powerful oxidant. May cause fire in contact with organic materials such as wood, cotton or straw. Highly corrosive to most metals. Causes burns to skin, eyes and mucous membranes.	1755
-	T4	TP1	F-A, S-B	Category C SW2	SG6 SG8 SG10 SG12	See entry above.	1755
-	T3	TP33	F-A, S-B	Category A	SG35	Green or violet crystals. Slightly soluble in water. Reacts with strong acids, evolving hydrogen fluoride, an extremely irritating and corrosive gas. Mildly corrosive to most metals. Causes burns to skin, eyes and mucous membranes.	1756
-	T7	TP2	F-A, S-B	Category A	-	Green liquid. Reacts with strong acids, evolving hydrogen fluoride, an extremely irritating and corrosive gas. Mildly corrosive to most metals. Causes burns to skin, eyes and mucous membranes.	1757
-	T4	TP1	F-A, S-B	Category A	-	See entry above.	1757
-	T10	TP2	F-A, S-B	Category C SW2	SG6 SG16 SG17 SG19	Dark red liquid. Reacts violently with water, evolving hydrogen chloride and chlorine, both highly irritating and corrosive gases apparent as white fumes. Oxidant; may cause fire in contact with organic materials such as wood, cotton or straw. Highly corrosive to most metals. In the presence of moisture, highly corrosive to most metals. Causes severe burns to skin, eyes and mucous membranes.	1758
-	T6	TP33	F-A, S-B	Category B	-	Causes burns to skin, eyes and mucous membranes.	1759
-	T3	TP33	F-A, S-B	Category A	-	See entry above.	1759
-	T1	TP33	F-A, S-B	Category A	-	See entry above.	1759

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UN No.	Proper shipping name (PSN)	Class or division	Subsidiary risk(s)	Packing group	Special provisions	Limited and excepted quantity provisions		Packing		IBC	
						Limited quantities	Excepted quantities	Instructions	Provisions	Instructions	Provisions
(1)	(2) 3.1.2	(3) 2.0	(4) 2.0	(5) 2.0.1.3	(6) 3.3	(7a) 3.4	(7b) 3.5	(8) 4.1.4	(9) 4.1.4	(10) 4.1.4	(11) 4.1.4
1760	CORROSIVE LIQUID, N.O.S.	8	–	I	274	0	E0	P001	–	–	–
1760	CORROSIVE LIQUID, N.O.S.	8	–	II	274	1 L	E2	P001	–	IBC02	–
1760	CORROSIVE LIQUID, N.O.S.	8	–	III	223 274	5 L	E1	P001 LP01	–	IBC03	–
1761	CUPRIETHYLENEDIAMINE SOLUTION	8	6.1 P	II	–	1 L	E2	P001	–	IBC02	–
1761	CUPRIETHYLENEDIAMINE SOLUTION	8	6.1 P	III	223	5 L	E1	P001	–	IBC03	–
1762	CYCLOHEXYLTRICHLORO-SILANE	8	–	II	–	0	E0	P010	–	–	–
1763	CYCLOHEXYLTRICHLORO-SILANE	8	–	II	–	0	E0	P010	–	–	–
1764	DICHLOROACETIC ACID	8	–	II	–	1 L	E2	P001	–	IBC02	B20
1765	DICHLOROACETYL CHLORIDE	8	–	II	–	1 L	E2	P001	–	IBC02	–
1766	DICHLOROPHENYL-TRICHLOROSILANE	8	– P	II	–	0	E0	P010	–	–	–
1767	DIETHYLDICHLOROSILANE	8	3	II	–	0	E0	P010	–	–	–
1768	DIFLUOROPHOSPHORIC ACID, ANHYDROUS	8	–	II	–	1 L	E2	P001	–	IBC02	B20
1769	DIPHENYLDICHLOROSILANE	8	–	II	–	0	E0	P010	–	–	–
1770	DIPHENYLMETHYL BROMIDE	8	–	II	–	1 kg	E2	P002	–	IBC08	B4 B21
1771	DODECYLTRICHLOROSILANE	8	–	II	–	0	E0	P010	–	–	–
1773	FERRIC CHLORIDE, ANHYDROUS	8	–	III	–	5 kg	E1	P002 LP02	–	IBC08	B3

UN No.	Portable tanks and bulk containers		EmS	Stowage and handling	Segregation	Properties and observations	UN No.
	Tank instructions	Provisions					
(12)	(13) 4.2.5 4.3	(14) 4.2.5	(15) 5.4.3.2 7.8	(16a) 7.1 7.3–7.7	(16b) 7.2–7.7	(17)	(18)
–	T14	TP2 TP27	F-A, S-B	Category B SW2	–	Causes burns to skin, eyes and mucous membranes.	1760
–	T11	TP2 TP27	F-A, S-B	Category B SW2	–	See entry above.	1760
–	T7	TP1 TP28	F-A, S-B	Category A SW2	–	See entry above.	1760
–	T7	TP2	F-A, S-B	Category A	–	Dark purple liquid with an ammonia-like odour. Corrosive to copper, aluminium, zinc and tin. Toxic if swallowed, by skin contact or by inhalation. Causes burns to skin, eyes and mucous membranes.	1761
–	T7	TP1 TP28	F-A, S-B	Category A	–	See entry above.	1761
–	T10	TP2 TP7 TP13	F-A, S-B	Category C SW2	–	Colourless liquid with a pungent odour. Reacts violently with water, evolving hydrogen chloride, an irritating and corrosive gas apparent as white fumes. When involved in a fire, evolves toxic gases. In the presence of moisture, highly corrosive to most metals. Causes burns to skin, eyes and mucous membranes.	1762
–	T10	TP2 TP7 TP13	F-A, S-B	Category C SW2	–	Colourless liquid with a pungent odour. Reacts violently with water, evolving hydrogen chloride, an irritating and corrosive gas apparent as white fumes. When involved in a fire, evolves toxic gases. In the presence of moisture, highly corrosive to most metals. Vapour irritates mucous membranes.	1763
–	T8	TP2	F-A, S-B	Category A	–	Colourless liquid. Melting point: –4°C. Highly corrosive to most metals. Causes burns to skin, eyes and mucous membranes.	1764
–	T7	TP2	F-A, S-B	Category D SW2	–	Colourless liquid with an extremely irritating odour, causing tears. Reacts violently with water, evolving hydrogen chloride, an irritating and corrosive gas apparent as white fumes. In the presence of moisture, highly corrosive to most metals. Causes burns to skin, eyes and mucous membranes.	1765
–	T10	TP2 TP7 TP13	F-A, S-B	Category C SW2	–	Colourless liquid with a pungent odour. Reacts violently with water, evolving hydrogen chloride, an irritating and corrosive gas apparent as white fumes. When involved in a fire, evolves toxic gases. In the presence of moisture, highly corrosive to most metals. Irritating to skin, eyes and mucous membranes.	1766
–	T10	TP2 TP7 TP13	F-E, S-C	Category C SW2	–	Colourless, flammable liquid with a pungent odour. Flashpoint: 25°C c.c. Reacts violently with water, evolving hydrogen chloride, an irritating and corrosive gas apparent as white fumes. When involved in a fire, evolves toxic gases. In the presence of moisture, highly corrosive to most metals. Vapour irritates mucous membranes.	1767
–	T8	TP2	F-A, S-B	Category A SW2	–	Colourless liquid. In the presence of moisture, highly corrosive to glass and other siliceous materials. Harmful if swallowed.	1768
–	T10	TP2 TP7 TP13	F-A, S-B	Category C SW2	–	Colourless liquid with a pungent odour. Reacts violently with water, evolving hydrogen chloride, an irritating and corrosive gas apparent as white fumes. When involved in a fire, evolves toxic gases. In the presence of moisture, highly corrosive to most metals. Vapour irritates mucous membranes.	1769
–	T3	TP33	F-A, S-B	Category D SW2	–	Solid with an irritating odour. Causes tears. Melting point: 45°C. In the presence of moisture, corrosive to most metals. Vapour irritates mucous membranes.	1770
–	T10	TP2 TP7 TP13	F-A, S-B	Category C SW2	–	Colourless liquid with a pungent odour. Reacts violently with water, evolving hydrogen chloride, an irritating and corrosive gas apparent as white fumes. When involved in a fire, evolves toxic gases. In the presence of moisture, highly corrosive to most metals. Causes burns to skin, eyes and mucous membranes.	1771
–	T1	TP33	F-A, S-B	Category A	–	Brown solid. In the presence of moisture, highly corrosive to most metals. The provisions of this Code should not apply to the solid hydrated form.	1773

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						Limited quantities	Excepted quantities	Instructions	Provisions	Instructions	Provisions
(1)	(2) 3.1.2	(3) 2.0	(4) 2.0	(5) 2.0.1.3	(6) 3.3	(7a) 3.4	(7b) 3.5	(8) 4.1.4	(9) 4.1.4	(10) 4.1.4	(11) 4.1.4
1774	FIRE EXTINGUISHER CHARGES corrosive liquid	8	–	II	–	1 L	E0	P001	PP4	–	–
1775	FLUOROBORIC ACID	8	–	II	–	1 L	E2	P001	–	IBC02	–
1776	FLUOROPHOSPHORIC ACID, ANHYDROUS	8	–	II	–	1 L	E2	P001	–	IBC02	B20
1777	FLUOROSULPHONIC ACID	8	–	I	–	0	E0	P001	–	–	–
1778	FLUOROSILICIC ACID	8	–	II	–	1 L	E2	P001	–	IBC02	B20
1779	FORMIC ACID with more than 85% acid, by mass	8	3	II	–	1 L	E2	P001	–	IBC02	–
1780	FUMARYL CHLORIDE	8	–	II	–	1 L	E2	P001	–	IBC02	–
1781	HEXADECYLTRICHLORO-SILANE	8	–	II	–	0	E0	P010	–	–	–
1782	HEXAFLUOROPHOSPHORIC ACID	8	–	II	–	1 L	E2	P001	–	IBC02	B20
1783	HEXAMETHYLENEDIAMINE SOLUTION	8	–	II	–	1 L	E2	P001	–	IBC02	–
1783	HEXAMETHYLENEDIAMINE SOLUTION	8	–	III	223	5 L	E1	P001 LP01	–	IBC03	–
1784	HEXYLTRICHLOROSILANE	8	–	II	–	0	E0	P010	–	–	–
1786	HYDROFLUORIC ACID AND SULPHURIC ACID MIXTURE	8	6.1	I	–	0	E0	P001	–	–	–
1787	HYDRIODIC ACID	8	–	II	–	1 L	E2	P001	–	IBC02	–
1787	HYDRIODIC ACID	8	–	III	223	5 L	E1	P001 LP01	–	IBC03	–
1788	HYDROBROMIC ACID	8	–	II	–	1 L	E2	P001	–	IBC02	–
1788	HYDROBROMIC ACID	8	–	III	223	5 L	E1	P001 LP01	–	IBC03	–

UN No.	Portable tanks and bulk containers		EmS	Stowage and handling	Segregation	Properties and observations	UN No.
	Tank instructions	Provisions					
(12)	(13) 4.2.5 4.3	(14) 4.2.5	(15) 5.4.3.2 7.8	(16a) 7.1 7.3–7.7	(16b) 7.2–7.7	(17)	(18)
–	–	–	F-A, S-B	Category A	–	Usually, diluted sulphuric acid in small glass receptacles.	1774
–	T7	TP2	F-A, S-B	Category A	–	Colourless, clear liquid. Corrosive to most metals. May cause severe burns to skin, eyes and mucous membranes if containing free hydrofluoric acid.	1775
–	T8	TP2	F-A, S-B	Category A	–	Colourless liquid. In the presence of moisture, highly corrosive to glass, other siliceous materials and most metals. Causes burns to skin, eyes and mucous membranes.	1776
–	T10	TP2	F-A, S-B	Category D SW2	–	Colourless liquid with a pungent odour. Reacts violently with water, evolving hydrogen fluoride, an extremely irritating and corrosive gas apparent as white fumes. In the presence of moisture, highly corrosive to glass, other siliceous materials and most metals. Causes severe burns to skin, eyes and mucous membranes.	1777
–	T8	TP2	F-A, S-B	Category A	–	Colourless liquid. Highly corrosive to most metals. May cause severe burns to skin, eyes and mucous membranes if containing free hydrofluoric acid.	1778
–	T7	TP2	F-E, S-C	Category A SW2	–	Colourless flammable liquid with a pungent odour. Pure FORMIC ACID: flashpoint 42°C c.c. Corrosive to most metals. Causes burns to skin, eyes and mucous membranes.	1779
–	T7	TP2	F-A, S-B	Category C SW2	–	Yellow liquid. Reacts violently with water, evolving hydrogen chloride, an irritating and corrosive gas apparent as white fumes. In the presence of moisture, highly corrosive to most metals. Causes burns to skin, eyes and mucous membranes.	1780
–	T10	TP2 TP7 TP13	F-A, S-B	Category C SW2	–	Colourless liquid with a pungent odour. Reacts violently with water, evolving hydrogen chloride, an irritating and corrosive gas apparent as white fumes. When involved in a fire, evolves toxic gases. In the presence of moisture, highly corrosive to most metals. Vapour irritates mucous membranes.	1781
–	T8	TP2	F-A, S-B	Category A	–	Colourless liquid. In the presence of moisture, highly corrosive to glass, other siliceous materials and most metals. Causes burns to skin, eyes and mucous membranes. Harmful if swallowed.	1782
–	T7	TP2	F-A, S-B	Category A	–	Colourless liquid. Causes burns to skin, eyes and mucous membranes.	1783
–	T4	TP1	F-A, S-B	Category A	–	See entry above.	1783
–	T10	TP2 TP7 TP13	F-A, S-B	Category C SW2	–	Colourless liquid with a pungent odour. Reacts violently with water, evolving hydrogen chloride, an irritating and corrosive gas apparent as white fumes. When involved in a fire, evolves toxic gases. In the presence of moisture, highly corrosive to most metals. Causes burns to skin, eyes and mucous membranes.	1784
–	T10	TP2 TP13	F-A, S-B	Category D SW2	–	Colourless syrupy liquid with a pungent odour. Mixture consists of between 70% and 80% by mass of acids and contains not less than 25% by mass of hydrofluoric acid. Reacts violently with water, developing heat. Highly corrosive to glass, other siliceous materials and most metals. Toxic if swallowed, by skin contact or by inhalation. Causes severe burns to skin and mucous membranes.	1786
–	T7	TP2	F-A, S-B	Category C	–	Colourless liquid. An aqueous solution of the gas hydrogen iodide. Highly corrosive to most metals. Causes burns to skin, eyes and mucous membranes.	1787
–	T4	TP1	F-A, S-B	Category C	–	See entry above.	1787
–	T7	TP2	F-A, S-B	Category C	–	Colourless liquid. An aqueous solution of the gas hydrogen bromide. Highly corrosive to most metals. Causes burns to skin, eyes and mucous membranes.	1788
–	T4	TP1	F-A, S-B	Category C	–	See entry above.	1788

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						Limited quantities	Excepted quantities	Instructions	Provisions	Instructions	Provisions
(1)	(2) 3.1.2	(3) 2.0	(4) 2.0	(5) 2.0.1.3	(6) 3.3	(7a) 3.4	(7b) 3.5	(8) 4.1.4	(9) 4.1.4	(10) 4.1.4	(11) 4.1.4
1789	HYDROCHLORIC ACID	8	–	II	–	1 L	E2	P001	–	IBC02	B20
1789	HYDROCHLORIC ACID	8	–	III	223	5 L	E1	P001 LP01	–	IBC03	–
1790	HYDROFLUORIC ACID solution, with more than 60% hydrogen fluoride	8	6.1	I	–	0	E0	P802	PP79 PP81	–	–
1790	HYDROFLUORIC ACID solution, with not more than 60% hydrogen fluoride	8	6.1	II	–	1 L	E2	P001	PP81	IBC02	B20
1791	HYPOCHLORITE SOLUTION	8	– P	II	–	1 L	E2	P001	PP10	IBC02	B5
1791	HYPOCHLORITE SOLUTION	8	– P	III	223	5 L	E1	P001 LP01	–	IBC03	–
1792	IODINE MONOCHLORIDE, SOLID	8	–	II	–	1 kg	E0	P002	–	IBC08	B4 B21
1793	ISOPROPYL ACID PHOSPHATE	8	–	III	–	5 L	E1	P001 LP01	–	IBC02	–
1794	LEAD SULPHATE with more than 3% free acid	8	–	II	–	1 kg	E2	P002	–	IBC08	B4 B21
1796	NITRATING ACID MIXTURE with more than 50% nitric acid	8	5.1	I	–	0	E0	P001	–	–	–
1796	NITRATING ACID MIXTURE with not more than 50% nitric acid	8	–	II	–	1 L	E0	P001	–	IBC02	B20
1798	NITROHYDROCHLORIC ACID	8	–	I	–	0	E0	P802	–	–	–
1799	NONYLTRICHLOROSILANE	8	–	II	–	0	E0	P010	–	–	–
1800	OCTADECYLTRICHLORO-SILANE	8	–	II	–	0	E0	P010	–	–	–
1801	OCTYLTRICHLOROSILANE	8	–	II	–	0	E0	P010	–	–	–
1802	PERCHLORIC ACID with not more than 50% acid, by mass	8	5.1	II	–	1 L	E0	P001	–	IBC02	–

UN No.	Portable tanks and bulk containers		EmS	Stowage and handling	Segregation	Properties and observations	UN No.
	Tank instructions	Provisions					
(12)	(13) 4.2.5 4.3	(14) 4.2.5	(15) 5.4.3.2 7.8	(16a) 7.1 7.3–7.7	(16b) 7.2–7.7	(17)	(18)
–	T8	TP2	F-A, S-B	Category C	–	Colourless liquid. An aqueous solution of the gas hydrogen chloride. Highly corrosive to most metals. Causes burns to skin, eyes and mucous membranes.	1789
–	T4	TP1	F-A, S-B	Category C	–	See entry above.	1789
–	T10	TP2 TP13	F-A, S-B	Category D SW1 SW2 H2	–	Colourless liquid with an irritating odour. Highly corrosive to glass, other siliceous materials and most metals. Toxic if swallowed, by skin contact or by inhalation. Both the liquid and its fumes cause severe burns to skin, eyes and mucous membranes.	1790
–	T8	TP2	F-A, S-B	Category D SW1 SW2 H2	–	See entry above.	1790
–	T7	TP2 TP24	F-A, S-B	Category B	SG20	Liquid with chlorine odour. In contact with acids, evolves very irritating and corrosive gases. Mildly corrosive to most metals. Causes burns to skin, eyes and mucous membranes.	1791
–	T4	TP2 TP24	F-A, S-B	Category B	SG20	See entry above.	1791
–	T7	TP2	F-A, S-B	Category D SW2	SG6 SG16 SG17 SG19	Red, brown or black crystals. Reacts violently with water, evolving irritating and corrosive gases apparent as white fumes. Powerful oxidant; may cause fire in contact with organic materials such as wood, cotton or straw. In the presence of moisture, highly corrosive to most metals. Vapour irritates mucous membranes.	1792
–	T4	TP1	F-A, S-B	Category A	–	Oily liquid. Mildly corrosive to most metals.	1793
–	T3	TP33	F-A, S-B	Category A	–	May be dry solid or slurry. Corrosive to most metals. Harmful if swallowed.	1794
–	T10	TP2 TP13	F-A, S-Q	Category D SW2	SG16	Mixture of concentrated nitric and sulphuric acids. Oxidant; may cause fire in contact with organic materials such as wood, cotton or straw, developing highly toxic gas (brown fumes). Highly corrosive to most metals. Causes severe burns to skin, eyes and mucous membranes.	1796
–	T8	TP2 TP13	F-A, S-B	Category D SW2	–	See entry above.	1796
–	T10	TP2 TP13	F-A, S-B	Category D SW2	SG6 SG16 SG17 SG19	Yellow liquid; a mixture of nitric acid and hydrochloric acid, usually in the proportion of 1:3. Powerful oxidant; may cause fire in contact with organic materials such as wood, cotton or straw, evolving suffocating and highly toxic gases. Highly corrosive to all metals. Causes severe burns to skin, eyes and mucous membranes.	1798
–	T10	TP2 TP7 TP13	F-A, S-B	Category C SW2	–	Colourless liquid with a pungent odour. Reacts violently with water, evolving hydrogen chloride, an irritating and corrosive gas apparent as white fumes. When involved in a fire, evolves toxic gases. In the presence of moisture, highly corrosive to most metals. Causes burns to skin, eyes and mucous membranes.	1799
–	T10	TP2 TP7 TP13	F-A, S-B	Category C SW2	–	Colourless liquid with a pungent odour. Reacts violently with water, evolving hydrogen chloride, an irritating and corrosive gas apparent as white fumes. When involved in a fire, evolves toxic gases. In the presence of moisture, highly corrosive to most metals. Vapour irritates mucous membranes.	1800
–	T10	TP2 TP7 TP13	F-A, S-B	Category C SW2	–	Colourless liquid with a pungent odour. Reacts violently with water, evolving hydrogen chloride, an irritating and corrosive gas apparent as white fumes. When involved in a fire, evolves toxic gases. In the presence of moisture, highly corrosive to most metals. Vapour irritates mucous membranes.	1801
–	T7	TP2	F-H, S-Q	Category C	SG16	Colourless liquid. Oxidant. Highly corrosive to most metals.	1802

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						Limited quantities	Excepted quantities	Instructions	Provisions	Instructions	Provisions
(1)	(2) 3.1.2	(3) 2.0	(4) 2.0	(5) 2.0.1.3	(6) 3.3	(7a) 3.4	(7b) 3.5	(8) 4.1.4	(9) 4.1.4	(10) 4.1.4	(11) 4.1.4
1803	PHENOLSULPHONIC ACID, LIQUID	8	-	II	-	1 L	E2	P001	-	IBC02	-
1804	PHENYLTRICHLOROSILANE	8	-	II	-	0	E0	P010	-	-	-
1805	PHOSPHORIC ACID SOLUTION	8	-	III	223	5 L	E1	P001 LP01	-	IBC03	-
1806	PHOSPHORUS PENTACHLORIDE	8	-	II	-	1 kg	E0	P002	-	IBC08	B4 B21
1807	PHOSPHORUS PENTOXIDE	8	-	II	-	1 kg	E2	P002	-	IBC08	B4 B21
1808	PHOSPHORUS TRIBROMIDE	8	-	II	-	1 L	E0	P001	-	IBC02	-
1809	PHOSPHORUS TRICHLORIDE	6.1	8	I	354	0	E0	P602	-	-	-
1810	PHOSPHORUS OXYCHLORIDE	6.1	8	I	354	0	E0	P602	-	-	-
1811	POTASSIUM HYDROGEN DIFLUORIDE, SOLID	8	6.1	II	-	1 kg	E2	P002	-	IBC08	B4 B21
1812	POTASSIUM FLUORIDE, SOLID	6.1	-	III	-	5 kg	E1	P002 LP02	-	IBC08	B3
1813	POTASSIUM HYDROXIDE, SOLID	8	-	II	-	1 kg	E2	P002	-	IBC08	B4 B21
1814	POTASSIUM HYDROXIDE SOLUTION	8	-	II	-	1 L	E2	P001	-	IBC02	-
1814	POTASSIUM HYDROXIDE SOLUTION	8	-	III	223	5 L	E1	P001 LP01	-	IBC03	-
1815	PROPIONYL CHLORIDE	3	8	II	-	1 L	E2	P001	-	IBC02	-

(12)	Portable tanks and bulk containers		EmS	Stowage and handling	Segregation	Properties and observations	UN No.
	Tank instructions	Provisions					
(13) 4.2.5 4.3	(14) 4.2.5	(15) 5.4.3.2 7.8	(16a) 7.1 7.3-7.7	(16b) 7.2-7.7	(17)	(18)	
-	T7	TP2	F-A, S-B	Category C SW15	-	Yellow, oily liquid. Corrosive to most metals.	1803
-	T10	TP2 TP7 TP13	F-A, S-B	Category C SW2	-	Colourless liquid with a pungent odour. Reacts violently with water, evolving hydrogen chloride, an irritating and corrosive gas apparent as white fumes. When involved in a fire, evolves toxic gases. In the presence of moisture, highly corrosive to most metals. Vapour irritates mucous membranes.	1804
-	T4	TP1	F-A, S-B	Category A	-	Miscible in water. Mildly corrosive to most metals.	1805
-	T3	TP33	F-A, S-B	Category C SW2	SG6 SG8 SG10 SG12	Colourless, crystalline powder. Reacts violently with water, evolving hydrogen chloride, an irritating and corrosive gas apparent as white fumes. Powerful oxidant; may cause fire in contact with organic materials such as wood, cotton or straw. In the presence of moisture, highly corrosive to most metals.	1806
-	T3	TP33	F-A, S-B	Category A	-	Crystalline powder, very deliquescent. Reacts violently with water and organic materials such as wood, cotton or straw, generating heat. In the presence of moisture, mildly corrosive to most metals.	1807
-	T7	TP2	F-A, S-B	Category C SW2	-	Colourless liquid with a pungent odour. Reacts violently with water, evolving hydrogen bromide, an irritating and corrosive gas apparent as white fumes. In the presence of moisture, highly corrosive to most metals. Causes burns to skin, eyes and mucous membranes.	1808
-	T20	TP2 TP13 TP35	F-A, S-B	Category D SW2	-	Colourless liquid with a pungent odour. Reacts violently with water, evolving hydrogen chloride, an irritating and corrosive gas apparent as white fumes. In the presence of moisture, highly corrosive to most metals. Highly toxic if swallowed, by skin contact or by inhalation. Causes burns to skin, eyes and mucous membranes.	1809
-	T20	TP2 TP13 TP37	F-A, S-B	Category D SW2	-	Colourless liquid with a pungent odour. Reacts violently with water, evolving hydrogen chloride, an irritating and corrosive gas apparent as white fumes. In the presence of moisture, highly corrosive to most metals. Causes burns to skin, eyes and mucous membranes. Highly toxic if swallowed, by skin contact or by inhalation.	1810
-	T3	TP33	F-A, S-B	Category A SW1 SW2	SG35	White crystalline solid. Decomposed by heat or acids, evolving hydrogen fluoride, a toxic, extremely irritating and corrosive gas apparent as white fumes. In the presence of moisture, highly corrosive to glass, other siliceous materials and most metals. Toxic if swallowed, by skin contact or by inhalation. Causes burns to skin, eyes and mucous membranes.	1811
-	T1	TP33	F-A, S-A	Category A	SG35	White, deliquescent crystals or powder. Decomposed by acids, evolving hydrogen fluoride, an irritating and corrosive gas. Toxic if swallowed, by skin contact or by inhalation.	1812
-	T3	TP33	F-A, S-B	Category A	SG35	White pellets, flakes, lumps or solid blocks, deliquescent. Reacts with ammonium salts, evolving ammonia gas. In the presence of moisture, corrosive to aluminium, zinc and tin. Causes burns to skin, eyes and mucous membranes. Reacts violently with acids.	1813
-	T7	TP2	F-A, S-B	Category A	SG35	Colourless liquid. Reacts with ammonium salts, evolving ammonia gas. Corrosive to aluminium, zinc and tin. Causes burns to skin, eyes and mucous membranes. Reacts violently with acids.	1814
-	T4	TP1	F-A, S-B	Category A	SG35	See entry above.	1814
-	T7	TP1	F-E, S-C	Category B SW2	-	Colourless liquid. Flashpoint: 12°C c.c. Reacts violently with water, evolving hydrogen chloride, an irritating and corrosive gas, apparent as white fumes. In the presence of moisture, highly corrosive to most metals. Causes burns to skin, eyes and mucous membranes.	1815

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						Limited quantities	Excepted quantities	Instructions	Provisions	Instructions	Provisions
(1)	(2) 3.1.2	(3) 2.0	(4) 2.0	(5) 2.0.1.3	(6) 3.3	(7a) 3.4	(7b) 3.5	(8) 4.1.4	(9) 4.1.4	(10) 4.1.4	(11) 4.1.4
1816	PROPYLTRICHLOROSILANE	8	3	II	-	0	E0	P010	-	-	-
1817	PYROSULPHURYL CHLORIDE	8	-	II	-	1 L	E2	P001	-	IBC02	-
1818	SILICON TETRACHLORIDE	8	-	II	-	0	E0	P010	-	-	-
1819	SODIUM ALUMINATE SOLUTION	8	-	II	-	1 L	E2	P001	-	IBC02	-
1819	SODIUM ALUMINATE SOLUTION	8	-	III	223	5 L	E1	P001 LP01	-	IBC03	-
1823	SODIUM HYDROXIDE, SOLID	8	-	II	-	1 kg	E2	P002	-	IBC08	B4 B21
1824	SODIUM HYDROXIDE SOLUTION	8	-	II	-	1 L	E2	P001	-	IBC02	-
1824	SODIUM HYDROXIDE SOLUTION	8	-	III	223	5 L	E1	P001 LP01	-	IBC03	-
1825	SODIUM MONOXIDE	8	-	II	-	1 kg	E2	P002	-	IBC08	B4 B21
1826	NITRATING ACID MIXTURE, SPENT with more than 50% nitric acid	8	5.1	I	113	0	E0	P001	-	-	-
1826	NITRATING ACID MIXTURE, SPENT with not more than 50% nitric acid	8	-	II	113	1 L	E0	P001	-	IBC02	B20
1827	STANNIC CHLORIDE, ANHYDROUS	8	-	II	-	1 L	E2	P001	-	IBC02	-
1828	SULPHUR CHLORIDES	8	-	I	-	0	E0	P602	-	-	-
1829	SULPHUR TRIOXIDE, STABILIZED	8	-	I	386	0	E0	P001	-	-	-
1830	SULPHURIC ACID with more than 51% acid	8	-	II	-	1 L	E2	P001	-	IBC02	B20

UN No.	Portable tanks and bulk containers		EmS	Stowage and handling	Segregation	Properties and observations	UN No.
	Tank instructions	Provisions					
(12)	(13) 4.2.5 4.3	(14) 4.2.5	(15) 5.4.3.2 7.8	(16a) 7.1 7.3-7.7	(16b) 7.2-7.7	(17)	(18)
-	T10	TP2 TP7 TP13	F-E, S-C	Category C SW2	-	Colourless, flammable liquid, with a pungent odour. Flashpoint: 38°C c.c. Reacts violently with water, evolving hydrogen chloride, an irritating and corrosive gas apparent as white fumes. When involved in a fire, evolves toxic gases. In the presence of moisture, highly corrosive to most metals. Vapour irritates mucous membranes.	1816
-	T8	TP2	F-A, S-B	Category C SW2	-	Colourless liquid with a pungent odour. Reacts violently with water, evolving hydrogen chloride, an irritating and corrosive gas apparent as white fumes. In the presence of moisture, highly corrosive to most metals. Vapour irritates mucous membranes.	1817
-	T10	TP2 TP7 TP13	F-A, S-B	Category C SW2	SG72	Colourless, extremely mobile liquid with a suffocating odour. Reacts violently with water, evolving hydrogen chloride, an irritating and corrosive gas apparent as white fumes. In the presence of moisture, highly corrosive to most metals. Vapour irritates mucous membranes.	1818
-	T7	TP2	F-A, S-B	Category A	SG35	Colourless liquid. Reacts with ammonium salts, evolving ammonia gas. Corrosive to aluminium, zinc and tin. Causes burns to skin, eyes and mucous membranes. Reacts violently with acids.	1819
-	T4	TP1	F-A, S-B	Category A	SG35	See entry above.	1819
-	T3	TP33	F-A, S-B	Category A	SG35	White pellets, flakes, lumps or solid blocks, deliquescent. Reacts with ammonium salts, evolving ammonia gas. In the presence of moisture, corrosive to aluminium, zinc and tin. Causes burns to skin, eyes and mucous membranes. Reacts violently with acids.	1823
-	T7	TP2	F-A, S-B	Category A	SG35	Colourless liquid. Corrosive to aluminium, zinc and tin. Reacts with ammonium salts, evolving ammonia gas. Causes burns to skin, eyes and mucous membranes. Reacts violently with acids.	1824
-	T4	TP1	F-A, S-B	Category A	SG35	See entry above.	1824
-	T3	TP33	F-A, S-B	Category A	SG35	Deliquescent crystalline solid. Reacts violently with water and acids, generating heat. Reacts with ammonium salts, evolving ammonia gas. In the presence of moisture, corrosive to aluminium, zinc and tin. Causes burns to skin, eyes and mucous membranes.	1825
-	T10	TP2 TP13	F-A, S-Q	Category D SW2	SG16	Usually a mixture of acids which has been used for nitration processes. Highly corrosive to most metals. Causes severe burns to skin, eyes and mucous membranes. Prohibited for shipment unless the mixture is (1) chemically stable; and (2) certified as containing no explosive impurities.	1826
-	T8	TP2	F-A, S-B	Category D SW2	-	See entry above.	1826
-	T7	TP2	F-A, S-B	Category C	-	Colourless liquid. In the presence of water, corrosive to most metals. Vapour irritates mucous membranes.	1827
-	T20	TP2	F-A, S-B	Category C SW2	-	Red liquids with a suffocating odour. React violently with water, evolving hydrogen chloride and sulphur dioxide, irritating and corrosive gases. In the presence of moisture, highly corrosive to most metals. Causes severe burns to skin, eyes and mucous membranes.	1828
-	T20	TP4 TP13 TP25 TP26	F-A, S-B	Category C SW1 SW2	-	Very deliquescent solid. Melting point may be as low as 17°C. Reacts violently with water, generating heat. May cause fire in contact with organic materials such as wood, cotton or straw. In the presence of moisture, highly corrosive to most metals. Causes severe burns to skin, eyes and mucous membranes.	1829
-	T8	TP2	F-A, S-B	Category C SW15	-	Colourless, oily liquid, mixture over 1.41 up to 1.84 relative density. In the presence of moisture, highly corrosive to most metals. Causes burns to skin, eyes and mucous membranes.	1830

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						Limited quantities	Excepted quantities	Instructions	Provisions	Instructions	Provisions
(1)	(2) 3.1.2	(3) 2.0	(4) 2.0	(5) 2.0.1.3	(6) 3.3	(7a) 3.4	(7b) 3.5	(8) 4.1.4	(9) 4.1.4	(10) 4.1.4	(11) 4.1.4
1831	SULPHURIC ACID, FUMING	8	6.1	I	–	0	E0	P602	–	–	–
1832	SULPHURIC ACID, SPENT	8	–	II	113	1 L	E0	P001	–	IBC02	B20
1833	SULPHUROUS ACID	8	–	II	–	1 L	E2	P001	–	IBC02	–
1834	SULPHURYL CHLORIDE	6.1	8	I	354	0	E0	P602	–	–	–
1835	TETRAMETHYLAMMONIUM HYDROXIDE SOLUTION	8	–	II	–	1 L	E2	P001	–	IBC02	–
1835	TETRAMETHYLAMMONIUM HYDROXIDE SOLUTION	8	–	III	223	5 L	E1	P001 LP01	–	IBC03	–
1836	THIONYL CHLORIDE	8	–	I	–	0	E0	P802	–	–	–
1837	THIOPHOSPHORYL CHLORIDE	8	–	II	–	1 L	E0	P001	–	IBC02	–
1838	TITANIUM TETRACHLORIDE	6.1	8	I	354	0	E0	P602	–	–	–
1839	TRICHLOROACETIC ACID, SOLID	8	–	II	–	1 kg	E2	P002	–	IBC08	B4 B21
1840	ZINC CHLORIDE SOLUTION	8	– P	III	223	5 L	E1	P001 LP01	–	IBC03	–
1841	ACETALDEHYDE AMMONIA	9	–	III	–	5 kg	E1	P002 LP02	–	IBC08	B3 B6
1843	AMMONIUM DINITRO- <i>o</i> -CRESOLATE, SOLID	6.1	– P	II	–	500 g	E4	P002	–	IBC08	B4 B21
1845	CARBON DIOXIDE, SOLID (DRY ICE)	9	–	–	–	0	E0	P003	PP18	–	–
1846	CARBON TETRACHLORIDE	6.1	– P	II	–	100 mL	E4	P001	–	IBC02	–
1847	POTASSIUM SULPHIDE, HYDRATED with not less than 30% water of crystallization	8	–	II	–	1 kg	E2	P002	–	IBC08	B4 B21

UN No.	Portable tanks and bulk containers		EmS	Stowage and handling	Segregation	Properties and observations	UN No.
	Tank instructions	Provisions					
(12)	(13) 4.2.5 4.3	(14) 4.2.5	(15) 5.4.3.2 7.8	(16a) 7.1 7.3–7.7	(16b) 7.2–7.7	(17)	(18)
–	T20	TP2 TP13	F-A, S-B	Category C SW2 SW15	–	Colourless, oily liquid, may be partly crystallized. Solution of varying quantities of sulphur trioxide in sulphuric acid. Reacts violently with water and organic material, generating heat. In the presence of moisture, highly corrosive to most metals. Toxic if swallowed, by skin contact or by inhalation. Causes severe burns to skin, eyes and mucous membranes.	1831
–	T8	TP2	F-A, S-B	Category C SW15	–	Sulphuric acid, usually of high concentration, which has been used for chemical processes. Highly corrosive to most metals.	1832
–	T7	TP2	F-A, S-B	Category B SW2	–	Solution of sulphur dioxide in water, with a suffocating odour. Corrosive to most metals. Vapour irritates mucous membranes.	1833
–	T20	TP2 TP13	F-A, S-B	Category D SW2	–	Colourless liquid with a pungent odour. Boiling point: 69°C. Reacts violently with water, evolving hydrogen chloride, an irritating and corrosive gas apparent as white fumes. In the presence of moisture, highly corrosive to most metals. Causes severe burns to skin, eyes and mucous membranes. Highly toxic if swallowed, by skin contact or by inhalation.	1834
–	T7	TP2	F-A, S-B	Category A	SG35	Miscible with water. Reacts violently with acids.	1835
–	T7	TP2	F-A, S-B	Category A	SG35	See entry above.	1835
–	T10	TP2 TP13	F-A, S-B	Category C SW2	–	Yellow or red liquid. Boiling point: 79°C. Reacts violently with water, evolving hydrogen chloride and sulphur dioxide, irritating and corrosive gases. In the presence of moisture, highly corrosive to most metals. Causes severe burns to skin, eyes and mucous membranes.	1836
–	T7	TP2	F-A, S-B	Category C SW2	–	Colourless liquid with a pungent odour. Reacts violently with water, evolving hydrogen chloride, an irritating and corrosive gas apparent as white fumes. In the presence of moisture, highly corrosive to most metals. Vapour irritates mucous membranes.	1837
–	T20	TP2 TP13 TP37	F-A, S-B	Category D SW2	–	Colourless liquid. Reacts violently with water, evolving hydrogen chloride, an irritating and corrosive gas apparent as white fumes. In the presence of moisture, highly corrosive to most metals. Highly toxic if swallowed, by skin contact or by inhalation. Causes burns to skin, eyes and mucous membranes.	1838
–	T3	TP33	F-A, S-B	Category A	–	Colourless, deliquescent crystals. Melting point of the pure substance: 58°C. In the presence of moisture, corrosive to most metals. Causes burns to skin, eyes and mucous membranes.	1839
–	T4	TP2	F-A, S-B	Category A	–	Colourless liquid. Mildly corrosive to most metals. Causes burns to skin, eyes and mucous membranes.	1840
–	T1	TP33	F-A, S-B	Category A	SG29	White crystalline solid. Soluble in water. When heated, decomposes into ammonia and acetaldehyde.	1841
–	T3	TP33	F-A, S-A	Category B	SG15 SG16 SG30 SG63	May support combustion and burn without oxygen. When involved in a fire, evolves toxic fumes. Forms extremely sensitive explosive compounds with lead, silver or other heavy metals and their compounds. Toxic if swallowed, by skin contact or by inhalation.	1843
–	–	–	F-C, S-V	Category C SW2	–	Non-flammable gas in a white solid form. Slowly evolves vapours which are heavier than air (1.5). Inhalation of vapours may lead to unconsciousness. Can cause severe burns when in contact with the skin.	1845
–	T7	TP2	F-A, S-A	Category A SW2	–	Colourless, volatile liquid with a heavy anaesthetic vapour. Non-flammable; when involved in a fire, evolves extremely toxic fumes (phosgene). Toxic if swallowed, by skin contact or by inhalation.	1846
–	T3	TP33	F-A, S-B	Category A	SG35	Crystalline solid. Melting point: 60°C. Reacts violently with acids, evolving hydrogen sulphide, a toxic and flammable gas. Mildly corrosive to most metals. Causes burns to skin, eyes and mucous membranes.	1847

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						Limited quantities	Excepted quantities	Instructions	Provisions	Instructions	Provisions
(1)	(2) 3.1.2	(3) 2.0	(4) 2.0	(5) 2.0.1.3	(6) 3.3	(7a) 3.4	(7b) 3.5	(8) 4.1.4	(9) 4.1.4	(10) 4.1.4	(11) 4.1.4
1848	PROPIONIC ACID with not less than 10% and less than 90% acid, by mass	8	–	III	–	5 L	E1	P001 LP01	–	IBC03	–
1849	SODIUM SULPHIDE, HYDRATED with not less than 30% water	8	–	II	–	1 kg	E2	P002	–	IBC08	B4 B21
1851	MEDICINE, LIQUID, TOXIC, N.O.S.	6.1	–	II	221	100 mL	E4	P001	–	–	–
1851	MEDICINE, LIQUID, TOXIC, N.O.S.	6.1	–	III	221 223	5 L	E1	P001 LP01	–	–	–
1854	BARIUM ALLOYS, PYROPHORIC	4.2	–	I	–	0	E0	P404	PP31	–	–
1855	CALCIUM, PYROPHORIC or CALCIUM ALLOYS, PYROPHORIC	4.2	–	I	–	0	E0	P404	PP31	–	–
1856	RAGS, OILY	4.2	–	–	29 117	0	E0	P003	PP19	IBC08	B3 B6
1857	TEXTILE WASTE, WET	4.2	–	III	117	0	E1	P410	–	–	–
1858	HEXAFLUOROPROPYLENE (REFRIGERANT GAS R 1216)	2.2	–	–	–	120 mL	E1	P200	–	–	–
1859	SILICON TETRAFLUORIDE	2.3	8	–	–	0	E0	P200	–	–	–
1860	VINYL FLUORIDE, STABILIZED	2.1	–	–	386	0	E0	P200	–	–	–
1862	ETHYL CROTONATE	3	–	II	–	1 L	E2	P001	–	IBC02	–
1863	FUEL, AVIATION, TURBINE ENGINE	3	–	I	–	500 mL	E3	P001	–	–	–
1863	FUEL, AVIATION, TURBINE ENGINE	3	–	II	–	1 L	E2	P001	–	IBC02	–
1863	FUEL, AVIATION, TURBINE ENGINE	3	–	III	223	5 L	E1	P001 LP01	–	IBC03	–
1865	n-PROPYL NITRATE	3	–	II	26	1 L	E2	P001	–	–	–
1866	RESIN SOLUTION flammable	3	–	I	–	500 mL	E3	P001	–	–	–
1866	RESIN SOLUTION flammable	3	–	II	–	5 L	E2	P001	PP1	IBC02	–
1866	RESIN SOLUTION flammable	3	–	III	223 955	5 L	E1	P001 LP01	PP1	IBC03	–
1868	DECABORANE	4.1	6.1	II	–	1 kg	E0	P002	PP31	IBC06	B21

UN No.	Portable tanks and bulk containers		EmS	Stowage and handling	Segregation	Properties and observations	UN No.
	Tank instructions	Provisions					
(12)	(13) 4.2.5 4.3	(14) 4.2.5	(15) 5.4.3.2 7.8	(16a) 7.1 7.3–7.7	(16b) 7.2–7.7	(17)	(18)
–	T4	TP1	F-A, S-B	Category A	–	Colourless liquid with a pungent odour. Miscible with water. Corrosive to lead and most other metals. Burns skin. Vapours irritate mucous membranes.	1848
–	T3	TP33	F-A, S-B	Category A	SG35	Yellow-pink or white deliquescent crystals, flakes or lumps. Melting point: 50°C. Soluble in water. Reacts violently with acids, evolving hydrogen sulphide, a toxic and flammable gas. Mildly corrosive to most metals. Causes burns to skin, eyes and mucous membranes.	1849
–	–	–	F-A, S-A	Category C SW2	–	Toxic if swallowed, by skin contact or by inhalation.	1851
–	–	–	F-A, S-A	Category C SW2	–	See entry above.	1851
–	T21	TP7 TP33	F-G, S-M	Category D H1	SG26	Liable to ignite spontaneously in air. If shaken, may produce sparks. In contact with water, evolve hydrogen, a flammable gas.	1854
–	–	–	F-G, S-M	Category D H1	SG26	Liable to ignite spontaneously in air. If shaken, may produce sparks. In contact with water, evolve hydrogen, a flammable gas.	1855
–	–	–	F-A, S-J	Category A	–	Liable to ignite spontaneously in air according to oil content.	1856
–	–	–	F-A, S-J	Category A	–	Liable to ignite spontaneously in air according to moisture content.	1857
–	T50	–	F-C, S-V	Category A	–	Non-flammable gas. Much heavier than air (5.2).	1858
–	–	–	F-C, S-U	Category D SW2	–	Non-flammable, toxic and corrosive gas with a pungent odour. Corrosive to metals. In moist air, produces hydrogen fluoride. Much heavier than air (3.6). Highly irritating to skin, eyes and mucous membranes.	1859
–	–	–	F-D, S-U	Category E SW1 SW2	–	Flammable gas. Explosive limits: 2.9% to 29%. Heavier than air (1.6).	1860
–	T4	TP2	F-E, S-D	Category B	–	Colourless liquid with a pungent odour. Flashpoint: 2°C c.c. Immiscible with water.	1862
–	T11	TP1 TP8 TP28	F-E, S-E	Category E	–	Boiling range: –14°C upwards. Immiscible with water.	1863
–	T4	TP1 TP8	F-E, S-E	Category B	–	Immiscible with water.	1863
–	T2	TP1	F-E, S-E	Category A	–	See entry above.	1863
–	–	–	F-E, S-D	Category D	SG6 SG8 SG10 SG12	White to straw-coloured liquid with an ether-like odour. Flashpoint: 20°C c.c. Explosive limits: 2% to 100%. Immiscible with water. Oxidizing material. May explode on heating. Harmful if swallowed or by inhalation.	1865
–	T11	TP1 TP8 TP28	F-E, S-E	Category E	–	Miscibility with water depends upon the composition.	1866
–	T4	TP1 TP8	F-E, S-E	Category B	–	See entry above.	1866
–	T2	TP1	F-E, S-E	Category A	–	See entry above.	1866
–	T3	TP33	F-A, S-G	Category A	SG17	Colourless crystals. Slightly soluble in water. Vapours may form explosive mixture in air. Forms explosive and extremely sensitive mixtures with oxidizing substances. Toxic if swallowed, by skin contact or by dust inhalation.	1868

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						Limited quantities	Excepted quantities	Instructions	Provisions	Instructions	Provisions
(1)	(2) 3.1.2	(3) 2.0	(4) 2.0	(5) 2.0.1.3	(6) 3.3	(7a) 3.4	(7b) 3.5	(8) 4.1.4	(9) 4.1.4	(10) 4.1.4	(11) 4.1.4
1869	MAGNESIUM or MAGNESIUM ALLOYS with more than 50% magnesium in pellets, turnings or ribbons	4.1	–	III	59 920	5 kg	E1	P002 LP02	PP100 L3	IBC08	B4
1870	POTASSIUM BOROHYDRIDE	4.3	–	I	–	0	E0	P403	PP31	–	–
1871	TITANIUM HYDRIDE	4.1	–	II	–	1 kg	E2	P410	PP31 PP40	IBC04	–
1872	LEAD DIOXIDE	5.1	–	III	–	5 kg	E1	P002 LP02	–	IBC08	B3
1873	PERCHLORIC ACID with more than 50% but not more than 72% acid, by mass	5.1	8	I	900	0	E0	P502	PP28	–	–
1884	BARIUM OXIDE	6.1	–	III	–	5 kg	E1	P002 LP02	–	IBC08	B3
1885	BENZIDINE	6.1	–	II	–	500 g	E4	P002	–	IBC08	B4 B21
1886	BENZYLIDENE CHLORIDE	6.1	–	II	–	100 mL	E4	P001	–	IBC02	–
1887	BROMOCHLOROMETHANE	6.1	–	III	–	5 L	E1	P001 LP01	–	IBC03	–
1888	CHLOROFORM	6.1	–	III	–	5 L	E1	P001 LP01	–	IBC03	–
1889	CYANOGEN BROMIDE	6.1	8 P	I	–	0	E0	P002	PP31	–	–
1891	ETHYL BROMIDE	6.1	–	II	–	100 mL	E4	P001	–	IBC02	B8
1892	ETHYLDICHLOROARSINE	6.1	– P	I	354	0	E0	P602	–	–	–
1894	PHENYLMERCURIC HYDROXIDE	6.1	– P	II	–	500 g	E4	P002	–	IBC08	B4 B21
1895	PHENYLMERCURIC NITRATE	6.1	– P	II	–	500 g	E4	P002	–	IBC08	B4 B21
1897	TETRACHLOROETHYLENE	6.1	– P	III	–	5 L	E1	P001 LP01	–	IBC03	–
1898	ACETYL IODIDE	8	–	II	–	1 L	E2	P001	–	IBC02	–

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	Tank instructions	Provisions					
(12)	(13) 4.2.5 4.3	(14) 4.2.5	(15) 5.4.3.2 7.8	(16a) 7.1 7.3–7.7	(16b) 7.2–7.7	(17)	(18)
–	T1	TP33	F-G, S-G	Category A H1	SG17 SG25 SG26 SG32 SG35 SG36 SG52	Silvery white metal. Burns with an intense white light and heat. In contact with water, especially seawater, may evolve hydrogen, a flammable gas. Reacts readily with acids and caustic alkali, evolving hydrogen. Reacts readily with iron oxide, producing a thermite effect. Forms explosive mixtures with oxidizing substances.	1869
–	–	–	F-G, S-O	Category E H1	SG26 SG35	White, crystalline powder. In contact with water, acids or moisture evolves hydrogen, which may be ignited by the heat of the reaction.	1870
–	T3	TP33	F-A, S-G	Category E	–	Dark grey powder or crystals.	1871
–	T1	TP33	F-A, S-Q	Category A	–	Brown powder or crystals. Insoluble in water. Harmful if swallowed.	1872
–	T10	TP1	F-A, S-Q	Category D	SG16	Colourless liquid. Mixtures with combustible material may ignite spontaneously and, when involved in a fire, by shock or by friction, may cause an explosion. Highly corrosive to most metals. Causes burns to skin, eyes and mucous membranes. Transport of PERCHLORIC ACID with more than 72% acid, by mass, is prohibited.	1873
–	T1	TP33	F-A, S-A	Category A	–	White solid. Evolves heat in contact with water. Toxic if swallowed, by skin contact or by dust inhalation.	1884
–	T3	TP33	F-A, S-A	Category A	–	White, crystalline solid. Toxic if swallowed, by skin contact or by inhalation.	1885
–	T7	TP2	F-A, S-A	Category D SW2	–	Colourless liquid evolving vapour which is irritating to eyes and skin ("Tear Gas"). Toxic if swallowed, by skin contact or by inhalation.	1886
–	T4	TP1	F-A, S-A	Category A	–	Clear, colourless, volatile liquid with a chloroform-like odour. Immiscible with water. When involved in a fire, evolves extremely toxic fumes (phosgene). Toxic if swallowed, by skin contact or by inhalation.	1887
–	T7	TP2	F-A, S-A	Category A SW2	–	Colourless, volatile liquid. Boiling point: 61°C. Non-flammable. When involved in a fire, evolves extremely toxic fumes (phosgene). Toxic if swallowed, by skin contact or by inhalation. Anaesthetic.	1888
–	T6	TP33	F-A, S-B	Category D SW2	SG35	Colourless crystals evolving toxic vapour which is irritating and causes tears. Melting point: approximately 52°C. Boiling point: approximately 62°C. In contact with water evolves hydrogen bromide and hydrogen cyanide, which are highly toxic, flammable and corrosive gases. Highly toxic if swallowed, by skin contact or by inhalation. Causes burns to skin, eyes and mucous membranes.	1889
–	T7	TP2 TP13	F-A, S-A	Category B SW2 SW5	–	Colourless volatile liquid evolving irritating vapour with a narcotic effect. Boiling point: 38°C. Vapour can be ignited by an electric spark or similar sources of ignition. Toxic if swallowed, by skin contact or by inhalation.	1891
–	T20	TP2 TP13 TP37	F-A, S-A	Category D SW2	–	Colourless liquid evolving irritating vapour ("Tear Gas"). Highly toxic if swallowed, by skin contact or by inhalation.	1892
–	T3	TP33	F-A, S-A	Category A	–	White crystals or powder. Soluble in water. Toxic if swallowed, by skin contact or by dust inhalation.	1894
–	T3	TP33	F-A, S-A	Category A	–	White crystals or powder. Toxic if swallowed, by skin contact or by inhalation.	1895
–	T4	TP1	F-A, S-A	Category A SW2	–	Colourless liquid with an ethereal odour. When involved in a fire, evolves extremely toxic fumes (phosgene). Toxic if swallowed, by skin contact or by inhalation.	1897
–	T7	TP2 TP13	F-A, S-B	Category C SW2	–	Colourless liquid. Reacts violently with water, evolving hydrogen iodide, an irritating and corrosive gas apparent as white fumes. In the presence of moisture, highly corrosive to most metals. Vapour irritates mucous membranes.	1898

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						Limited quantities	Excepted quantities	Instructions	Provisions	Instructions	Provisions
(1)	(2) 3.1.2	(3) 2.0	(4) 2.0	(5) 2.0.1.3	(6) 3.3	(7a) 3.4	(7b) 3.5	(8) 4.1.4	(9) 4.1.4	(10) 4.1.4	(11) 4.1.4
1902	DIISOCTYL ACID PHOSPHATE	8	–	III	–	5 L	E1	P001 LP01	–	IBC03	–
1903	DISINFECTANT, LIQUID, CORROSIVE, N.O.S.	8	–	I	274	0	E0	P001	–	–	–
1903	DISINFECTANT, LIQUID, CORROSIVE, N.O.S.	8	–	II	274	1 L	E2	P001	–	IBC02	–
1903	DISINFECTANT, LIQUID, CORROSIVE, N.O.S.	8	–	III	223 274	5 L	E1	P001 LP01	–	IBC03	–
1905	SELENIC ACID	8	–	I	–	0	E0	P002	–	IBC07	B1
1906	SLUDGE ACID	8	–	II	–	1 L	E0	P001	–	IBC02	–
1907	SODA LIME with more than 4% sodium hydroxide	8	–	III	62	5 kg	E1	P002 LP02	–	IBC08	B3
1908	CHLORITE SOLUTION	8	–	II	–	1 L	E2	P001	–	IBC02	–
1908	CHLORITE SOLUTION	8	–	III	223	5 L	E1	P001 LP01	–	IBC03	–
1910	CALCIUM OXIDE	8	–	–	960	–	–	–	–	–	–
1911	DIBORANE	2.3	2.1	–	–	0	E0	P200	–	–	–
1912	METHYL CHLORIDE AND METHYLENE CHLORIDE MIXTURE	2.1	–	–	228	0	E0	P200	–	–	–
1913	NEON, REFRIGERATED LIQUID	2.2	–	–	–	120 mL	E1	P203	–	–	–
1914	BUTYL PROPIONATES	3	–	III	–	5 L	E1	P001 LP01	–	IBC03	–
1915	CYCLOHEXANONE	3	–	III	–	5 L	E1	P001 LP01	–	IBC03	–
1916	2,2'-DICHLORODIETHYL ETHER	6.1	3	II	–	100 mL	E4	P001	–	IBC02	–
1917	ETHYL ACRYLATE, STABILIZED	3	–	II	386	1 L	E2	P001	–	IBC02	–
1918	ISOPROPYLBENZENE	3	–	III	–	5 L	E1	P001 LP01	–	IBC03	–
1919	METHYL ACRYLATE, STABILIZED	3	–	II	386	1 L	E2	P001	–	IBC02	–

UN No.	Portable tanks and bulk containers		EmS	Stowage and handling	Segregation	Properties and observations	UN No.
	Tank instructions	Provisions					
(12)	(13) 4.2.5 4.3	(14) 4.2.5	(15) 5.4.3.2 7.8	(16a) 7.1 7.3–7.7	(16b) 7.2–7.7	(17)	(18)
–	T4	TP1	F-A, S-B	Category A	–	Oily liquid. Mildly corrosive to most metals.	1902
–	–	–	F-A, S-B	Category B	–	A wide variety of corrosive liquids. Cause burns to skin, eyes and mucous membranes.	1903
–	–	–	F-A, S-B	Category B	–	See entry above.	1903
–	–	–	F-A, S-B	Category A	–	See entry above.	1903
–	T6	TP33	F-A, S-B	Category A	–	White, very deliquescent crystalline solid. Melting point: 50°C. Soluble in water. Reacts violently with organic materials such as wood, cotton or straw. In the presence of moisture, corrosive to most metals. Causes severe burns to skin, eyes and mucous membranes.	1905
–	T8	TP2 TP28	F-A, S-B	Category C SW15	–	Waste or spent sulphuric acid, usually a by-product of refining petroleum oils or crude benzenes. Highly corrosive to most metals.	1906
–	T1	TP33	F-A, S-B	Category A	SG35	Deliquescent, granulated mixture of sodium hydroxide and calcium hydroxide. Reacts violently with acids. Reacts with ammonium salts, evolving ammonia gas. In the presence of moisture, corrosive to aluminium, zinc and tin. Causes burns to skin, eyes and mucous membranes.	1907
–	T7	TP2 TP24	F-A, S-B	Category B	SG6 SG8 SG10 SG12 SG20	Colourless liquid. In contact with acids, evolves very irritating and corrosive gases. Oxidizing solution. May cause fire in contact with organic materials such as wood, cotton or straw. Mildly corrosive to most metals. Causes burns to skin, eyes and mucous membranes.	1908
–	T4	TP2 TP24	F-A, S-B	Category B	SG6 SG8 SG10 SG12 SG20	See entry above.	1908
–	–	–	–	–	–	Not subject to the provisions of this Code but may be subject to provisions governing the transport of dangerous goods by other modes.	1910
–	–	–	F-D, S-U	Category D SW2	SG46	Liquefied, flammable, toxic, colourless gas with an unpleasant odour. Explosive limits: 0.9% to 98%. Lighter than air (0.95). May decompose above –18°C with the formation of hydrogen and boron hydrides. Autoignition temperature: 90°C. Toxic by inhalation; forms boric acid and water by hydrolysis within the lungs.	1911
–	T50	–	F-D, S-U	Category D SW2	–	Solution of the flammable gas methyl chloride, UN No. 1063, in the liquid methylene chloride.	1912
–	T75	TP5	F-C, S-V	Category D	–	Liquefied, inert gas. Lighter than air (0.7).	1913
–	T2	TP1	F-E, S-D	Category A	–	Colourless liquids. Flashpoint: 32°C c.c. Immiscible with water.	1914
–	T2	TP1	F-E, S-D	Category A	–	Colourless liquid. Flashpoint: 38°C to 44°C c.c. Explosive limits: 1.1% to 9.4%. Immiscible with water.	1915
–	T7	TP2	F-E, S-D	Category A	–	Colourless flammable liquid. Flashpoint: 55°C c.c. Immiscible with water, but reacts with it, forming corrosive and toxic fumes. Toxic if swallowed, by skin contact or by inhalation.	1916
–	T4	TP1 TP13	F-E, S-D	Category C SW1 SW2	–	Colourless liquid with a pungent odour. Flashpoint: 16°C c.c. Explosive limits: 1.8% to 14%. Immiscible with water. Irritating to skin, eyes and mucous membranes.	1917
–	T2	TP1	F-E, S-E	Category A	–	Colourless liquid with a chloroform-like odour. Flashpoint: 31°C c.c. Explosive limits: 0.9% to 6.5%. Immiscible with water.	1918
–	T4	TP1 TP13	F-E, S-D	Category C SW1	–	Colourless, volatile liquid with a pungent odour. Flashpoint: –3°C c.c. Explosive limits: 1.2% to 25%. Immiscible with water. Harmful by inhalation. Irritating to skin, eyes and mucous membranes.	1919

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						Limited quantities	Excepted quantities	Instructions	Provisions	Instructions	Provisions
(1)	(2) 3.1.2	(3) 2.0	(4) 2.0	(5) 2.0.1.3	(6) 3.3	(7a) 3.4	(7b) 3.5	(8) 4.1.4	(9) 4.1.4	(10) 4.1.4	(11) 4.1.4
1920	NONANES	3	– P	III	–	5 L	E1	P001 LP01	–	IBC03	–
1921	PROPYLENEIMINE, STABILIZED	3	6.1	I	386	0	E0	P001	–	–	–
1922	PYRROLIDINE	3	8	II	–	1 L	E2	P001	–	IBC02	–
1923	CALCIUM DITHIONITE (CALCIUM HYDROSULPHITE)	4.2	–	II	–	0	E2	P410	PP31	IBC06	B21
1928	METHYLMAGNESIUM BROMIDE IN ETHYL ETHER	4.3	3	I	–	0	E0	P402	–	–	–
1929	POTASSIUM DITHIONITE (POTASSIUM HYDROSULPHITE)	4.2	–	II	–	0	E2	P410	PP31	IBC06	B21
1931	ZINC DITHIONITE (ZINC HYDROSULPHITE)	9	–	III	–	5 kg	E1	P002 LP02	–	IBC08	B3
1932	ZIRCONIUM, SCRAP	4.2	–	III	223	0	E0	P002 LP02	PP31 L4	IBC08	B4
1935	CYANIDE SOLUTION, N.O.S.	6.1	– P	I	274	0	E5	P001	–	–	–
1935	CYANIDE SOLUTION, N.O.S.	6.1	– P	II	274	100 mL	E4	P001	–	IBC02	–
1935	CYANIDE SOLUTION, N.O.S.	6.1	– P	III	223 274	5 L	E1	P001 LP01	–	IBC03	–
1938	BROMOACETIC ACID SOLUTION	8	–	II	–	1 L	E2	P001	–	IBC02	–
1938	BROMOACETIC ACID SOLUTION	8	–	III	223	5 L	E1	P001 LP01	–	IBC03	–
1939	PHOSPHORUS OXYBROMIDE	8	–	II	–	1 kg	E0	P002	–	IBC08	B4 B21
1940	THIOGLYCOLIC ACID	8	–	II	–	1 L	E2	P001	–	IBC02	–
1941	DIBROMODIFLUOROMETHANE	9	–	III	–	5 L	E1	P001 LP01	–	–	–

UN No.	Portable tanks and bulk containers		EmS	Stowage and handling	Segregation	Properties and observations	UN No.
	Tank instructions	Provisions					
(12)	(13) 4.2.5 4.3	(14) 4.2.5	(15) 5.4.3.2 7.8	(16a) 7.1 7.3–7.7	(16b) 7.2–7.7	(17)	(18)
–	T2	TP2	F-E, S-E	Category A	–	Colourless liquids. Explosive limits: 0.8% to 2.9%. <i>normal</i> -NONANE: flashpoint 31°C c.c. Immiscible with water. Irritating to skin, eyes and mucous membranes.	1920
–	T14	TP2 TP13	F-E, S-D	Category D SW1 SW2	–	Colourless liquid with an ammoniacal odour. Flashpoint: –4°C o.c. Miscible with water. Toxic if swallowed, by skin contact or by inhalation. Causes burns to skin and eyes.	1921
–	T7	TP1	F-E, S-C	Category B SW2	SG35	Colourless to pale yellow liquid with an ammoniacal odour. Reacts violently with acids. Flashpoint: 3°C c.c. Miscible with water. Harmful by inhalation. Causes burns to skin, eyes and mucous membranes.	1922
–	T3	TP33	F-A, S-J	Category E H1	–	Liable to heat and ignite spontaneously in air and to evolve sulphur dioxide, an irritating gas.	1923
–	–	–	F-G, S-L	Category D H1	SG26	Colourless, yellowish liquid. Decomposes violently in contact with water. Spillage will ignite spontaneously.	1928
–	T3	TP33	F-A, S-J	Category E H1	–	Liable to heat and ignite spontaneously in air and to evolve sulphur dioxide, an irritating gas.	1929
–	T1	TP33	F-A, S-J	Category A H1	SG11 SG20	White, amorphous solid material. Soluble in water. Liable to heat on contact with moisture and heating results in evolution of sulphur dioxide, an intensely irritating gas. Also evolves sulphur dioxide on contact with acids.	1931
–	T1	TP33	F-G, S-L	Category D H1	SG26	Particle size larger than 840 microns. Readily flammable; may ignite spontaneously in air. In contact with water, may evolve hydrogen, a flammable gas.	1932
–	T14	TP2 TP13 TP27	F-A, S-A	Category B SW2	SG35	Liquid evolving toxic vapour. Reacts with acids or acid fumes, evolving hydrogen cyanide, a highly toxic and flammable gas. Toxic if swallowed, by skin contact or by inhalation.	1935
–	T11	TP2 TP13 TP27	F-A, S-A	Category A SW2	SG35	See entry above.	1935
–	T7	TP2 TP13 TP28	F-A, S-A	Category A SW2	SG35	See entry above.	1935
–	T7	TP2	F-A, S-B	Category A SW2	–	Corrosive to most metals. Harmful if swallowed. Causes burns to eyes and skin.	1938
–	T7	TP2	F-A, S-B	Category A SW2	–	See entry above.	1938
–	T3	TP33	F-A, S-B	Category C SW1 SW2 H2	–	Colourless crystals. Melting point: 56°C. Reacts violently with water, evolving hydrogen bromide, a toxic and corrosive gas apparent as white fumes. Reacts violently with organic materials (such as wood, cotton, straw), causing fire. Decomposes when heated, evolving toxic and corrosive gases. When involved in a fire, evolves toxic and corrosive gases. In the presence of moisture, highly corrosive to most metals. Causes burns to skin, eyes and mucous membranes.	1939
–	T7	TP2	F-A, S-B	Category A	–	Colourless liquid with a strong, very unpleasant odour. Corrosive to most metals. Harmful if swallowed.	1940
–	T11	TP2	F-A, S-A	Category A SW1	–	Colourless, heavy liquid. Boiling point: 24°C. Immiscible with water. When involved in a fire, may evolve toxic fumes. Toxic if swallowed, by skin contact or by inhalation. Irritating to skin, eyes and mucous membranes.	1941

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						Limited quantities	Excepted quantities	Instructions	Provisions	Instructions	Provisions
(1)	(2) 3.1.2	(3) 2.0	(4) 2.0	(5) 2.0.1.3	(6) 3.3	(7a) 3.4	(7b) 3.5	(8) 4.1.4	(9) 4.1.4	(10) 4.1.4	(11) 4.1.4
1942	AMMONIUM NITRATE with not more than 0.2% combustible substances, including any organic substance calculated as carbon, to the exclusion of any other added substance	5.1	–	III	900 952 967	5 kg	E1	P002 LP02	–	IBC08	B3
1944	MATCHES, SAFETY (book, card or strike on box)	4.1	–	III	293 294	5 kg	E1	P407	–	–	–
1945	MATCHES, WAX 'VESTA'	4.1	–	III	294	5 kg	E1	P407	–	–	–
1950	AEROSOLS	2	– See SP63	–	63 190 277 327 344 381 959	See SP277	E0	P207 LP200	PP87 L2	–	–
1951	ARGON, REFRIGERATED LIQUID	2.2	–	–	–	120 mL	E1	P203	–	–	–
1952	ETHYLENE OXIDE AND CARBON DIOXIDE MIXTURE with not more than 9% ethylene oxide	2.2	–	–	–	120 mL	E1	P200	–	–	–
1953	COMPRESSED GAS, TOXIC, FLAMMABLE, N.O.S.	2.3	2.1	–	274	0	E0	P200	–	–	–
1954	COMPRESSED GAS, FLAMMABLE, N.O.S.	2.1	–	–	274	0	E0	P200	–	–	–
1955	COMPRESSED GAS, TOXIC, N.O.S.	2.3	–	–	274	0	E0	P200	–	–	–
1956	COMPRESSED GAS, N.O.S.	2.2	–	–	274 378	120 mL	E1	P200	–	–	–
1957	DEUTERIUM, COMPRESSED	2.1	–	–	–	0	E0	P200	–	–	–
1958	1,2-DICHLORO-1,1,2,2-TETRAFLUOROETHANE (REFRIGERANT GAS R 114)	2.2	–	–	–	120 mL	E1	P200	–	–	–
1959	1,1-DIFLUOROETHYLENE (REFRIGERANT GAS R 1132a)	2.1	–	–	–	0	E0	P200	–	–	–
1961	ETHANE, REFRIGERATED LIQUID	2.1	–	–	–	0	E0	P203	–	–	–
1962	ETHYLENE	2.1	–	–	–	0	E0	P200	–	–	–
1963	HELIUM, REFRIGERATED LIQUID	2.2	–	–	–	120 mL	E1	P203	–	–	–
1964	HYDROCARBON GAS MIXTURE, COMPRESSED, N.O.S.	2.1	–	–	274	0	E0	P200	–	–	–
1965	HYDROCARBON GAS MIXTURE, LIQUEFIED, N.O.S.	2.1	–	–	274	0	E0	P200	–	–	–
1966	HYDROGEN, REFRIGERATED LIQUID	2.1	–	–	–	0	E0	P203	–	–	–

UN No.	Portable tanks and bulk containers		EmS	Stowage and handling	Segregation	Properties and observations	UN No.
	Tank instructions	Provisions					
(12)	(13) 4.2.5 4.3	(14) 4.2.5	(15) 5.4.3.2 7.8	(16a) 7.1 7.3–7.7	(16b) 7.2–7.7	(17)	(18)
–	T1 BK2 BK3	TP33	F-H, S-Q	Category C SW1 SW14 SW23	SG16 SG42 SG45 SG47 SG48 SG51 SG56 SG58 SG59 SG61	Crystals, granules or prills. Soluble in water. Supporter of combustion. A major fire aboard a ship carrying this substance may involve a risk of explosion in the event of contamination (e.g. by fuel oil) or strong confinement. An adjacent detonation may also involve the risk of explosion. If heated strongly, decomposes, giving off toxic gases and gases which support combustion. Transport of AMMONIUM NITRATE liable to self-heating sufficient to initiate decomposition is prohibited .	1942
–	–	–	F-A, S-I	Category A	–	Intended to be ignited on a specially prepared surface.	1944
–	–	–	F-A, S-I	Category B	–	Ignite by friction; a prepared surface may be required.	1945
–	–	–	F-D, S-U	– SW1 SW22	SG69	–	1950
–	T75	TP5	F-C, S-V	Category D	–	Liquefied, inert gas. Heavier than air (1.4).	1951
–	–	–	F-C, S-V	Category A	–	Liquefied, non-flammable gas with an ether-like odour. Explosive limits: 31% to 52%. Heavier than air (1.5).	1952
–	–	–	F-D, S-U	Category D SW2	–	–	1953
–	–	–	F-D, S-U	Category D SW2	–	–	1954
–	–	–	F-C, S-U	Category D SW2	–	–	1955
–	–	–	F-C, S-V	Category A	–	–	1956
–	–	–	F-D, S-U	Category E SW2	–	Flammable, odourless gas. Much lighter than air (0.14).	1957
–	T50	–	F-C, S-V	Category A	–	Liquefied, non-flammable gas with a chloroform-like odour. Much heavier than air (5.9). Boiling point: 4°C.	1958
–	–	–	F-D, S-U	Category E SW2	–	Flammable gas. Explosive limits: 2.3% to 25%. Much heavier than air (2.2).	1959
–	T75	TP5	F-D, S-U	Category D SW2	–	Liquefied, flammable gas with a faint odour. Explosive limits: 3% to 16%. Slightly heavier than air (1.05).	1961
–	–	–	F-D, S-U	Category E SW2	–	Flammable gas. Explosive limits: 3% to 34%. Slightly lighter than air (0.98).	1962
–	T75	TP5 TP34	F-C, S-V	Category D	–	Liquefied, inert gas. Much lighter than air (0.14).	1963
–	–	–	F-D, S-U	Category E SW2	–	Flammable hydrocarbon gas mixture obtained from natural gas or by distillation of mineral oils or coal, etc. May contain propane, cyclopropane, propylene, butane, butylene, etc., in varying proportions. Heavier than air.	1964
–	T50	–	F-D, S-U	Category E SW2	–	Liquefied flammable hydrocarbon gas obtained from natural gas or by distillation of mineral oils or coal, etc. May contain propane, cyclopropane, propylene, butane, butylene, etc., in varying proportions. Heavier than air.	1965
–	T75	TP5 TP34	F-D, S-U	Category D SW2	SG46	Liquefied, flammable, odourless gas. Explosive limits: 4% to 75%. Much lighter than air (0.07).	1966

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						Limited quantities	Excepted quantities	Instructions	Provisions	Instructions	Provisions
(1)	(2) 3.1.2	(3) 2.0	(4) 2.0	(5) 2.0.1.3	(6) 3.3	(7a) 3.4	(7b) 3.5	(8) 4.1.4	(9) 4.1.4	(10) 4.1.4	(11) 4.1.4
1967	INSECTICIDE GAS, TOXIC, N.O.S.	2.3	-	-	274	0	E0	P200	-	-	-
1968	INSECTICIDE GAS, N.O.S.	2.2	-	-	274	120 mL	E1	P200	-	-	-
1969	ISOBUTANE	2.1	-	-	-	0	E0	P200	-	-	-
1970	KRYPTON, REFRIGERATED LIQUID	2.2	-	-	-	120 mL	E1	P203	-	-	-
1971	METHANE, COMPRESSED or NATURAL GAS, COMPRESSED with high methane content	2.1	-	-	-	0	E0	P200	-	-	-
1972	METHANE, REFRIGERATED LIQUID or NATURAL GAS, REFRIGERATED LIQUID with high methane content	2.1	-	-	-	0	E0	P203	-	-	-
1973	CHLORODIFLUOROMETHANE AND CHLOROPENTAFLUOROETHANE MIXTURE with a fixed boiling point, with approximately 49% chlorodifluoromethane (REFRIGERANT GAS R 502)	2.2	-	-	-	120 mL	E1	P200	-	-	-
1974	CHLORODIFLUOROBROMOMETHANE (REFRIGERANT GAS R 12B1)	2.2	-	-	-	120 mL	E1	P200	-	-	-
1975	NITRIC OXIDE AND DINITROGEN TETROXIDE MIXTURE (NITRIC OXIDE AND NITROGEN DIOXIDE MIXTURE)	2.3	5.1/8	-	-	0	E0	P200	-	-	-
1976	OCTAFLUOROCYCLOBUTANE (REFRIGERANT GAS RC 318)	2.2	-	-	-	120 mL	E1	P200	-	-	-
1977	NITROGEN, REFRIGERATED LIQUID	2.2	-	-	345 346	120 mL	E1	P203	-	-	-
1978	PROPANE	2.1	-	-	-	0	E0	P200	-	-	-
1982	TETRAFLUOROMETHANE (REFRIGERANT GAS R 14)	2.2	-	-	-	120 mL	E1	P200	-	-	-
1983	1-CHLORO-2,2,2-TRIFLUOROETHANE (REFRIGERANT GAS R 133a)	2.2	-	-	-	120 mL	E1	P200	-	-	-
1984	TRIFLUOROMETHANE (REFRIGERANT GAS R 23)	2.2	-	-	-	120 mL	E1	P200	-	-	-
1986	ALCOHOLS, FLAMMABLE, TOXIC, N.O.S.	3	6.1	I	274	0	E0	P001	-	-	-
1986	ALCOHOLS, FLAMMABLE, TOXIC, N.O.S.	3	6.1	II	274	1 L	E2	P001	-	IBC02	-
1986	ALCOHOLS, FLAMMABLE, TOXIC, N.O.S.	3	6.1	III	223 274	5 L	E1	P001	-	IBC03	-
1987	ALCOHOLS, N.O.S.	3	-	II	274	1 L	E2	P001	-	IBC02	-
1987	ALCOHOLS, N.O.S.	3	-	III	223 274	5 L	E1	P001 LP01	-	IBC03	-

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	Tank instructions	Provisions					
(12)	(13) 4.2.5 4.3	(14) 4.2.5	(15) 5.4.3.2 7.8	(16a) 7.1 7.3-7.7	(16b) 7.2-7.7	(17)	(18)
-	-	-	F-C, S-U	Category D SW2	-	Toxic mixtures of insecticides with liquefied gases. These mixtures may be flammable.	1967
-	-	-	F-C, S-V	Category A	-	Non-flammable and non-toxic mixtures of insecticides with liquefied gases.	1968
-	T50	-	F-D, S-U	Category E SW2	-	Flammable hydrocarbon. Heavier than air.	1969
-	T75	TP5	F-C, S-V	Category D	-	Liquefied, inert gas. Much heavier than air (2.9).	1970
-	-	-	F-D, S-U	Category E SW2	-	Flammable gas. Explosive limits: 5% to 16%. Lighter than air (methane 0.55).	1971
-	T75	TP5	F-D, S-U	Category D SW2	-	Liquefied, flammable gas. Explosive limits: 5% to 16%. Lighter than air (methane 0.55).	1972
-	T50	-	F-C, S-V	Category A	-	Liquefied, non-flammable gas. Much heavier than air (4.2.)	1973
-	T50	-	F-C, S-V	Category A	-	Liquefied, non-flammable gas. Much heavier than air (5.7).	1974
-	-	-	F-C, S-W	Category D SW2	SG6 SG19	Non-flammable, toxic and corrosive, brown gas mixtures of varying composition with a pungent odour. Strong oxidizing agent. Heavier than air. Highly irritating to skin, eyes and mucous membranes. Toxic by inhalation, with delayed effect similar to phosgene.	1975
-	T50	-	F-C, S-V	Category A	-	Liquefied, non-flammable gas. Much heavier than air (7.0).	1976
-	T75	TP5	F-C, S-V	Category D	-	Liquefied, non-flammable, odourless gas. Lighter than air (0.97). Arrangements for the containment of the liquid nitrogen and fittings in use should be appropriate to the potential danger to the structure of the freight container or ship from the effect of misuse or accidental spillage.	1977
-	T50	-	F-D, S-U	Category E SW2	-	Flammable hydrocarbon gas. Explosive limits: 2.3% to 9.5%. Heavier than air (1.56).	1978
-	-	-	F-C, S-V	Category A	-	Non-flammable gas. Much heavier than air (3.1).	1982
-	T50	-	F-C, S-V	Category A	-	Liquefied, non-flammable gas. Much heavier than air (4.1). Boiling point: 7°C.	1983
-	-	-	F-C, S-V	Category A	-	Liquefied, non-flammable gas. Much heavier than air (2.4).	1984
-	T14	TP2 TP13 TP27	F-E, S-D	Category E SW2	-	Toxic if swallowed, by skin contact or by inhalation.	1986
-	T11	TP2 TP27	F-E, S-D	Category B SW2	-	See entry above.	1986
-	T7	TP1 TP28	F-E, S-D	Category A	-	See entry above.	1986
-	T7	TP1 TP8 TP28	F-E, S-D	Category B	-	-	1987
-	T4	TP1 TP29	F-E, S-D	Category A	-	-	1987

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						Limited quantities	Excepted quantities	Instructions	Provisions	Instructions	Provisions
(1)	(2) 3.1.2	(3) 2.0	(4) 2.0	(5) 2.0.1.3	(6) 3.3	(7a) 3.4	(7b) 3.5	(8) 4.1.4	(9) 4.1.4	(10) 4.1.4	(11) 4.1.4
1988	ALDEHYDES, FLAMMABLE, TOXIC, N.O.S.	3	6.1	I	274	0	E0	P001	-	-	-
1988	ALDEHYDES, FLAMMABLE, TOXIC, N.O.S.	3	6.1	II	274	1 L	E2	P001	-	IBC02	-
1988	ALDEHYDES, FLAMMABLE, TOXIC, N.O.S.	3	6.1	III	223 274	5 L	E1	P001	-	IBC03	-
1989	ALDEHYDES, N.O.S.	3	-	I	274	0	E3	P001	-	-	-
1989	ALDEHYDES, N.O.S.	3	-	II	274	1 L	E2	P001	-	IBC02	-
1989	ALDEHYDES, N.O.S.	3	-	III	223 274	5 L	E1	P001 LP01	-	IBC03	-
1990	BENZALDEHYDE	9	-	III	-	5 L	E1	P001 LP01	-	IBC03	-
1991	CHLOROPRENE, STABILIZED	3	6.1	I	386	0	E0	P001	-	-	-
1992	FLAMMABLE LIQUID, TOXIC, N.O.S.	3	6.1	I	274	0	E0	P001	-	-	-
1992	FLAMMABLE LIQUID, TOXIC, N.O.S.	3	6.1	II	274	1 L	E2	P001	-	IBC02	-
1992	FLAMMABLE LIQUID, TOXIC, N.O.S.	3	6.1	III	223 274	5 L	E1	P001	-	IBC03	-
1993	FLAMMABLE LIQUID, N.O.S.	3	-	I	274	0	E3	P001	-	-	-
1993	FLAMMABLE LIQUID, N.O.S.	3	-	II	274	1 L	E2	P001	-	IBC02	-
1993	FLAMMABLE LIQUID, N.O.S.	3	-	III	223 274 955	5 L	E1	P001 LP01	-	IBC03	-
1994	IRON PENTACARBONYL	6.1	3	I	354	0	E0	P601	-	-	-
1999	TARS, LIQUID, including road oils, and cutback bitumens	3	-	II	-	5 L	E2	P001	-	IBC02	-
1999	TARS, LIQUID, including road oils, and cutback bitumens	3	-	III	955	5 L	E1	P001 LP01	-	IBC03	-
2000	CELLULOID in block, rods, rolls, sheets, tubes, etc., except scrap	4.1	-	III	223 383	5 kg	E1	P002 LP02	PP7	-	-
2001	COBALT NAPHTHENATES, POWDER	4.1	-	III	-	5 kg	E1	P002 LP02	-	IBC08	B3
2002	CELLULOID, SCRAP	4.2	-	III	223	0	E0	P002 LP02	PP8	IBC08	B3
2004	MAGNESIUM DIAMIDE	4.2	-	II	-	0	E2	P410	PP31	IBC06	-
2006	PLASTICS, NITROCELLULOSE-BASED, SELF-HEATING, N.O.S.	4.2	-	III	274	0	E0	P002	-	-	-

UN No.	Portable tanks and bulk containers		EmS	Stowage and handling	Segregation	Properties and observations	UN No.
	Tank instructions	Provisions					
(12)	(13) 4.2.5 4.3	(14) 4.2.5	(15) 5.4.3.2 7.8	(16a) 7.1 7.3-7.7	(16b) 7.2-7.7	(17)	(18)
-	T14	TP2 TP13 TP27	F-E, S-D	Category E SW2	-	Toxic if swallowed, by skin contact or by inhalation.	1988
-	T11	TP2 TP27	F-E, S-D	Category B SW2	-	See entry above.	1988
-	T7	TP1 TP28	F-E, S-D	Category A	-	See entry above.	1988
-	T11	TP1 TP27	F-E, S-D	Category E	-	-	1989
-	T7	TP1 TP8 TP28	F-E, S-D	Category B	-	-	1989
-	T4	TP1 TP29	F-E, S-D	Category A	-	-	1989
-	T2	TP1	F-A, S-A	Category A	-	Colourless or yellowish volatile oil with a bitter almond odour. Slightly soluble in water. Irritating to skin, eyes and mucous membranes.	1990
-	T14	TP2 TP6 TP13	F-E, S-D	Category D SW1 SW2	-	Colourless liquid. Flashpoint: -20°C c.c. Explosive limits: 2.5% to 12%. Slightly soluble in water. Toxic if swallowed, by skin contact or by inhalation.	1991
-	T14	TP2 TP13 TP27	F-E, S-D	Category E SW2	-	Flammable toxic liquid which is not specified by name in this class or, on account of its characteristics, in some other class. Toxic if swallowed, by skin contact or by inhalation.	1992
-	T7	TP2 TP13	F-E, S-D	Category B SW2	-	See entry above.	1992
-	T7	TP1 TP28	F-E, S-D	Category A	-	See entry above.	1992
-	T11	TP1 TP27	F-E, S-E	Category E	-	-	1993
-	T7	TP1 TP8 TP28	F-E, S-E	Category B	-	-	1993
-	T4	TP1 TP29	F-E, S-E	Category A	-	-	1993
-	T22	TP2 TP13	F-E, S-D	Category D SW2	-	Yellow to dark red, volatile flammable liquid. Flashpoint: -15°C c.c. Explosive limits: 3.7% to 12.5%. May react with water or steam, evolving carbon monoxide, which is a toxic gas. Highly toxic if swallowed, by skin contact or by inhalation.	1994
-	T3	TP3 TP29	F-E, S-E	Category B	-	Mobile liquids prepared by mixing asphalt with petroleum distillate. Pungent odour. Immiscible with water.	1999
-	T1	TP3	F-E, S-E	Category A	-	See entry above.	1999
-	-	-	F-A, S-I	Category A	-	Ignites readily. When involved in a fire, evolves toxic fumes; in enclosed cargo spaces, these fumes may form an explosive mixture with air.	2000
-	T1	TP33	F-A, S-I	Category A	-	Brown, amorphous powder. Insoluble in water. Readily combustible.	2001
-	-	-	F-A, S-J	Category D	-	Ignites readily. When involved in a fire, evolves toxic fumes; in enclosed cargo spaces, these fumes may form an explosive mixture with air.	2002
-	T3	TP33	F-G, S-M	Category C H1	SG26	White powder. Ignites spontaneously in air. Reacts violently in contact with water.	2004
-	-	-	F-A, S-G	Category C	-	-	2006

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						Limited quantities	Excepted quantities	Instructions	Provisions	Instructions	Provisions
(1)	(2) 3.1.2	(3) 2.0	(4) 2.0	(5) 2.0.1.3	(6) 3.3	(7a) 3.4	(7b) 3.5	(8) 4.1.4	(9) 4.1.4	(10) 4.1.4	(11) 4.1.4
2008	ZIRCONIUM POWDER, DRY	4.2	–	I	–	0	E0	P404	PP31	–	–
2008	ZIRCONIUM POWDER, DRY	4.2	–	II	–	0	E2	P410	PP31	IBC06	B21
2008	ZIRCONIUM POWDER, DRY	4.2	–	III	223	0	E1	P002 LP02	PP31 L4	IBC08	B4
2009	ZIRCONIUM, DRY finished sheets, strip or coiled wire	4.2	–	III	223	0	E1	P002 LP02	PP31 L4	–	–
2010	MAGNESIUM HYDRIDE	4.3	–	I	–	0	E0	P403	PP31	–	–
2011	MAGNESIUM PHOSPHIDE	4.3	6.1	I	–	0	E0	P403	PP31	–	–
2012	POTASSIUM PHOSPHIDE	4.3	6.1	I	–	0	E0	P403	PP31	–	–
2013	STRONTIUM PHOSPHIDE	4.3	6.1	I	–	0	E0	P403	PP31	–	–
2014	HYDROGEN PEROXIDE, AQUEOUS SOLUTION with not less than 20% but not more than 60% hydrogen peroxide (stabilized as necessary)	5.1	8	II	–	1 L	E2	P504	PP10	IBC02	B5
2015	HYDROGEN PEROXIDE, STABILIZED or HYDROGEN PEROXIDE, AQUEOUS SOLUTION, STABILIZED with more than 60% hydrogen peroxide	5.1	8	I	–	0	E0	P501	–	–	–
2016	AMMUNITION, TOXIC, NON-EXPLOSIVE without burster or expelling charge, non-fuzed	6.1	–	–	–	0	E0	P600	–	–	–
2017	AMMUNITION, TEAR-PRODUCING, NON-EXPLOSIVE without burster or expelling charge, non-fuzed	6.1	8	–	–	0	E0	P600	–	–	–
2018	CHLOROANILINES, SOLID	6.1	–	II	–	500 g	E4	P002	–	IBC08	B4 B21
2019	CHLOROANILINES, LIQUID	6.1	–	II	–	100 mL	E4	P001	–	IBC02	–
2020	CHLOROPHENOLS, SOLID	6.1	–	III	205	5 kg	E1	P002 LP02	–	IBC08	B3
2021	CHLOROPHENOLS, LIQUID	6.1	–	III	–	5 L	E1	P001 LP01	–	IBC03	–
2022	CRESYLIC ACID	6.1	8	II	–	100 mL	E4	P001	–	IBC02	–

UN No.	Portable tanks and bulk containers		EmS	Stowage and handling	Segregation	Properties and observations	UN No.
	Tank instructions	Provisions					
(12)	(13) 4.2.5 4.3	(14) 4.2.5	(15) 5.4.3.2 7.8	(16a) 7.1 7.3–7.7	(16b) 7.2–7.7	(17)	(18)
–	T21	TP7 TP33	F-G, S-M	Category D H1	SG26	Amorphous powder. Liable to ignite spontaneously in air. Forms explosive mixtures with oxidizing substances.	2008
–	T3	TP33	F-G, S-M	Category D H1	SG26	See entry above.	2008
–	T1	TP33	F-G, S-M	Category D H1	SG26	See entry above.	2008
–	–	–	F-G, S-M	Category D H1	SG26	Hard, silvery metal, liable to ignite spontaneously in air.	2009
–	–	–	F-G, S-O	Category E H1	SG26 SG35	White crystals. In contact with water, acids or moisture, evolves hydrogen, which may be ignited by the heat of the reaction.	2010
–	–	–	F-G, S-N	Category E SW2 SW5 H1	SG26 SG35	Solid. Reacts with acids or decomposes slowly in contact with water or damp air, evolving phosphine, a spontaneously flammable and highly toxic gas. Reacts violently with oxidizing substances. Toxic if swallowed, by skin contact or by inhalation.	2011
–	–	–	F-G, S-N	Category E SW2 SW5 H1	SG26 SG35	Solid. Reacts with acids or decomposes slowly in contact with water or damp air, evolving phosphine, a spontaneously flammable and highly toxic gas. Reacts violently with oxidizing substances. Toxic if swallowed, by skin contact or by inhalation.	2012
–	–	–	F-G, S-N	Category E SW2 SW5 H1	SG26 SG35	Solid. Reacts with acids or decomposes slowly in contact with water or damp air, evolving phosphine, a spontaneously flammable and highly toxic gas. Reacts violently with oxidizing substances. Toxic if swallowed, by skin contact or by inhalation.	2013
–	T7	TP2 TP6 TP24	F-H, S-Q	Category D SW1	SG16 SG59 SG72	Colourless liquid. Slowly decomposes, evolving oxygen; the rate of decomposition increases in contact with metals, except aluminium. In contact with combustible material, may cause fire or explosion. Causes burns to skin, eyes and mucous membranes. Even though stabilized, these solutions may evolve oxygen.	2014
–	T9	TP2 TP6 TP24	F-H, S-Q	Category D SW1	SG16 SG59	Colourless liquid. Slowly decomposes, evolving oxygen; the rate of decomposition increases in contact with metals, except aluminium. Decomposes vigorously in contact with permanganates. When involved in a fire, mixtures with combustible material may be explosive. Causes burns to skin, eyes and mucous membranes. Even though stabilized, these solutions may evolve oxygen.	2015
–	–	–	F-A, S-A	Category E SW2 H1	–	Contents may evolve toxic fumes or vapour. Gases evolved are toxic by skin contact or by inhalation.	2016
–	–	–	F-A, S-B	Category E SW2 H1	–	Contents may evolve irritant gas or vapour with lachrymatory effects.	2017
–	T3	TP33	F-A, S-A	Category A	–	Crystalline solid. Melting point of pure <i>para</i> -chloroaniline: 70°C approximately. Toxic if swallowed, by skin contact or by dust inhalation.	2018
–	T7	TP2	F-A, S-A	Category A	SG35	Colourless liquid. May be a mixture of two of the isomers (e.g. <i>ortho</i> - and <i>meta</i> -) of chloroaniline. Reacts with acids. Toxic if swallowed, by skin contact or by inhalation.	2019
–	T1	TP33	F-A, S-A	Category A	–	A wide range of toxic solids. Toxic if swallowed, by skin contact or by dust inhalation.	2020
–	T4	TP1	F-A, S-A	Category A	–	A wide range of toxic liquids. Toxic if swallowed, by skin contact or by inhalation.	2021
–	T7	TP2 TP13	F-A, S-B	Category B	–	Colourless to brownish-yellow liquid mixture with a phenolic odour. Miscible with water. Toxic if swallowed, by skin contact or by inhalation. Causes burns to skin, eyes and mucous membranes. "Cresylic acid" is a generic name for mixtures of cresols and higher alkylphenols, in varying proportions. It generally contains more than 95% phenolic compounds.	2022

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						Limited quantities	Excepted quantities	Instructions	Provisions	Instructions	Provisions
(1)	(2) 3.1.2	(3) 2.0	(4) 2.0	(5) 2.0.1.3	(6) 3.3	(7a) 3.4	(7b) 3.5	(8) 4.1.4	(9) 4.1.4	(10) 4.1.4	(11) 4.1.4
2023	EPICHLOROHYDRIN	6.1	3 P	II	279	100 mL	E4	P001	-	IBC02	-
2024	MERCURY COMPOUND, LIQUID, N.O.S.	6.1	- P	I	43 66 274	0	E5	P001	-	-	-
2024	MERCURY COMPOUND, LIQUID, N.O.S.	6.1	- P	II	43 66 274	100 mL	E4	P001	-	IBC02	-
2024	MERCURY COMPOUND, LIQUID, N.O.S.	6.1	- P	III	43 66 223 274	5 L	E1	P001 LP01	-	IBC03	-
2025	MERCURY COMPOUND, SOLID, N.O.S.	6.1	- P	I	43 66 274	0	E5	P002	-	IBC07	B1
2025	MERCURY COMPOUND, SOLID, N.O.S.	6.1	- P	II	43 66 274	500 g	E4	P002	-	IBC08	B4 B21
2025	MERCURY COMPOUND, SOLID, N.O.S.	6.1	- P	III	43 66 223 274	5 kg	E1	P002 LP02	-	IBC08	B3
2026	PHENYLMERCURIC COMPOUND, N.O.S.	6.1	- P	I	43 274	0	E5	P002	-	IBC07	B1
2026	PHENYLMERCURIC COMPOUND, N.O.S.	6.1	- P	II	43 274	500 g	E4	P002	-	IBC08	B4 B21
2026	PHENYLMERCURIC COMPOUND, N.O.S.	6.1	- P	III	43 223 274	5 kg	E1	P002 LP02	-	IBC08	B3
2027	SODIUM ARSENITE, SOLID	6.1	-	II	43	500 g	E4	P002	-	IBC08	B4 B21
2028	BOMBS, SMOKE, NON-EXPLOSIVE with corrosive liquid, without initiating device	8	-	II	-	0	E0	P803	-	-	-
2029	HYDRAZINE, ANHYDROUS	8	3/6.1	I	-	0	E0	P001	-	-	-
2030	HYDRAZINE, AQUEOUS SOLUTION with more than 37% hydrazine, by mass	8	6.1	I	-	0	E0	P001	-	-	-
2030	HYDRAZINE, AQUEOUS SOLUTION with more than 37% hydrazine, by mass	8	6.1	II	-	1 L	E0	P001	-	IBC02	-
2030	HYDRAZINE, AQUEOUS SOLUTION with more than 37% hydrazine, by mass	8	6.1	III	-	5 L	E1	P001 LP01	-	IBC03	-
2031	NITRIC ACID other than red fuming, with more than 70% nitric acid	8	5.1	I	-	0	E0	P001	PP81	-	-

UN No.	Portable tanks and bulk containers		EmS	Stowage and handling	Segregation	Properties and observations	UN No.
	Tank instructions	Provisions					
(12)	(13) 4.2.5 4.3	(14) 4.2.5	(15) 5.4.3.2 7.8	(16a) 7.1 7.3-7.7	(16b) 7.2-7.7	(17)	(18)
-	T7	TP2 TP13	F-E, S-D	Category A SW2	-	Colourless flammable liquid with a chloroform-like odour. Flashpoint: approximately 32°C c.c. Toxic if swallowed, by skin contact or by inhalation.	2023
-	-	-	F-A, S-A	Category B SW2	-	Toxic if swallowed, by skin contact or by inhalation.	2024
-	-	-	F-A, S-A	Category B SW2	-	See entry above.	2024
-	-	-	F-A, S-A	Category B SW2	-	See entry above.	2024
-	T6	TP33	F-A, S-A	Category A	-	Toxic if swallowed, by skin contact or by dust inhalation.	2025
-	T3	TP33	F-A, S-A	Category A	-	See entry above.	2025
-	T1	TP33	F-A, S-A	Category A	-	See entry above.	2025
-	T6	TP33	F-A, S-A	Category A	-	Usually white crystals or powder. Toxic if swallowed, by skin contact or by dust inhalation.	2026
-	T3	TP33	F-A, S-A	Category A	-	See entry above.	2026
-	T1	TP33	F-A, S-A	Category A	-	See entry above.	2026
-	T3	TP33	F-A, S-A	Category A	-	Greyish-white powder. Soluble in water. Reacts with oxidizing substances, evolving heat. Toxic if swallowed, by skin contact or by dust inhalation.	2027
-	-	-	F-A, S-B	Category E SW2	-	Corrosive content evolves dense smoke when in contact with air. Corrosive content may cause acid burns to skin.	2028
-	-	-	F-E, S-C	Category D SW2	SG5 SG8 SG35	Colourless, flammable liquid with an ammoniacal odour. Reacts violently with acids. Flashpoint: 52°C c.c. Miscible with water. Highly reactive reducing agent. Ignites spontaneously when in contact with porous materials such as earth, wood or cloth. Toxic if swallowed, by skin contact or by inhalation. Causes severe burns to skin, eyes and mucous membranes.	2029
-	T10	TP2 TP13	F-A, S-B	Category D SW2	SG35	Colourless liquid. Powerful reducing agent, burns readily. Toxic if swallowed, by skin contact or by inhalation. Causes burns to skin, eyes and mucous membranes. Reacts violently with acids.	2030
-	T7	TP2 TP13	F-A, S-B	Category D SW2	SG35	See entry above.	2030
-	T4	TP1	F-A, S-B	Category D SW2	SG35	See entry above.	2030
-	T10	TP2 TP13	F-A, S-Q	Category D	SG6 SG16 SG17 SG19	Colourless liquid. Powerful oxidant; may cause fire in contact with organic materials such as wood, cotton or straw, evolving highly toxic gases (brown fumes). Highly corrosive to most metals. Causes severe burns to skin, eyes and mucous membranes.	2031

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						Limited quantities	Excepted quantities	Instructions	Provisions	Instructions	Provisions
(1)	(2) 3.1.2	(3) 2.0	(4) 2.0	(5) 2.0.1.3	(6) 3.3	(7a) 3.4	(7b) 3.5	(8) 4.1.4	(9) 4.1.4	(10) 4.1.4	(11) 4.1.4
2031	NITRIC ACID other than red fuming, with at least 65% but with not more than 70% nitric acid.	8	5.1	II	–	1 L	E2	P001	PP81	IBC02	B15 B20
2031	NITRIC ACID other than red fuming, with less than 65% nitric acid	8	–	II	–	1 L	E2	P001	PP81	IBC02	B15 B20
2032	NITRIC ACID, RED FUMING	8	5.1/6.1	I	–	0	E0	P602	–	–	–
2033	POTASSIUM MONOXIDE	8	–	II	–	1 kg	E2	P002	–	IBC08	B4 B21
2034	HYDROGEN AND METHANE MIXTURE, COMPRESSED	2.1	–	–	–	0	E0	P200	–	–	–
2035	1,1,1-TRIFLUOROETHANE (REFRIGERANT GAS R 143a)	2.1	–	–	–	0	E0	P200	–	–	–
2036	XENON	2.2	–	–	378	120 mL	E1	P200	–	–	–
2037	RECEPTACLES, SMALL, CONTAINING GAS (GAS CARTRIDGES) without a release device, non-refillable	2	–	–	191 277 303 344	see SP277	E0	P003	PP17	–	–
2038	DINITROTOLUENES, LIQUID	6.1	– P	II	–	100 mL	E4	P001	–	IBC02	B20
2044	2,2-DIMETHYLPROPANE	2.1	–	–	–	0	E0	P200	–	–	–
2045	ISOBUTYL ALDEHYDE (ISOBUTYRALDEHYDE)	3	–	II	–	1 L	E2	P001	–	IBC02	–
2046	CYMENES	3	– P	III	–	5 L	E1	P001 LP01	–	IBC03	–
2047	DICHLOROPROPENES	3	–	II	–	1 L	E2	P001	–	IBC02	–
2047	DICHLOROPROPENES	3	–	III	223	5 L	E1	P001 LP01	–	IBC03	–
2048	DICYCLOPENTADIENE	3	–	III	–	5 L	E1	P001 LP01	–	IBC03	–
2049	DIETHYLBENZENE	3	–	III	–	5 L	E1	P001 LP01	–	IBC03	–
2050	DIISOBUTYLENES, ISOMERIC COMPOUNDS	3	–	II	–	1 L	E2	P001	–	IBC02	–
2051	2-DIMETHYLAMINOETHANOL	8	3	II	–	1 L	E2	P001	–	IBC02	–
2052	DIPENTENE	3	– P	III	–	5 L	E1	P001 LP01	–	IBC03	–
2053	METHYL ISOBUTYL CARBINOL	3	–	III	–	5 L	E1	P001 LP01	–	IBC03	–

UN No.	Portable tanks and bulk containers		EmS	Stowage and handling	Segregation	Properties and observations	UN No.
	Tank instructions	Provisions					
(12)	(13) 4.2.5 4.3	(14) 4.2.5	(15) 5.4.3.2 7.8	(16a) 7.1 7.3–7.7	(16b) 7.2–7.7	(17)	(18)
–	T8	TP2	F-A, S-Q	Category D	SG6 SG16 SG17 SG19	Colourless liquid. Oxidant; may cause fire in contact with organic materials such as wood, cotton or straw, evolving highly toxic gases (brown fumes). Highly corrosive to most metals. Causes severe burns to skin, eyes and mucous membranes.	2031
–	T8	TP2	F-A, S-B	Category D	–	See entry above.	2031
–	T20	TP2 TP13	F-A, S-Q	Category D SW2	SG6 SG16 SG17 SG19	Brown liquid. Powerful oxidant; may cause fire in contact with organic materials such as wood, cotton or straw. Highly corrosive to most metals. Toxic if swallowed, by skin contact or by vapour inhalation. Causes severe burns to skin, eyes and mucous membranes.	2032
–	T3	TP33	F-A, S-B	Category A	SG22 SG35	Deliquescent crystalline solid. Reacts violently with water, generating heat. Reacts with ammonium salts, evolving ammonia gas. Reacts violently with acids. In the presence of moisture, corrosive to aluminium, zinc and tin. Causes burns to skin, eyes and mucous membranes.	2033
–	–	–	F-D, S-U	Category E SW2	SG46	Flammable, odourless gas mixtures. Much lighter than air.	2034
–	T50	–	F-D, S-U	Category B SW2	–	Flammable gas with a slight odour. Much heavier than air (2.9).	2035
–	–	–	F-C, S-V	Category A	–	Liquefied, inert gas. Much heavier than air (4.5).	2036
–	–	–	F-D, S-U	Category B SW2	–	Normally contain mixtures of liquefied butane and propane in various proportions for use in camping stoves, etc.	2037
–	T7	TP2	F-A, S-A	Category A	–	Immiscible with water. A commercial grade consisting of a mixture of the 2,4-, 3,4- and 3,5-isomers is an oily liquid. Toxic if swallowed, by skin contact or by inhalation.	2038
–	–	–	F-D, S-U	Category E SW2	–	Flammable hydrocarbon gas. Explosive limits: 1.4% to 7.2%. Heavier than air (2.48).	2044
–	T4	TP1	F-E, S-D	Category E SW2	–	Colourless liquid with a characteristic pungent odour. Flashpoint: –24°C c.c. Explosive limits: 1% to 12%. Immiscible with water.	2045
–	T2	TP1	F-E, S-D	Category A	–	Colourless liquids with an aromatic odour. Immiscible with water. Explosive limits: 0.7% to 5.6%.	2046
–	T4	TP1	F-E, S-D	Category B	–	Colourless or yellow liquids with a sweet odour. Explosive limits: 5% to 14%. Immiscible with water. Irritating to skin, eyes and mucous membranes.	2047
–	T2	TP1	F-E, S-D	Category A	–	See entry above.	2047
–	T2	TP1	F-E, S-D	Category A	–	The pure substance is a solid with a melting point of 34°C. Flashpoint: 26°C to 38°C o.c. Commercial products are liquids. Immiscible with water. Harmful if swallowed.	2048
–	T2	TP1	F-E, S-D	Category A	–	Colourless liquids. Flashpoint: 49°C to 56°C c.c. Immiscible with water. The commercial product is a mixture of isomers.	2049
–	T4	TP1	F-E, S-D	Category B	–	Colourless liquids. Flashpoint: –18°C to 21°C c.c. Explosive limits: 0.8% to 4.8%. Immiscible with water.	2050
–	T7	TP2	F-E, S-C	Category A	–	Colourless, flammable liquid with a fishy odour. Flashpoint: 31°C o.c. Miscible with water. Causes burns to skin, eyes and mucous membranes.	2051
–	T2	TP1	F-E, S-E	Category A	–	Colourless liquid with a lemon-like odour. Flashpoint: 43°C c.c. Explosive limits: 0.7% to 6.1%. Immiscible with water.	2052
–	T2	TP1	F-E, S-D	Category A	–	Colourless liquid. Flashpoint: 41°C c.c. Explosive limits: 1% to 5.5%. Miscible with water. Harmful by inhalation.	2053

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						Limited quantities	Excepted quantities	Instructions	Provisions	Instructions	Provisions
(1)	(2) 3.1.2	(3) 2.0	(4) 2.0	(5) 2.0.1.3	(6) 3.3	(7a) 3.4	(7b) 3.5	(8) 4.1.4	(9) 4.1.4	(10) 4.1.4	(11) 4.1.4
2054	MORPHOLINE	8	3	I	–	0	E0	P001	–	–	–
2055	STYRENE MONOMER, STABILIZED	3	–	III	386	5 L	E1	P001	–	IBC03	–
2056	TETRAHYDROFURAN	3	–	II	–	1 L	E2	P001	–	IBC02	–
2057	TRIPROPYLENE	3	– P	II	–	1 L	E2	P001	–	IBC02	–
2057	TRIPROPYLENE	3	– P	III	223	5 L	E1	P001 LP01	–	IBC03	–
2058	VALERALDEHYDE	3	–	II	–	1 L	E2	P001	–	IBC02	–
2059	NITROCELLULOSE SOLUTION, FLAMMABLE with not more than 12.6% nitrogen, by dry mass, and not more than 55% nitrocellulose	3	–	I	198	0	E0	P001	–	–	–
2059	NITROCELLULOSE SOLUTION, FLAMMABLE with not more than 12.6% nitrogen, by dry mass, and not more than 55% nitrocellulose	3	–	II	198	1 L	E0	P001	–	IBC02	–
2059	NITROCELLULOSE SOLUTION, FLAMMABLE with not more than 12.6% nitrogen, by dry mass, and not more than 55% nitrocellulose	3	–	III	198 223	5 L	E0	P001 LP01	–	IBC03	–
2067	AMMONIUM NITRATE BASED FERTILIZER	5.1	–	III	186 306 307 900 967	5 kg	E1	P002 LP02	–	IBC08	B3
2071	AMMONIUM NITRATE BASED FERTILIZER	9	–	III	186 193	5 kg	E1	P002 LP02	–	IBC08	B3
2073	AMMONIA SOLUTION relative density less than 0.880 at 15°C in water, with more than 35% but not more than 50% ammonia	2.2	– P	–	–	120 mL	E0	P200	–	–	–
2074	ACRYLAMIDE, SOLID	6.1	–	III	–	5 kg	E1	P002 LP02	–	IBC08	B3
2075	CHLORAL, ANHYDROUS, STABILIZED	6.1	–	II	–	100 mL	E4	P001	–	IBC02	–
2076	CRESOLS, LIQUID	6.1	8	II	–	100 mL	E4	P001	–	IBC02	–

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	Tank instructions	Provisions					
(12)	(13) 4.2.5 4.3	(14) 4.2.5	(15) 5.4.3.2 7.8	(16a) 7.1 7.3–7.7	(16b) 7.2–7.7	(17)	(18)
–	T10	TP2	F-E, S-C	Category A	–	Colourless liquid with a fishy odour. Flashpoint: 38°C o.c. Explosive limits: 2% to 11.2%. Miscible with water. Harmful by skin contact or by inhalation. Corrosive to skin, eyes and mucous membranes.	2054
–	T2	TP1	F-E, S-D	Category C SW1	–	Colourless, oily liquid. Flashpoint: 32°C c.c. Explosive limits: 1.1% to 6.1%. Immiscible with water. Irritating to skin, eyes and mucous membranes.	2055
–	T4	TP1	F-E, S-D	Category B	–	Colourless liquid with an ethereal odour. Flashpoint: below –18°C c.c. Explosive limits: 1.5% to 12%. Miscible with water.	2056
–	T4	TP2	F-E, S-D	Category B	–	Colourless liquid. Immiscible with water.	2057
–	T2	TP2	F-E, S-D	Category A	–	See entry above.	2057
–	T4	TP1	F-E, S-D	Category B	–	Colourless liquid. Flashpoint: 12°C c.c. Partially miscible with water. Irritating to skin, eyes and mucous membranes.	2058
–	T11	TP1 TP8 TP27	F-E, S-D	Category E	–	When involved in a fire, evolves toxic nitrous fumes.	2059
–	T4	TP1 TP8	F-E, S-D	Category B	–	See entry above.	2059
–	T2	TP1	F-E, S-D	Category A	–	See entry above.	2059
–	T1 BK2 BK3	TP33	F-H, S-Q	Category C SW1 SW14 SW23	SG16 SG42 SG45 SG47 SG48 SG51 SG56 SG58 SG59 SG61	Crystals, granules or prills. Wholly or partly soluble in water. Supporters of combustion. A major fire aboard a ship carrying these substances may involve a risk of explosion in the event of contamination (e.g. by fuel oil) or strong confinement. An adjacent detonation may also involve a risk of explosion. If heated strongly, decompose, giving off toxic gases and gases which support combustion. Transport of AMMONIUM NITRATE liable to self-heating sufficient to initiate decomposition is prohibited.	2067
–	BK2	–	F-H, S-Q	Category A SW26	–	Usually granules. Wholly or partly soluble in water. These mixtures may be subject to self-sustaining decomposition if heated. The temperature in such a reaction can reach 500°C. Decomposition, once initiated, may spread throughout the remainder, producing gases which are toxic. None of these mixtures is subject to the explosion hazard. Transport of AMMONIUM NITRATE liable to self-heating sufficient to initiate decomposition is prohibited.	2071
–	–	–	F-C, S-U	Category E SW2	SG35 SG46	Solution in water of non-flammable gas with a pungent odour. Reacts violently with acids. Extremely dangerous to the eyes.	2073
–	T1	TP33	F-A, S-A	Category A SW1 H2	–	Crystals or powder. Soluble in water. May polymerise violently on melting. Toxic if swallowed, by skin contact or by inhalation.	2074
–	T7	TP2	F-A, S-A	Category D SW2	–	Colourless, mobile liquid, evolving toxic vapours which are considerably heavier than air. Toxic if swallowed, by skin contact or by inhalation.	2075
–	T7	TP2	F-A, S-B	Category B	–	Colourless to light yellow liquids. Miscible with water. Melting point of meta-CRESOL: 12°C. Toxic if swallowed, by skin contact or by inhalation. Cause burns to skin, eyes and mucous membranes.	2076

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						Limited quantities	Excepted quantities	Instructions	Provisions	Instructions	Provisions
(1)	(2) 3.1.2	(3) 2.0	(4) 2.0	(5) 2.0.1.3	(6) 3.3	(7a) 3.4	(7b) 3.5	(8) 4.1.4	(9) 4.1.4	(10) 4.1.4	(11) 4.1.4
2077	<i>alpha</i> -NAPHTHYLAMINE	6.1	–	III	–	5 kg	E1	P002 LP02	–	IBC08	B3
2078	TOLUENE DIISOCYANATE	6.1	–	II	279	100 mL	E4	P001	–	IBC02	–
2079	DIETHYLENETRIAMINE	8	–	II	–	1 L	E2	P001	–	IBC02	–
2186	HYDROGEN CHLORIDE, REFRIGERATED LIQUID	2.3	8	–	900	–	–	–	–	–	–
2187	CARBON DIOXIDE, REFRIGERATED LIQUID	2.2	–	–	–	120 mL	E1	P203	–	–	–
2188	ARSINE	2.3	2.1	–	–	0	E0	P200	–	–	–
2189	DICHLOROSILANE	2.3	2.1/8	–	–	0	E0	P200	–	–	–
2190	OXYGEN DIFLUORIDE, COMPRESSED	2.3	5.1/8	–	–	0	E0	P200	–	–	–
2191	SULPHURYL FLUORIDE	2.3	–	–	–	0	E0	P200	–	–	–
2192	GERMANE	2.3	2.1	–	–	0	E0	P200	–	–	–
2193	HEXAFLUOROETHANE (REFRIGERANT GAS R 116)	2.2	–	–	–	120 mL	E1	P200	–	–	–
2194	SELENIUM HEXAFLUORIDE	2.3	8	–	–	0	E0	P200	–	–	–
2195	TELLURIUM HEXAFLUORIDE	2.3	8	–	–	0	E0	P200	–	–	–
2196	TUNGSTEN HEXAFLUORIDE	2.3	8	–	–	0	E0	P200	–	–	–
2197	HYDROGEN IODIDE, ANHYDROUS	2.3	8	–	–	0	E0	P200	–	–	–
2198	PHOSPHORUS PENTAFLUORIDE	2.3	8	–	–	0	E0	P200	–	–	–

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	Tank instructions	Provisions					
(12)	(13) 4.2.5 4.3	(14) 4.2.5	(15) 5.4.3.2 7.8	(16a) 7.1 7.3–7.7	(16b) 7.2–7.7	(17)	(18)
–	T1	TP33	F-A, S-A	Category A	–	White crystals. Toxic if swallowed, by skin contact or by inhalation.	2077
–	T7	TP2 TP13	F-A, S-A	Category C SW1 SW2	–	Colourless to pale yellow liquid with a pungent odour. Immiscible with water but reacts with it to form carbon dioxide. Melting point: 20°C (pure product). Toxic if swallowed, by skin contact or by inhalation. Irritating to skin, eyes and mucous membranes.	2078
–	T7	TP2	F-A, S-B	Category A SW2	SG35	Yellow hygroscopic liquid with ammoniacal odour. Soluble in water. Strongly alkaline, corrosive. Can form explosive mixtures with nitric acid. Reacts with oxidizing substances. Corrosive to copper and its alloys. Reacts violently with acids. Liquid and vapour can cause severe damage to skin and eyes.	2079
–	–	–	–	–	–	Transport is prohibited.	2186
–	T75	TP5	F-C, S-V	Category D	–	Non-flammable, liquefied gas, colourless and odourless. Heavier than air (1.5). Cannot remain in the liquid state above 31°C.	2187
–	–	–	F-D, S-U	Category D SW2	–	Flammable, toxic, colourless gas with a garlic odour. Explosive limits: 3.9% to 77.8%. Much heavier than air (2.8).	2188
–	–	–	F-D, S-U	Category D SW2	SG4 SG9 SG72	Flammable, toxic and corrosive gas. Reacts with water, evolving hydrogen chloride. Highly irritating to skin, eyes and mucous membranes.	2189
–	–	–	F-C, S-W	Category D SW2 H1	SG6 SG19	Non-flammable, toxic and corrosive, colourless gas with a foul odour. Strong oxidizing agent. Reacts slowly with water or moist air to produce poisonous and corrosive fumes. Corrosive to glass and to most metals. Heavier than air (1.9). Highly irritating to skin, eyes and mucous membranes.	2190
–	–	–	F-C, S-U	Category D SW2	–	Non-flammable, toxic, colourless, odourless gas. Reacts with water or moist air to produce toxic and corrosive fumes. Much heavier than air (3.5). Irritating to skin, eyes and mucous membranes.	2191
–	–	–	F-D, S-U	Category D SW2	–	Flammable, toxic, colourless gas with a pungent odour. Much heavier than air (2.6).	2192
–	–	–	F-C, S-V	Category A	–	Non-flammable, colourless and odourless gas. Much heavier than air (4.8). Cannot remain in liquid state above 24.3°C.	2193
–	–	–	F-C, S-U	Category D SW2	–	Colourless, toxic and corrosive gas. Corrosive to glass and to most metals. Heavier than air. Highly irritating to skin, eyes and mucous membranes.	2194
–	–	–	F-C, S-U	Category D SW2	–	Non-flammable, toxic and corrosive colourless gas with an unpleasant odour. Decomposes in water, evolving highly toxic and corrosive fumes. Corrosive to glass and to most metals. Much heavier than air (7.2). Highly irritating to skin, eyes and mucous membranes.	2195
–	–	–	F-C, S-U	Category D SW2	–	Non-flammable, toxic and corrosive, colourless gas, or yellow liquid. Decomposes in water or moist air, evolving highly toxic and corrosive fumes. Corrosive to glass and to most metals. Much heavier than air (10.3). Boiling point: 19.5°C. Highly irritating to skin, eyes and mucous membranes.	2196
–	–	–	F-C, S-U	Category D SW2	–	Non-flammable, toxic and corrosive colourless gas with a pungent odour. Highly corrosive in the presence of water. Much heavier than air (4.4). Highly irritating to skin, eyes and mucous membranes.	2197
–	–	–	F-C, S-U	Category D SW2	–	Non-flammable, toxic and corrosive gas with an irritating odour. Reacts with water or moist air to produce toxic and corrosive fumes. Corrosive to glass and to most metals. Much heavier than air (4.3). Highly irritating to skin, eyes and mucous membranes.	2198

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						Limited quantities	Excepted quantities	Instructions	Provisions	Instructions	Provisions
(1)	(2) 3.1.2	(3) 2.0	(4) 2.0	(5) 2.0.1.3	(6) 3.3	(7a) 3.4	(7b) 3.5	(8) 4.1.4	(9) 4.1.4	(10) 4.1.4	(11) 4.1.4
2199	PHOSPHINE	2.3	2.1	-	-	0	E0	P200	-	-	-
2200	PROPADIENE, STABILIZED	2.1	-	-	386	0	E0	P200	-	-	-
2201	NITROUS OXIDE, REFRIGERATED LIQUID	2.2	5.1	-	-	0	E0	P203	-	-	-
2202	HYDROGEN SELENIDE, ANHYDROUS	2.3	2.1	-	-	0	E0	P200	-	-	-
2203	SILANE	2.1	-	-	-	0	E0	P200	-	-	-
2204	CARBONYL SULPHIDE	2.3	2.1	-	-	0	E0	P200	-	-	-
2205	ADIPONITRILE	6.1	-	III	-	5 L	E1	P001 LP01	-	IBC03	-
2206	ISOCYANATES, TOXIC, N.O.S. or ISOCYANATE SOLUTION, TOXIC, N.O.S.	6.1	-	II	274	100 mL	E4	P001	-	IBC02	-
2206	ISOCYANATES, TOXIC, N.O.S. or ISOCYANATE SOLUTION, TOXIC, N.O.S.	6.1	-	III	223 274	5 L	E1	P001 LP01	-	IBC03	-
2208	CALCIUM HYPOCHLORITE MIXTURE, DRY with more than 10% but not more than 39% available chlorine	5.1	- P	III	314	5 kg	E1	P002	PP85	-	-
2209	FORMALDEHYDE SOLUTION with not less than 25% formaldehyde	8	-	III	-	5 L	E1	P001 LP01	-	IBC03	-
2210	MANEB or MANEB PREPARATION with not less than 60% maneb	4.2	4.3 P	III	273	0	E1	P002	PP100	IBC06	-
2211	POLYMERIC BEADS, EXPANDABLE evolving flammable vapour	9	-	III	382 965	5 kg	E1	P002	PP14	IBC08	B3 B6

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	Tank instructions	Provisions					
(12)	(13) 4.2.5 4.3	(14) 4.2.5	(15) 5.4.3.2 7.8	(16a) 7.1 7.3-7.7	(16b) 7.2-7.7	(17)	(18)
-	-	-	F-D, S-U	Category D SW2	-	Flammable, toxic, colourless gas with a garlic odour. Ignites spontaneously in air. Heavier than air (1.2). Irritating to skin, eyes and mucous membranes.	2199
-	-	-	F-D, S-U	Category B SW1 SW2	-	Liquefied, flammable, colourless gas. Explosive limits: 1.7% to 12%. Heavier than air (1.4). Boiling point: -34°C. Irritating to skin, eyes and mucous membranes.	2200
-	T75	TP5 TP22	F-C, S-W	Category D SW2	-	Liquefied, non-flammable, colourless gas with a slightly sweet odour. Strong oxidizing agent. Heavier than air (1.5). Cannot remain in liquid state above 36.5°C.	2201
-	-	-	F-D, S-U	Category D SW2	-	Flammable, toxic, colourless gas with a disagreeable odour. Much heavier than air (2.8). Highly irritating to skin, eyes and mucous membranes.	2202
-	-	-	F-D, S-U	Category E SW2	SG43 SG46	Flammable, colourless gas with a foul odour. Explosive limits: 1% to 100%. Ignites spontaneously in air. Strong reducing agent which reacts violently with oxidizing substances. Heavier than air (1.1).	2203
-	-	-	F-D, S-U	Category D SW2	-	Flammable, toxic, colourless gas with a foul odour. Much heavier than air (2.1).	2204
-	T3	TP1	F-A, S-A	Category A	-	Colourless, odourless oil. Decomposes above 93°C, evolving hydrogen cyanide, a highly toxic and flammable gas. Toxic if swallowed, by skin contact or by inhalation.	2205
-	T11	TP2 TP13 TP27	F-A, S-A	Category E SW1 SW2	-	Liquids with a pungent odour. Immiscible with water but react with it to form carbon dioxide. Toxic if swallowed, by skin contact or by inhalation. If under deck, with mechanical ventilation, six air changes per hour, except when carried in closed containers, when two air changes per hour are required. Irritating to skin, eyes and mucous membranes.	2206
-	T7	TP1 TP13 TP28	F-A, S-A	Category E SW1 SW2	-	See entry above.	2206
-	-	-	F-H, S-Q	Category D SW1 SW11	SG35 SG38 SG49 SG53 SG60	White or yellowish solid (powder, granules or tablets) with chlorine-like odour. Soluble in water. May cause fire in contact with organic material or ammonium compounds. Substances are liable to exothermic decomposition at elevated temperatures. This condition may lead to fire or explosion. Decomposition can be initiated by heat or by impurities (e.g. powdered metals (iron, manganese, cobalt, magnesium) and their compounds). Liable to heat slowly. Reacts with acids, evolving chlorine, an irritating, corrosive and toxic gas. In the presence of moisture, corrosive to most metals. Dust irritates mucous membranes.	2208
-	T4	TP1	F-A, S-B	Category A	-	Colourless, clear liquid, with a suffocating pungent odour. Usually stabilized with methyl alcohol. Miscible with water. Causes burns to skin, eyes and mucous membranes.	2209
-	T1	TP33	F-G, S-L	Category A H1	SG26 SG29	Yellow powder, liable to heat and to ignite spontaneously in air. May evolve toxic, irritating or flammable fumes when wet, when involved in a fire or in contact with acids. Used as fungicide.	2210
-	T1	TP33	F-A, S-I	Category E SW1 SW6	SG5 SG14	A moulding material in bead or granular form consisting predominantly of polystyrene, poly(methyl methacrylate) or other polymeric material and containing 5% to 8% of a volatile hydrocarbon which is predominantly pentane. During storage, a small proportion of this pentane is released to the atmosphere; this proportion increases at elevated temperatures.	2211

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						Limited quantities	Excepted quantities	Instructions	Provisions	Instructions	Provisions
(1)	(2)	(3)	(4)	(5)	(6)	(7a)	(7b)	(8)	(9)	(10)	(11)
	3.1.2	2.0	2.0	2.0.1.3	3.3	3.4	3.5	4.1.4	4.1.4	4.1.4	4.1.4
2212	ASBESTOS, AMPHIBOLE (amosite, tremolite, actinolite, anthophyllite, crocidolite)	9	–	II	168 274	1 kg	E0	P002	PP37	IBC08	B4 B21
2213	PARAFORMALDEHYDE	4.1	–	III	223 967	5 kg	E1	P002 LP02	PP12	IBC08	B3
2214	PHTHALIC ANHYDRIDE with more than 0.05% of maleic anhydride	8	–	III	169 939	5 kg	E1	P002 LP02	–	IBC08	B3
2215	MALEIC ANHYDRIDE	8	–	III	–	5 kg	E1	P002	–	IBC08	B3
2215	MALEIC ANHYDRIDE, MOLTEN	8	–	III	–	0	E0	–	–	–	–
2216	FISHMEAL (FISHSCRAP), STABILIZED Anti-oxidant treated. Moisture content greater than 5% but not exceeding 12%, by mass. Fat content not more than 15%	9	–	III	29 117 300 308 907 928 945	0	E1	P900	–	IBC08	B3
2217	SEED CAKE with not more than 1.5% oil and not more than 11% moisture	4.2	–	III	29 117 142	0	E0	P002 LP02	PP20	IBC08	B3 B6
2218	ACRYLIC ACID, STABILIZED	8	3 P	II	386	1 L	E2	P001	–	IBC02	–
2219	ALLYL GLYCIDYL ETHER	3	–	III	–	5 L	E1	P001 LP01	–	IBC03	–

UN No.	Portable tanks and bulk containers		EmS	Stowage and handling	Segregation	Properties and observations	UN No.
	Tank instructions	Provisions					
(12)	(13)	(14)	(15)	(16a)	(16b)	(17)	(18)
	4.2.5 4.3	4.2.5	5.4.3.2 7.8	7.1 7.3–7.7	7.2–7.7		
–	T3	TP33	F-A, S-A	Category A SW2 H4	SG29	Mineral fibres of varying length. Non-combustible. Inhalation of the dust of asbestos fibres is dangerous and therefore exposure should be avoided at all times. Always prevent the generation of asbestos dust. A safe level of airborne concentration of asbestos fibres may be obtained through effective packing. Cargo spaces or freight containers that have contained any type of raw asbestos should be carefully cleaned before discharging any remaining cargo, loading other cargo or carrying out repair or maintenance work. Whenever possible, cleaning of cargo spaces should be carried out whilst the ship is in a port where proper facilities and equipment, including proper respiratory apparatus and protective clothing, is available. Parts of the body that may have been exposed should be immediately and thoroughly washed. All waste material should be collected in impermeable and sealed bags for safe disposal ashore. If cleaning cannot be carried out at the discharge port, arrangements should be made in advance for cleaning to be carried out at the next port where necessary facilities are available.	2212
–	T1 BK2 BK3	TP33	F-A, S-G	Category A SW23	–	White powder with a pungent odour. Evolves formaldehyde, particularly when heated, which is irritating to eyes and mucous membranes.	2213
–	T1	TP33	F-A, S-B	Category A	–	White powder or flakes and lumps containing a high proportion of dust. Melting point: 131°C. The vapour of the molten substance has a flashpoint of 152°C c.c. and forms a flammable atmosphere with explosive limits of 1.7% to 10.4%. Causes burns to skin, eyes and mucous membranes. May be carried in the molten state. The molten substance can cause severe skin burns.	2214
–	T1	TP33	F-A, S-B	Category A	SG50 SG57	White powder, needles, flakes, pellets, rods, briquettes, lumps or fused mass. Melting point: about 53°C. Fumes and dust are irritating to skin, eyes and mucous membranes. Inhalation can cause respiratory trouble.	2215
–	T4	TP3	F-A, S-B	Category A	SG50 SG57	Melting point: about 53°C. The vapour of the molten substance has a flashpoint of 103°C c.c. and forms a flammable atmosphere with explosive limits of 1.4% to 7.1%. Fumes are irritating to skin, eyes and mucous membranes.	2215
–	T1 BK2	TP33	F-A, S-J	Category B SW24	SG18 SG65	Brown to greenish-brown product obtained through heating and drying of oily fish. Strong odour which may affect other cargo. Liable to heat spontaneously unless of low fat content or effectively anti-oxidant treated.	2216
–	BK2	–	F-A, S-J	Category A SW1 SW4 H1	–	Residue remaining after oil has been extracted by a solvent process from oil-bearing seeds. Used mainly as an animal feed or fertilizer. The most common seed cakes include those derived from coconut (copra), cottonseed, groundnut (peanut), linseed, maize (hominy chop), niger seed, palm kernel, rape seed, rice bran, soya bean and sunflower seed and they may be shipped in the form of cake, flakes, pellets, meal, etc. May self-heat slowly if wet and ignite spontaneously. Before shipment, this cargo should be properly aged. The duration of ageing varies with the oil content. The seed cake should be substantially free from flammable solvent. Smoking and the use of naked lights should not be allowed during loading and unloading, and on entry to cargo spaces at any other time.	2217
–	T7	TP2	F-E S-C	Category C SW1 SW2	–	Colourless, flammable liquid with an acrid odour. Melting point: 13°C. Flashpoint: 54°C o.c. Miscible with water. May polymerize violently, which may cause fire and explosion, unless properly stabilized. Harmful if swallowed or by inhalation. Corrosive to skin, eyes and mucous membranes.	2218
–	T2	TP1	F-E, S-D	Category A	–	Colourless liquid. Flashpoint: 48°C c.c. Miscible with water. Harmful by inhalation. Irritating to skin, eyes and mucous membranes.	2219

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						Limited quantities	Excepted quantities	Instructions	Provisions	Instructions	Provisions
(1)	(2) 3.1.2	(3) 2.0	(4) 2.0	(5) 2.0.1.3	(6) 3.3	(7a) 3.4	(7b) 3.5	(8) 4.1.4	(9) 4.1.4	(10) 4.1.4	(11) 4.1.4
2222	ANISOLE	3	-	III	-	5 L	E1	P001 LP01	-	IBC03	-
2224	BENZONITRILE	6.1	-	II	-	100 mL	E4	P001	-	IBC02	-
2225	BENZENESULPHONYL CHLORIDE	8	-	III	-	5 L	E1	P001 LP01	-	IBC03	-
2226	BENZOTRICHLORIDE	8	-	II	-	1 L	E2	P001	-	IBC02	-
2227	n-BUTYL METHACRYLATE, STABILIZED	3	-	III	386	5 L	E1	P001 LP01	-	IBC03	-
2232	2-CHLOROETHANAL	6.1	-	I	354	0	E0	P602	-	-	-
2233	CHLOROANISIDINES	6.1	-	III	-	5 kg	E1	P002 LP02	-	IBC08	B3
2234	CHLOROBENZOTRIFLUORIDES	3	-	III	-	5 L	E1	P001 LP01	-	IBC03	-
2235	CHLOROBENZYL CHLORIDES, LIQUID	6.1	- P	III	-	5 L	E1	P001 LP01	-	IBC03	-
2236	3-CHLORO-4-METHYLPHENYL ISOCYANATE, LIQUID	6.1	-	II	-	100 mL	E4	P001	-	IBC02	-
2237	CHLORONITROANILINES	6.1	- P	III	-	5 kg	E1	P002 LP02	-	IBC08	B3
2238	CHLOROTOLUENES	3	-	III	-	5 L	E1	P001 LP01	-	IBC03	-
2239	CHLOROTOLUIDINES, SOLID	6.1	-	III	-	5 kg	E1	P002 LP02	-	IBC08	B3
2240	CHROMOSULPHURIC ACID	8	-	I	-	0	E0	P001	-	-	-
2241	CYCLOHEPTANE	3	- P	II	-	1 L	E2	P001	-	IBC02	-
2242	CYCLOHEPTENE	3	-	II	-	1 L	E2	P001	-	IBC02	-
2243	CYCLOHEXYL ACETATE	3	-	III	-	5 L	E1	P001 LP01	-	IBC03	-
2244	CYCLOPENTANOL	3	-	III	-	5 L	E1	P001 LP01	-	IBC03	-
2245	CYCLOPENTANONE	3	-	III	-	5 L	E1	P001 LP01	-	IBC03	-

UN No.	Portable tanks and bulk containers		EmS	Stowage and handling	Segregation	Properties and observations	UN No.
	Tank instructions	Provisions					
(12)	(13) 4.2.5 4.3	(14) 4.2.5	(15) 5.4.3.2 7.8	(16a) 7.1 7.3-7.7	(16b) 7.2-7.7	(17)	(18)
-	T2	TP1	F-E, S-D	Category A	-	Colourless to yellow liquid. Flashpoint: 41°C c.c. Explosive limits: 0.3% to 6.3%. Immiscible with water. Irritating to skin, eyes and mucous membranes.	2222
-	T7	TP2	F-A, S-A	Category A SW2	SG35	Colourless liquid with an odour similar to oil of bitter almonds. Reacts with acids, evolving hydrogen cyanide, a highly toxic and flammable gas. Toxic if swallowed, by skin contact or by inhalation.	2224
-	T4	TP1	F-A, S-B	Category A SW2	-	Colourless to slightly yellow liquid with a pungent odour. Melting point: 12°C. Immiscible with water. Decomposes slowly in water. Harmful if swallowed or by skin contact. Highly irritating to skin, eyes and mucous membranes.	2225
-	T7	TP2	F-A, S-B	Category A SW2	-	Colourless to slightly yellow or brown fuming liquid. Reacts with water, evolving hydrogen chloride, an irritating and corrosive gas apparent as white fumes. In the presence of moisture, corrosive to most metals. Harmful if swallowed, by skin contact or by inhalation. Burns skin and eyes. Vapour irritates eyes and mucous membranes.	2226
-	T2	TP1	F-E, S-D	Category C SW1	-	Colourless liquid. Flashpoint: 41°C c.c. Explosive limits: 2% to 8%. Immiscible with water. Irritating to skin, eyes and mucous membranes.	2227
-	T20	TP2 TP13 TP37	F-A, S-A	Category D SW2	-	Clear colourless liquid with a pungent odour. Miscible with water. Highly toxic if swallowed, by skin contact or by inhalation.	2232
-	T1	TP33	F-A, S-A	Category A	-	Crystalline solid. Melting point: 52°C. Soluble in water. Toxic if swallowed, by skin contact or by dust inhalation.	2233
-	T2	TP1	F-E, S-D	Category A SW2	-	Colourless liquids with an aromatic odour. Flashpoint: 36°C to 59°C c.c. On contact with moisture, can evolve hydrogen fluoride, which is a toxic and corrosive gas. Harmful by inhalation.	2234
-	T4	TP1	F-A, S-A	Category A	-	Colourless liquid. Immiscible with water. Toxic if swallowed, by skin contact or by inhalation.	2235
-	-	-	F-A, S-A	Category B SW2	-	Colourless liquid with a pungent odour. Immiscible with water. Reacts with water, evolving carbon dioxide. Toxic if swallowed, by skin contact or by inhalation. Irritating to skin, eyes and mucous membranes.	2236
-	T1	TP33	F-A, S-A	Category A	-	Yellow or orange crystalline powders or needles. Insoluble in water. Toxic if swallowed, by skin contact or by dust inhalation.	2237
-	T2	TP1	F-E, S-D	Category A	-	Colourless to brown liquids. Flashpoint: 43°C to 47°C c.c. Immiscible with water. When involved in a fire, evolve toxic gases. Harmful by skin contact or by inhalation. Irritating to eyes and mucous membranes.	2238
-	T1	TP33	F-A, S-A	Category A	-	Crystalline solids. Some isomers may melt at low temperature: melting range between 0°C and 24°C. Toxic if swallowed, by skin contact or by inhalation.	2239
-	T10	TP2 TP13	F-A, S-B	Category B SW2	SG6 SG16 SG17 SG19	A liquid mixture of sulphuric acid and a chromium compound (e.g. chromium trioxide or sodium dichromate) and sometimes also water. Highly corrosive to most metals. Causes severe burns to skin, eyes and mucous membranes.	2240
-	T4	TP2	F-E, S-D	Category B SW2	-	Oily liquid. Immiscible with water. Narcotic.	2241
-	T4	TP1	F-E, S-D	Category B	-	Oily liquid. Immiscible with water.	2242
-	T2	TP1	F-E, S-D	Category A	-	Colourless liquid. Flashpoint: 56°C c.c. Immiscible with water. Irritating to skin, eyes and mucous membranes.	2243
-	T2	TP1	F-E, S-D	Category A	-	Colourless, oily liquid. Flashpoint: 51°C c.c. Immiscible with water.	2244
-	T2	TP1	F-E, S-D	Category A	-	Colourless liquid. Flashpoint: 31°C c.c. Immiscible with water.	2245

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						Limited quantities	Excepted quantities	Instructions	Provisions	Instructions	Provisions
(1)	(2) 3.1.2	(3) 2.0	(4) 2.0	(5) 2.0.1.3	(6) 3.3	(7a) 3.4	(7b) 3.5	(8) 4.1.4	(9) 4.1.4	(10) 4.1.4	(11) 4.1.4
2246	CYCLOPENTENE	3	–	II	–	1 L	E2	P001	–	IBC02	B8
2247	<i>n</i> -DECANE	3	–	III	–	5 L	E1	P001 LP01	–	IBC03	–
2248	DI- <i>n</i> -BUTYLAMINE	8	3	II	–	1 L	E2	P001	–	IBC02	–
2249	DICHLORODIMETHYL ETHER, SYMMETRICAL	6.1	3	I	76	0	E0	P099	–	–	–
2250	DICHLOROPHENYL ISOCYANATES	6.1	–	II	–	500 g	E4	P002	–	IBC08	B4 B21
2251	BICYCLO[2.2.1]HEPTA-2,5-DIENE, STABILIZED (2,5-NORBORNADIENE, STABILIZED)	3	–	II	386	1 L	E2	P001	–	IBC02	–
2252	1,2-DIMETHOXYETHANE	3	–	II	–	1 L	E2	P001	–	IBC02	–
2253	<i>N,N</i> -DIMETHYLANILINE	6.1	–	II	–	100 mL	E4	P001	–	IBC02	–
2254	MATCHES, FUSEE	4.1	–	III	293	5 kg	E0	P407	–	–	–
2256	CYCLOHEXENE	3	–	II	–	1 L	E2	P001	–	IBC02	–
2257	POTASSIUM	4.3	–	I	–	0	E0	P403	PP31	IBC04	B1
2258	1,2-PROPYLENEDIAMINE	8	3	II	–	1 L	E2	P001	–	IBC02	–
2259	TRIETHYLENETETRAMINE	8	–	II	–	1 L	E2	P001	–	IBC02	–
2260	TRIPROPYLAMINE	3	8	III	–	5 L	E1	P001	–	IBC03	–
2261	XYLENOLS, SOLID	6.1	–	II	–	500 g	E4	P002	–	IBC08	B4 B21
2262	DIMETHYLCARBAMOYL CHLORIDE	8	–	II	–	1 L	E2	P001	–	IBC02	–

UN No.	Portable tanks and bulk containers		EmS	Stowage and handling	Segregation	Properties and observations	UN No.
	Tank instructions	Provisions					
(12)	(13) 4.2.5 4.3	(14) 4.2.5	(15) 5.4.3.2 7.8	(16a) 7.1 7.3–7.7	(16b) 7.2–7.7	(17)	(18)
–	T7	TP2	F-E, S-D	Category E	–	Colourless liquid. Flashpoint: –30°C c.c. Boiling point: 44°C. Immiscible with water. Irritating to skin, eyes and mucous membranes. Narcotic.	2246
–	T2	TP1	F-E, S-E	Category A	–	Colourless liquid. Flashpoint: 47°C c.c. Explosive limits: 0.6% to 5.5%. Immiscible with water.	2247
–	T7	TP2	F-E, S-C	Category A	–	Colourless, flammable liquid with an amine odour. Flashpoint: 39°C c.c. Partially miscible with water. Decomposes when heated, evolving flammable and toxic gases. Liquid is corrosive to skin, eyes and mucous membranes. Vapour irritates mucous membranes.	2248
–	–	–	F-E, S-D	Category D SW2	–	Colourless, volatile, flammable liquid. Flashpoint: 42°C c.c. Immiscible with water. Decomposed by heat and water. Highly toxic if swallowed, by skin contact or by inhalation. The transport of this substance is prohibited except with special authorization granted by the competent authorities.	2249
–	T3	TP33	F-A, S-A	Category B SW1 SW2	–	Colourless to yellowish crystalline solid with an irritating odour. Insoluble in water. Reacts with water, evolving carbon dioxide. Toxic if swallowed, by skin contact or by inhalation. May be carried in the molten state. Irritating to skin, eyes and mucous membranes.	2250
–	T7	TP2	F-E, S-D	Category D SW1	–	Colourless, volatile liquid. Flashpoint: below –18°C c.c. Explosive limits: 1.7% to 6.3%. Immiscible with water.	2251
–	T4	TP1	F-E, S-D	Category B	–	Colourless liquid with an ethereal odour. Flashpoint: 1°C c.c. Miscible with water.	2252
–	T7	TP2	F-A, S-A	Category A	–	Yellowish to brownish oily liquid. Combustible. Toxic if swallowed, by skin contact or by inhalation.	2253
–	–	–	F-A, S-I	Category A	–	Matches, the heads of which are prepared with a friction-sensitive igniter composition and a pyrotechnic composition which burns with little or no flame, but with intense heat, regardless of wind or other weather conditions.	2254
–	T4	TP1	F-E, S-D	Category E	–	Colourless liquid with an aromatic odour. Immiscible with water. Slightly irritating to skin, eyes and mucous membranes.	2256
–	T9	TP7 TP33	F-G, S-N	Category D H1	SG26 SG35	Soft, silvery metal, solid or liquid. Floats on water. Reacts violently with moisture, water or acids, evolving hydrogen, which may be ignited by the heat of the reaction. Highly reactive, sometimes with explosive effect.	2257
–	T7	TP2	F-E, S-C	Category A SW2	–	Colourless, flammable liquid with an ammoniacal odour. Flashpoint range: 33°C to 48°C c.c. Miscible with water. When involved in a fire, evolves toxic gases. Harmful by inhalation. Causes burns to skin and eyes. Irritating to mucous membranes.	2258
–	T7	TP2	F-A, S-B	Category B SW2	SG35	Moderately viscous, yellow combustible liquid with an ammoniacal odour. Miscible with water. Strongly alkaline. Can form explosive mixtures with nitric acid. When involved in a fire, evolves toxic gases. Corrosive to copper and copper alloys. Reacts violently with acids. Liquid and vapours cause burns to skin, eyes and mucous membranes. Causes skin allergy.	2259
–	T4	TP1	F-E, S-C	Category A SW2	–	Colourless liquid. Flashpoint: 35°C c.c. Partially miscible with water. When involved in a fire, evolves toxic gases. Harmful by inhalation. Causes burns to skin and eyes. Irritating to mucous membranes.	2260
–	T3	TP33	F-A, S-A	Category A	–	Crystals or needles. Toxic if swallowed, by skin contact or by inhalation.	2261
–	T7	TP2	F-A, S-B	Category A SW2	–	Colourless to yellow liquid with a pungent odour. Immiscible with water. Reacts with water, evolving toxic and corrosive fumes. Causes tears. Causes burns to skin, eyes and mucous membranes.	2262

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						Limited quantities	Excepted quantities	Instructions	Provisions	Instructions	Provisions
(1)	(2) 3.1.2	(3) 2.0	(4) 2.0	(5) 2.0.1.3	(6) 3.3	(7a) 3.4	(7b) 3.5	(8) 4.1.4	(9) 4.1.4	(10) 4.1.4	(11) 4.1.4
2263	DIMETHYLCYCLOHEXANES	3	–	II	–	1 L	E2	P001	–	IBC02	–
2264	<i>N,N</i> -DIMETHYL-CYCLOHEXYLAMINE	8	3	II	–	1 L	E2	P001	–	IBC02	–
2265	<i>N,N</i> -DIMETHYLFORMAMIDE	3	–	III	–	5 L	E1	P001 LP01	–	IBC03	–
2266	DIMETHYL- <i>N</i> -PROPYLAMINE	3	8	II	–	1 L	E2	P001	–	IBC02	–
2267	DIMETHYL THIOPHOSPHORYL CHLORIDE	6.1	8	II	–	100 mL	E4	P001	–	IBC02	–
2269	3,3'-IMINODIPROPYLAMINE	8	–	III	–	5 L	E1	P001 LP01	–	IBC03	–
2270	ETHYLAMINE, AQUEOUS SOLUTION with not less than 50% but not more than 70% ethylamine	3	8	II	–	1 L	E2	P001	–	IBC02	–
2271	ETHYL AMYL KETONES	3	–	III	–	5 L	E1	P001 LP01	–	IBC03	–
2272	<i>N</i> -ETHYLANILINE	6.1	–	III	–	5 L	E1	P001 LP01	–	IBC03	–
2273	2-ETHYLANILINE	6.1	–	III	–	5 L	E1	P001 LP01	–	IBC03	–
2274	<i>N</i> -ETHYL- <i>N</i> -BENZYLANILINE	6.1	–	III	–	5 L	E1	P001 LP01	–	IBC03	–
2275	2-ETHYLBUTANOL	3	–	III	–	5 L	E1	P001 LP01	–	IBC03	–
2276	2-ETHYLHEXYLAMINE	3	8	III	–	5 L	E1	P001	–	IBC03	–
2277	ETHYL METHACRYLATE, STABILIZED	3	–	II	386	1 L	E2	P001	–	IBC02	–
2278	<i>n</i> -HEPTENE	3	–	II	–	1 L	E2	P001	–	IBC02	–
2279	HEXACHLOROBUTADIENE	6.1	– P	III	–	5 L	E1	P001 LP01	–	IBC03	–
2280	HEXAMETHYLENEDIAMINE, MOLTEN	8	–	III	–	0	E0	–	–	–	–

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	Tank instructions	Provisions					
(12)	(13) 4.2.5 4.3	(14) 4.2.5	(15) 5.4.3.2 7.8	(16a) 7.1 7.3–7.7	(16b) 7.2–7.7	(17)	(18)
–	T4	TP1	F-E, S-D	Category B	–	Colourless liquids. Flashpoint: 5°C to 16°C c.c. Immiscible with water.	2263
–	T7	TP2	F-E, S-C	Category A SW2	–	Colourless, flammable liquid. Flashpoint: 43°C c.c. Partially miscible with water. Causes burns to skin, eyes and mucous membranes.	2264
–	T2	TP2	F-E, S-D	Category A	–	Colourless liquid. Flashpoint: 58°C c.c. Explosive limits: 2.2% to 16%. Miscible with water. May react violently with oxidizing materials.	2265
–	T7	TP2 TP13	F-E, S-C	Category B SW2	–	Colourless liquid with a fishy odour. Flashpoint: –11°C c.c. Miscible with water. Harmful by inhalation. Causes burns to skin, eyes and mucous membranes.	2266
–	T7	TP2	F-A, S-B	Category B SW1	–	Colourless, combustible liquid with a pungent odour. Reacts slowly with water, evolving hydrogen chloride, a corrosive gas apparent as white fumes. May decompose above 60°C, evolving flammable gases. Toxic if swallowed, by skin contact or by inhalation. Causes burns to skin, eyes and mucous membranes.	2267
–	T4	TP2	F-A, S-B	Category A	–	Colourless combustible liquid. Miscible with water. Harmful if swallowed or by inhalation. Corrosive to skin, eyes and mucous membranes.	2269
–	T7	TP1	F-E, S-C	Category B SW2	SG35	Aqueous solution of a flammable gas with an ammonia-like odour. Explosive limits: 3.5% to 14%. ETHYLAMINE SOLUTION, concentration 50%: flashpoint –11°C c.c.; boiling point 56°C. Pure ETHYLAMINE: boiling point 17°C. Miscible with water. Harmful by inhalation. Causes burns to skin, eyes and mucous membranes. Reacts violently with acids.	2270
–	T2	TP1	F-E, S-D	Category A	–	Colourless liquids. Vapour is much heavier than air (4.4). ETHYL <i>normal</i> -AMYL KETONE: flashpoint 43°C c.c. ETHYL <i>secondary</i> -AMYL KETONE: flashpoint 57°C c.c. Immiscible with water. Dissolves some types of plastics. Irritating to skin, eyes and mucous membranes.	2271
–	T4	TP1	F-A, S-A	Category A	SG17 SG35	Colourless to yellowish oily liquid. Reacts with acids, evolving highly toxic fumes of aniline and oxides of nitrogen. Reacts violently with oxidizing substances. Toxic if swallowed, by skin contact or by inhalation.	2272
–	T4	TP1	F-A, S-A	Category A	SG17 SG35	Brown liquid. Immiscible with water. Reacts with acids, evolving highly toxic fumes of aniline and oxides of nitrogen. Reacts violently with oxidizing substances. Toxic if swallowed, by skin contact or by inhalation.	2273
–	T4	TP1	F-A, S-A	Category A	–	Light yellow, oily liquid. Immiscible with water. Toxic if swallowed, by skin contact or by inhalation.	2274
–	T2	TP1	F-E, S-D	Category A	–	Colourless liquid. Flashpoint: 57°C o.c. Immiscible with water.	2275
–	T4	TP1	F-E, S-C	Category A SW2	–	Colourless liquid. Flashpoint: 50°C c.c. Miscible with water. Irritating to skin, eyes and mucous membranes.	2276
–	T4	TP1	F-E, S-D	Category C SW1	–	Colourless liquid with a pungent odour. Flashpoint: 20°C o.c. Explosive limits: 1.8% to . . . Immiscible with water. Irritating to skin, eyes and mucous membranes.	2277
–	T4	TP1	F-E, S-D	Category B	–	Colourless liquid. Flashpoint: –3°C c.c. Immiscible with water.	2278
–	T4	TP1	F-A, S-A	Category A	–	Colourless liquid. Immiscible with water. Toxic if swallowed, by skin contact or by inhalation.	2279
–	T4	TP1	F-A, S-B	Category A SW1 H2	–	White crystals or shiny flakes with a specific odour. Melting point: 29°C. Soluble in water; solution in water is a strong alkali. Decomposes when heated, evolving flammable and toxic gases. Causes burns to skin, eyes and mucous membranes.	2280

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						Limited quantities	Excepted quantities	Instructions	Provisions	Instructions	Provisions
(1)	(2) 3.1.2	(3) 2.0	(4) 2.0	(5) 2.0.1.3	(6) 3.3	(7a) 3.4	(7b) 3.5	(8) 4.1.4	(9) 4.1.4	(10) 4.1.4	(11) 4.1.4
2280	HEXAMETHYLENEDIAMINE, SOLID	8	–	III	–	5 kg	E1	P002 LP02	–	IBC08	B3
2281	HEXAMETHYLENE DIISOCYANATE	6.1	–	II	–	100 mL	E4	P001	–	IBC02	–
2282	HEXANOLS	3	–	III	–	5 L	E1	P001 LP01	–	IBC03	–
2283	ISOBUTYL METHACRYLATE, STABILIZED	3	–	III	386	5 L	E1	P001 LP01	–	IBC03	–
2284	ISOBUTYRONITRILE	3	6.1	II	–	1 L	E2	P001	–	IBC02	–
2285	ISOCYANATOBENZO-TRIFLUORIDES	6.1	3	II	–	100 mL	E4	P001	–	IBC02	–
2286	PENTAMETHYLHEPTANE	3	–	III	–	5 L	E1	P001 LP01	–	IBC03	–
2287	ISOHEPTENES	3	–	II	–	1 L	E2	P001	–	IBC02	–
2288	ISOHEXENES	3	–	II	–	1 L	E2	P001	–	IBC02	B8
2289	ISOPHORONEDIAMINE	8	–	III	–	5 L	E1	P001 LP01	–	IBC03	–
2290	ISOPHORONE DIISOCYANATE	6.1	–	III	–	5 L	E1	P001 LP01	–	IBC03	–
2291	LEAD COMPOUND, SOLUBLE, N.O.S.	6.1	– P	III	199 274	5 kg	E1	P002 LP02	–	IBC08	B3
2293	4-METHOXY-4-METHYL-PENTAN-2-ONE	3	–	III	–	5 L	E1	P001 LP01	–	IBC03	–
2294	N-METHYLANILINE	6.1	– P	III	–	5 L	E1	P001 LP01	–	IBC03	–
2295	METHYL CHLOROACETATE	6.1	3	I	–	0	E0	P001	–	–	–
2296	METHYLCYCLOHEXANE	3	– P	II	–	1 L	E2	P001	–	IBC02	–
2297	METHYLCYCLOHEXANONE	3	–	III	–	5 L	E1	P001 LP01	–	IBC03	–
2298	METHYLCYCLOPENTANE	3	–	II	–	1 L	E2	P001	–	IBC02	–
2299	METHYL DICHLOROACETATE	6.1	–	III	–	5 L	E1	P001 LP01	–	IBC03	–

UN No.	Portable tanks and bulk containers		EmS	Stowage and handling	Segregation	Properties and observations	UN No.
	Tank instructions	Provisions					
(12)	(13) 4.2.5 4.3	(14) 4.2.5	(15) 5.4.3.2 7.8	(16a) 7.1 7.3–7.7	(16b) 7.2–7.7	(17)	(18)
–	T1	TP33	F-A, S-B	Category A SW1 H2	–	White crystals or shiny flakes with a specific odour. Melting point: 29°C. Soluble in water; solution in water is a strong alkali. Decomposes when heated, evolving flammable and toxic gases. Causes burns to skin, eyes and mucous membranes.	2280
–	T7	TP2 TP13	F-A, S-A	Category C SW2 H1	–	Colourless to light yellow liquid with a pungent odour. Immiscible with water but reacts with it, evolving heat and carbon dioxide gas. When heated, evolves toxic nitrous fumes. Toxic if swallowed, by skin contact or by inhalation. Irritating to skin, eyes and mucous membranes.	2281
–	T2	TP1	F-E, S-D	Category A	–	Colourless liquids. <i>normal</i> -HEXANOL: flashpoint 57°C c.c. Miscible with water.	2282
–	T2	TP1	F-E, S-D	Category C SW1	–	Colourless liquid. Flashpoint: 49°C c.c. Immiscible with water. Irritating to skin, eyes and mucous membranes.	2283
–	T7	TP2 TP13	F-E, S-D	Category E SW2	–	Colourless liquid. Flashpoint: 8°C c.c. Immiscible with water. Toxic by skin contact or by inhalation.	2284
–	T7	TP2	F-E, S-D	Category D SW1 SW2	–	Colourless or yellowish liquids with a pungent odour. Flashpoint of <i>ortho</i> - and <i>meta</i> -isomers: 56°C. Immiscible with water, but reacts with it to form carbon dioxide gas. Toxic if swallowed, by skin contact or by inhalation. Irritating to skin, eyes and mucous membranes.	2285
–	T2	TP1	F-E, S-D	Category A	–	Colourless liquid. Flashpoint: 43°C c.c. Immiscible with water.	2286
–	T4	TP1	F-E, S-D	Category B	–	Colourless liquids. Immiscible with water.	2287
–	T11	TP1	F-E, S-D	Category E	–	Colourless liquids. Boiling range: 54°C to 69°C. Immiscible with water.	2288
–	T4	TP1	F-A, S-B	Category A	–	Colourless, slightly hygroscopic liquid with a slight amine odour. Combustible. Miscible with water. Harmful if swallowed. Irritating to skin, eyes and mucous membranes.	2289
–	T4	TP2	F-A, S-A	Category B SW2	–	Colourless or yellowish liquid. Immiscible with water. When involved in a fire, evolves nitrous fumes. Toxic if swallowed, by skin contact or by inhalation. Irritating to skin, eyes and mucous membranes.	2290
–	T1	TP33	F-A, S-A	Category A	–	Colourless crystals or powder. Soluble in water. Toxic if swallowed, by skin contact or by dust inhalation.	2291
–	T2	TP1	F-E, S-D	Category A	–	Colourless liquid. Flashpoint: 49°C c.c. Immiscible with water.	2293
–	T4	TP2	F-A, S-A	Category A	–	Colourless to brown combustible liquid. Toxic if swallowed, by skin contact or by inhalation.	2294
–	T14	TP2 TP13	F-E, S-D	Category D	–	Colourless, flammable liquid with a pungent odour. Flashpoint: 47°C c.c. Vapour much heavier than air (vapour density relative to air: 3.8). Immiscible with water. Highly toxic if swallowed, by skin contact or by inhalation.	2295
–	T4	TP2	F-E, S-D	Category B	–	Colourless liquid. Flashpoint: –4°C c.c. Explosive limits: 1.2% to 6.7%. Immiscible with water. Irritating to skin, eyes and mucous membranes.	2296
–	T2	TP1	F-E, S-D	Category A	–	Colourless to pale yellow liquids with a sweet odour. 2-METHYLCYCLOHEXANONE: flashpoint 46°C c.c. 3-METHYLCYCLOHEXANONE: flashpoint 51°C c.c. 4-METHYLCYCLOHEXANONE: flashpoint 40°C c.c. Immiscible with water.	2297
–	T4	TP1	F-E, S-D	Category B	–	Colourless liquid. Flashpoint: below –10°C c.c. Explosive limits: 1% to 8.4%. Immiscible with water. Irritating to skin, eyes and mucous membranes.	2298
–	T4	TP1	F-A, S-A	Category A	–	Liquid. Toxic if swallowed, by skin contact or by inhalation.	2299

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						Limited quantities	Excepted quantities	Instructions	Provisions	Instructions	Provisions
(1)	(2) 3.1.2	(3) 2.0	(4) 2.0	(5) 2.0.1.3	(6) 3.3	(7a) 3.4	(7b) 3.5	(8) 4.1.4	(9) 4.1.4	(10) 4.1.4	(11) 4.1.4
2300	2-METHYL-5-ETHYLPYRIDINE	6.1	–	III	–	5 L	E1	P001 LP01	–	IBC03	–
2301	2-METHYLFURAN	3	–	II	–	1 L	E2	P001	–	IBC02	–
2302	5-METHYLHEXAN-2-ONE	3	–	III	–	5 L	E1	P001 LP01	–	IBC03	–
2303	ISOPROPENYLBENZENE	3	–	III	–	5 L	E1	P001 LP01	–	IBC03	–
2304	NAPHTHALENE, MOLTEN	4.1	– P	III	–	0	E0	–	–	–	–
2305	NITROBENZENESULPHONIC ACID	8	–	II	–	1 kg	E2	P002	–	IBC08	B4 B21
2306	NITROBENZOTRIFLUORIDES, LIQUID	6.1	– P	II	–	100 mL	E4	P001	–	IBC02	–
2307	3-NITRO-4-CHLORO-BENZOTRIFLUORIDE	6.1	– P	II	–	100 mL	E4	P001	–	IBC02	–
2308	NITROSYLSULPHURIC ACID, LIQUID	8	–	II	–	1 L	E2	P001	–	IBC02	B20
2309	OCTADIENE	3	–	II	–	1 L	E2	P001	–	IBC02	–
2310	PENTANE-2,4-DIONE	3	6.1	III	–	5 L	E1	P001	–	IBC03	–
2311	PHENETIDINES	6.1	–	III	279	5 L	E1	P001 LP01	–	IBC03	–
2312	PHENOL, MOLTEN	6.1	–	II	–	0	E0	–	–	–	–
2313	PICOLINES	3	–	III	–	5 L	E1	P001 LP01	–	IBC03	–
2315	POLYCHLORINATED BIPHENYLS, LIQUID	9	– P	II	305	1 L	E2	P906	–	IBC02	–
2316	SODIUM CUPROCYANIDE, SOLID	6.1	– P	I	–	0	E5	P002	–	IBC07	B1
2317	SODIUM CUPROCYANIDE SOLUTION	6.1	– P	I	–	0	E5	P001	–	–	–

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	Tank instructions	Provisions					
(12)	(13) 4.2.5 4.3	(14) 4.2.5	(15) 5.4.3.2 7.8	(16a) 7.1 7.3–7.7	(16b) 7.2–7.7	(17)	(18)
–	T4	TP1	F-A, S-A	Category A	–	Colourless liquid with a pungent odour. Toxic if swallowed, by skin contact or by inhalation.	2300
–	T4	TP1	F-E, S-D	Category E	–	Colourless liquid with a sweetish odour. Flashpoint: –30°C c.c. Immiscible with water. When involved in a fire, evolves toxic gases. Harmful if swallowed or by inhalation. Irritating to skin, eyes and mucous membranes.	2301
–	T2	TP1	F-E, S-D	Category A	–	Colourless liquid. Flashpoint: 43°C c.c. Immiscible with water.	2302
–	T2	TP1	F-E, S-D	Category A	–	Colourless liquid. Flashpoint: 38°C to 54°C c.c. Explosive limits: 0.7% to 6.6%. Immiscible with water. Irritating to skin, eyes and mucous membranes.	2303
–	T1	TP3	F-A, S-H	Category C	–	Molten liquid with a persistent odour. Melting point: 80°C. Evolves flammable vapours. As the melting point of naphthalene approximates very closely its flashpoint, care should be taken to avoid all possible causes of ignition. Contact between water and molten naphthalene above 110°C must be avoided, as the addition of water will cause violent foaming or even an explosion.	2304
–	T3	TP33	F-A, S-B	Category A	–	Crystals. Soluble in water. Causes burns to skin, eyes and mucous membranes.	2305
–	T7	TP2	F-A, S-A	Category A SW2	–	Pale straw-coloured, oily liquids with an aromatic odour. Immiscible with water. Toxic if swallowed, by skin contact or by inhalation.	2306
–	T7	TP2	F-A, S-A	Category A SW2	–	Yellowish, oily liquid. Immiscible with water. Toxic if swallowed, by skin contact or by inhalation.	2307
–	T8	TP2	F-A, S-B	Category D SW2	SG6 SG16 SG17 SG19	Clear, straw-coloured, oily liquid. Oxidant which may cause fire with organic materials (such as wood, straw, etc.). When involved in a fire, evolves toxic gases. In the presence of moisture, highly corrosive to most metals. Causes burns to skin, eyes and mucous membranes.	2308
–	T4	TP1	F-E, S-D	Category B	–	Colourless liquid. Flashpoint: 9°C to 15°C c.c. Immiscible with water.	2309
–	T4	TP1	F-E, S-D	Category A	–	Colourless liquid. Flashpoint: 34°C c.c. Explosive limits: 1.7% to ... Miscible with water. Toxic if swallowed, by skin contact or by inhalation.	2310
–	T4	TP1	F-A, S-A	Category A	–	Colourless to yellowish liquids. Immiscible with water. Toxic if swallowed, by skin contact or by inhalation.	2311
–	T7	TP3	F-A, S-A	Category B SW2	–	Molten liquid with a distinctive strong odour. Melting point: 10°C to 43°C (pure product). Toxic if swallowed, by skin contact or by inhalation. Rapidly absorbed through the skin.	2312
–	T4	TP1	F-E, S-D	Category A SW2	–	Colourless to yellow liquids with a pungent or sweet odour. Explosive limits: 1.3% to 8.7%. Miscible with water. Harmful by inhalation. <i>alpha</i> -Picoline flashpoint: 28°C c.c. <i>beta</i> -Picoline flashpoint: 40°C c.c. <i>gamma</i> -Picoline flashpoint 40°C c.c. Irritating to skin, eyes and mucous membranes.	2313
–	T4	TP1	F-A, S-A	Category A	SG50	Colourless liquid (pure product) with perceptible odours. Immiscible with water. Harmful by ingestion or by skin contact. If spilled, can be a persistent hazard to the environment. This entry also covers articles, such as transformers and condensers, containing free liquid polychlorinated biphenyls.	2315
–	T6	TP33	F-A, S-A	Category A	SG35	White powder. Soluble in water. Reacts with acids or acid fumes, evolving hydrogen cyanide, a highly toxic and flammable gas. Highly toxic if swallowed, by skin contact or by dust inhalation.	2316
–	T14	TP2 TP13	F-A, S-A	Category B SW2	SG35	Colourless liquid. Miscible with water. Decomposed by acids, evolving hydrogen cyanide, a highly toxic and flammable gas. Highly toxic if swallowed, by skin contact or by inhalation.	2317

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						Limited quantities	Excepted quantities	Instructions	Provisions	Instructions	Provisions
(1)	(2) 3.1.2	(3) 2.0	(4) 2.0	(5) 2.0.1.3	(6) 3.3	(7a) 3.4	(7b) 3.5	(8) 4.1.4	(9) 4.1.4	(10) 4.1.4	(11) 4.1.4
2318	SODIUM HYDROSULPHIDE with less than 25% water of crystallization	4.2	–	II	–	0	E2	P410	PP31	IBC06	B21
2319	TERPENE HYDROCARBONS, N.O.S.	3	–	III	–	5 L	E1	P001 LP01	–	IBC03	–
2320	TETRAETHYLENEPENTAMINE	8	–	III	–	5 L	E1	P001 LP01	–	IBC03	–
2321	TRICHLOROBENZENES, LIQUID	6.1	– P	III	–	5 L	E1	P001 LP01	–	IBC03	–
2322	TRICHLOROBUTENE	6.1	– P	II	–	100 mL	E4	P001	–	IBC02	–
2323	TRIETHYL PHOSPHITE	3	–	III	–	5 L	E1	P001 LP01	–	IBC03	–
2324	TRISOBUTYLENE	3	–	III	–	5 L	E1	P001 LP01	–	IBC03	–
2325	1,3,5-TRIMETHYLBENZENE	3	– P	III	–	5 L	E1	P001 LP01	–	IBC03	–
2326	TRIMETHYLCYCLOHEXYLAMINE	8	–	III	–	5 L	E1	P001 LP01	–	IBC03	–
2327	TRIMETHYLHEXAMETHYLENE-DIAMINES	8	–	III	–	5 L	E1	P001 LP01	–	IBC03	–
2328	TRIMETHYLHEXAMETHYLENE DIISOCYANATE	6.1	–	III	–	5 L	E1	P001 LP01	–	IBC03	–
2329	TRIMETHYL PHOSPHITE	3	–	III	–	5 L	E1	P001 LP01	–	IBC03	–
2330	UNDECANE	3	–	III	–	5 L	E1	P001 LP01	–	IBC03	–
2331	ZINC CHLORIDE, ANHYDROUS	8	– P	III	–	5 kg	E1	P002 LP02	–	IBC08	B3
2332	ACETALDEHYDE OXIME	3	–	III	–	5 L	E1	P001 LP01	–	IBC03	–
2333	ALLYL ACETATE	3	6.1	II	–	1 L	E2	P001	–	IBC02	–
2334	ALLYLAMINE	6.1	3	I	354	0	E0	P602	–	–	–
2335	ALLYL ETHYL ETHER	3	6.1	II	–	1 L	E2	P001	–	IBC02	–
2336	ALLYL FORMATE	3	6.1	I	–	0	E0	P001	–	–	–
2337	PHENYL MERCAPTAN	6.1	3	I	354	0	E0	P602	–	–	–

UN No.	Portable tanks and bulk containers		EmS	Stowage and handling	Segregation	Properties and observations	UN No.
	Tank instructions	Provisions					
(12)	(13) 4.2.5 4.3	(14) 4.2.5	(15) 5.4.3.2 7.8	(16a) 7.1 7.3–7.7	(16b) 7.2–7.7	(17)	(18)
–	T3	TP33	F-A, S-J	Category A	SG35	Colourless needles to lemon-coloured flakes. Soluble in water. Reacts violently with acids.	2318
–	T4	TP1 TP29	F-E, S-D	Category A	–	Colourless or yellowish liquids. Flashpoint: 32°C to 49°C c.c. Immiscible with water.	2319
–	T4	TP1	F-A, S-B	Category A	SG35	Viscous liquid. Miscible with water. When involved in a fire, evolves toxic gases. Causes burns to skin, eyes and mucous membranes. Reacts violently with acids.	2320
–	T4	TP1	F-A, S-A	Category A	–	Colourless liquids. Immiscible with water. Toxic if swallowed, by skin contact or by inhalation.	2321
–	T7	TP2	F-A, S-A	Category A SW1 SW2	–	Colourless liquid. Immiscible with water. When heated, develops toxic and irritant gases such as phosgene and hydrogen chloride and may also explode. Toxic if swallowed, by skin contact or by inhalation.	2322
–	T2	TP1	F-E, S-D	Category A	–	Colourless liquid. Flashpoint: 44°C c.c. Immiscible with water. Irritating to skin, eyes and mucous membranes.	2323
–	T4	TP1	F-E, S-D	Category A	–	Colourless liquid. Immiscible with water.	2324
–	T2	TP2	F-E, S-D	Category A	–	Colourless liquid. Flashpoint: 44°C c.c. Immiscible with water. Harmful by inhalation.	2325
–	T4	TP1	F-A, S-B	Category A	–	Colourless, slightly hygroscopic, combustible liquid with a slight amine odour. Immiscible with water. Causes burns to skin, eyes and mucous membranes.	2326
–	T4	TP1	F-A, S-B	Category A	–	Colourless, slightly hygroscopic, combustible liquids. Miscible with water. Irritating to skin, eyes and mucous membranes.	2327
–	T4	TP2 TP13	F-A, S-A	Category B	–	Colourless or yellowish liquid. Reacts with water, evolving carbon dioxide. Toxic if swallowed, by skin contact or by inhalation. Irritating to skin, eyes and mucous membranes.	2328
–	T2	TP1	F-E, S-D	Category A	–	Colourless liquid. Flashpoint: 23°C c.c. Immiscible with water. Irritating to skin, eyes and mucous membranes.	2329
–	T2	TP1	F-E, S-E	Category A	–	Colourless liquid. Flashpoint: 60°C c.c. Immiscible with water.	2330
–	T1	TP33	F-A, S-B	Category A	–	White, deliquescent crystals. Soluble in water. Dust causes burns to skin, eyes and mucous membranes.	2331
–	T4	TP1	F-E, S-D	Category A	–	Colourless liquid. Flashpoint: 40°C c.c. Explosive limits: 4.2% to 52%. Freezing point 12°C. Miscible with water. Irritating to skin, eyes and mucous membranes.	2332
–	T7	TP1 TP13	F-E, S-D	Category E SW2	–	Colourless liquid. Flashpoint: 7°C c.c. Partially miscible with water. Toxic if swallowed, by skin contact or by inhalation. Harmful if swallowed.	2333
–	T20	TP2 TP13 TP35	F-E, S-D	Category D SW2	–	Colourless to light yellow volatile liquid with a pungent odour. Flashpoint: –29°C c.c. Explosive limits: 2.2% to 22%. Boiling range: 55°C to 58°C. Miscible with water. When involved in a fire, evolves highly toxic gases. Highly toxic if swallowed, by skin contact or by inhalation.	2334
–	T7	TP1 TP13	F-E, S-D	Category E SW2	–	Colourless liquid. Flashpoint: –11°C c.c. Vapour heavier than air. Immiscible with water. Narcotic. Toxic if swallowed, by skin contact or by inhalation.	2335
–	T14	TP2 TP13	F-E, S-D	Category E SW2	–	Colourless liquid. Immiscible with water. Highly toxic if swallowed, by skin contact or by inhalation.	2336
–	T20	TP2 TP13 TP35	F-E, S-D	Category D SW2	SG35	Colourless flammable liquid with a foul odour. Flashpoint: 50°C c.c. Immiscible with water. In contact with acids or when involved in a fire, evolves highly toxic sulphurous fumes. Highly toxic if swallowed, by skin contact or by inhalation.	2337

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						Limited quantities	Excepted quantities	Instructions	Provisions	Instructions	Provisions
(1)	(2) 3.1.2	(3) 2.0	(4) 2.0	(5) 2.0.1.3	(6) 3.3	(7a) 3.4	(7b) 3.5	(8) 4.1.4	(9) 4.1.4	(10) 4.1.4	(11) 4.1.4
2338	BENZOTRIFLUORIDE	3	–	II	–	1 L	E2	P001	–	IBC02	–
2339	2-BROMOBUTANE	3	–	II	–	1 L	E2	P001	–	IBC02	–
2340	2-BROMOETHYL ETHYL ETHER	3	–	II	–	1 L	E2	P001	–	IBC02	–
2341	1-BROMO-3-METHYLBUTANE	3	–	III	–	5 L	E1	P001 LP01	–	IBC03	–
2342	BROMOMETHYLPROPANES	3	–	II	–	1 L	E2	P001	–	IBC02	–
2343	2-BROMOPENTANE	3	–	II	–	1 L	E2	P001	–	IBC02	–
2344	BROMOPROPANES	3	–	II	–	1 L	E2	P001	–	IBC02	–
2344	BROMOPROPANES	3	–	III	223	5 L	E1	P001 LP01	–	IBC03	–
2345	3-BROMOPROPYNE	3	–	II	905	1 L	E2	P001	–	IBC02	–
2346	BUTANEDIONE	3	–	II	–	1 L	E2	P001	–	IBC02	–
2347	BUTYL MERCAPTAN	3	–	II	–	1 L	E2	P001	–	IBC02	–
2348	BUTYL ACRYLATES, STABILIZED	3	–	III	386	5 L	E1	P001 LP01	–	IBC03	–
2350	BUTYL METHYL ETHER	3	–	II	–	1 L	E2	P001	–	IBC02	–
2351	BUTYL NITRITES	3	–	II	–	1 L	E2	P001	–	IBC02	–
2351	BUTYL NITRITES	3	–	III	223	5 L	E1	P001 LP01	–	IBC03	–
2352	BUTYL VINYL ETHER, STABILIZED	3	–	II	386	1 L	E2	P001	–	IBC02	–
2353	BUTYRYL CHLORIDE	3	8	II	–	1 L	E2	P001	–	IBC02	B20
2354	CHLOROMETHYL ETHYL ETHER	3	6.1	II	–	1 L	E2	P001	–	IBC02	–

UN No.	Portable tanks and bulk containers		EmS	Stowage and handling	Segregation	Properties and observations	UN No.
	Tank instructions	Provisions					
(12)	(13) 4.2.5 4.3	(14) 4.2.5	(15) 5.4.3.2 7.8	(16a) 7.1 7.3–7.7	(16b) 7.2–7.7	(17)	(18)
–	T4	TP1	F-E, S-D	Category B SW2	–	Colourless liquid with an aromatic odour. Flashpoint: 12°C c.c. Explosive limits: 2.1% to . . . Immiscible with water. On contact with moisture or air evolves hydrogen fluoride, which is a toxic and corrosive gas. Harmful by inhalation. Irritating to skin, eyes and mucous membranes.	2338
–	T4	TP1	F-E, S-D	Category B SW2	–	Colourless liquid with a pleasant odour. Flashpoint: 21°C c.c. Immiscible with water. When involved in a fire, evolves toxic fumes. Narcotic.	2339
–	T4	TP1	F-E, S-D	Category B SW2	–	Colourless liquid with an ethereal odour. Partially miscible with water. Harmful by inhalation.	2340
–	T2	TP1	F-E, S-D	Category A	–	Colourless liquid. Flashpoint: 23°C to 32°C c.c. Immiscible with water.	2341
–	T4	TP1	F-E, S-D	Category B	–	Colourless liquids. Immiscible with water. Harmful by inhalation.	2342
–	T4	TP1	F-E, S-D	Category B	–	Colourless or yellow liquid with a strong odour. Flashpoint: 21°C c.c. Immiscible with water. Harmful by inhalation.	2343
–	T4	TP1	F-E, S-D	Category B SW2	–	Colourless liquids. Immiscible with water. When involved in a fire, evolve toxic fumes. Harmful by inhalation.	2344
–	T2	TP1	F-E, S-D	Category A	–	See entry above.	2344
–	T4	TP1	F-E, S-D	Category D SW2	–	Colourless to light amber liquid with a sharp odour. Flashpoint: 10°C c.c. Explosive limits: 3% to . . . Vapour much heavier than air (4.1). The pure product is shock-sensitive and decomposes with explosive violence, and the possibility of detonation, when heated under confinement. Can be ignited by impact. Immiscible with water. Harmful by inhalation. Irritating to skin, eyes and mucous membranes. Causes tears.	2345
–	T4	TP1	F-E, S-D	Category B	–	Greenish-yellow liquid with a strong odour. Flashpoint: 6°C c.c. Miscible with water.	2346
–	T4	TP1	F-E, S-D	Category B	SG35 SG50 SG57	Colourless liquids with a foul odour. <i>tertiary</i> -BUTYL MERCAPTAN: flashpoint –26°C c.c. <i>secondary</i> -BUTYL MERCAPTAN: flashpoint –23°C c.c. 1-BUTANETHIOL (<i>normal</i> -BUTYL MERCAPTAN): flashpoint 12°C c.c. ISOBUTYL MERCAPTAN: flashpoint –9°C c.c. Immiscible with water. On contact with acids, emit highly toxic fumes.	2347
–	T2	TP1	F-E, S-D	Category C SW1	–	Colourless liquid with an unpleasant odour. Flashpoint: 36°C to 41°C c.c. Explosive limits: 1.2% to 9.9%. Immiscible with water. Harmful by inhalation. Irritating to skin, eyes and mucous membranes.	2348
–	T4	TP1	F-E, S-D	Category B	–	Colourless liquid. Immiscible with water.	2350
–	T4	TP1	F-E, S-D	Category B SW2	–	Yellowish, volatile, oily liquids. Partially miscible with water. Decompose on exposure to air, light, water or heat, evolving toxic nitrous fumes. Harmful by inhalation.	2351
–	T2	TP1	F-E, S-D	Category A SW2	–	See entry above.	2351
–	T4	TP1	F-E, S-D	Category C SW1 SW2	–	Colourless, volatile liquid with a sharp ethereal odour. Flashpoint: –9°C c.c. Immiscible with water. Harmful by inhalation. Irritating to skin, eyes and mucous membranes.	2352
–	T8	TP2 TP13	F-E, S-C	Category C SW2	–	Colourless liquid with a pungent odour. Reacts with water, evolving hydrogen chloride, an irritating and corrosive gas apparent as white fumes. In the presence of moisture, highly corrosive to most metals. Causes burns to skin, eyes and mucous membranes.	2353
–	T7	TP1 TP13	F-E, S-D	Category E SW2	–	Colourless liquid with a pungent odour. Partially miscible with water. Fumes in air, evolving hydrogen chloride, which is an irritating and corrosive gas. Toxic by inhalation. Strong lachrymator.	2354

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UN No.	Proper shipping name (PSN)	Class or division	Subsidiary risk(s)	Packing group	Special provisions	Limited and excepted quantity provisions		Packing		IBC	
						Limited quantities	Excepted quantities	Instructions	Provisions	Instructions	Provisions
(1)	(2) 3.1.2	(3) 2.0	(4) 2.0	(5) 2.0.1.3	(6) 3.3	(7a) 3.4	(7b) 3.5	(8) 4.1.4	(9) 4.1.4	(10) 4.1.4	(11) 4.1.4
2356	2-CHLOROPROPANE	3	–	I	–	0	E3	P001	–	–	–
2357	CYCLOHEXYLAMINE	8	3	II	–	1 L	E2	P001	–	IBC02	–
2358	CYCLOOCTATETRAENE	3	–	II	–	1 L	E2	P001	–	IBC02	–
2359	DIALLYLAMINE	3	6.1/8	II	–	1 L	E2	P001	–	IBC99	–
2360	DIALLYL ETHER	3	6.1	II	–	1 L	E2	P001	–	IBC02	–
2361	DIISOBUTYLAMINE	3	8	III	–	5 L	E1	P001	–	IBC03	–
2362	1,1-DICHLOROETHANE	3	–	II	–	1 L	E2	P001	–	IBC02	–
2363	ETHYL MERCAPTAN	3	– P	I	–	0	E0	P001	–	–	–
2364	n-PROPYLBENZENE	3	–	III	–	5 L	E1	P001 LP01	–	IBC03	–
2366	DIETHYL CARBONATE	3	–	III	–	5 L	E1	P001 LP01	–	IBC03	–
2367	alpha-METHYL-VALERALDEHYDE	3	–	II	–	1 L	E2	P001	–	IBC02	–
2368	alpha-PINENE	3	– P	III	–	5 L	E1	P001 LP01	–	IBC03	–
2370	1-HEXENE	3	–	II	–	1 L	E2	P001	–	IBC02	–
2371	ISOPENTENES	3	–	I	–	0	E3	P001	–	–	–
2372	1,2-DI(DIMETHYLAMINO)ETHANE	3	–	II	–	1 L	E2	P001	–	IBC02	–
2373	DIETHOXYMETHANE	3	–	II	–	1 L	E2	P001	–	IBC02	–
2374	3,3-DIETHOXYPROPENE	3	–	II	–	1 L	E2	P001	–	IBC02	–
2375	DIETHYL SULPHIDE	3	–	II	–	1 L	E2	P001	–	IBC02	–
2376	2,3-DIHYDROPYRAN	3	–	II	–	1 L	E2	P001	–	IBC02	–
2377	1,1-DIMETHOXYETHANE	3	–	II	–	1 L	E2	P001	–	IBC02	–
2378	2-DIMETHYLAMINO-ACETONITRILE	3	6.1	II	–	1 L	E2	P001	–	IBC02	–

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	Tank instructions	Provisions					
(12)	(13) 4.2.5 4.3	(14) 4.2.5	(15) 5.4.3.2 7.8	(16a) 7.1 7.3–7.7	(16b) 7.2–7.7	(17)	(18)
–	T11	TP2 TP13	F-E, S-D	Category E	–	Colourless liquid. Flashpoint: –32°C c.c. Explosive limits: 2.8% to 10.7%. Boiling point: 35°C. Immiscible with water. On contact with heat or flame, emits highly toxic phosgene gas. Can react vigorously with oxidizing materials.	2356
–	T7	TP2	F-E, S-C	Category A SW2	–	Colourless or yellowish flammable liquid with a fishy odour. Flashpoint: 27°C c.c. Explosive limits: 0.5% to 21.7%. Miscible with water. Harmful by inhalation. Causes burns to skin and eyes. Irritating to mucous membranes.	2357
–	T4	TP1	F-E, S-D	Category B	–	Colourless liquid. Freezing point: –4°C. Immiscible with water.	2358
–	T7	TP1	F-E, S-C	Category B SW2	SG5 SG8	Colourless, volatile liquid with a disagreeable odour. Flashpoint: 7°C c.c. Partially miscible with water. Toxic if swallowed, by skin contact or by inhalation. Causes burns to skin, eyes and mucous membranes.	2359
–	T7	TP1 TP13	F-E, S-D	Category E	–	Colourless, volatile liquid with a perceptible odour. Flashpoint: –11°C c.c. Immiscible with water. Toxic if swallowed, by skin contact or by inhalation.	2360
–	T4	TP1	F-E, S-C	Category A	–	Colourless liquid with a fishy odour. Flashpoint: 29°C c.c. Immiscible with water. Harmful by inhalation. Causes burns to skin and eyes. Irritating to mucous membranes.	2361
–	T4	TP1	F-E, S-D	Category B SW2	–	Colourless liquid with an aromatic, ethereal odour. Flashpoint: –10°C c.c. Explosive limits: 5.6% to ... Immiscible with water. When involved in a fire, emits toxic fumes of phosgene. Harmful by inhalation.	2362
–	T11	TP2 TP13	F-E, S-D	Category E	SG50 SG57	Volatile liquid with a strong unpleasant odour. Flashpoint: –45°C c.c. Explosive limits: 2.8% to 18.2%. Boiling point: 35°C. Immiscible with water.	2363
–	T2	TP1	F-E, S-D	Category A	–	Colourless liquid. Flashpoint: 39°C c.c. Explosive limits: 0.8% to 6%. Immiscible with water.	2364
–	T2	TP1	F-E, S-D	Category A	–	Colourless liquid. Flashpoint: 25°C to 31°C c.c. Vapour much heavier than air (4.1). Immiscible with water. Irritating to skin, eyes and mucous membranes.	2366
–	T4	TP1	F-E, S-D	Category B	–	Colourless liquid. Flashpoint: 13°C c.c. Immiscible with water. Irritating to skin, eyes and mucous membranes.	2367
–	T2	TP2	F-E, S-E	Category A	–	Colourless liquid with an odour of turpentine. Flashpoint: 33°C c.c. Explosive limits: 0.8% to 6%. Immiscible with water. Harmful by inhalation. Irritating to skin, eyes and mucous membranes.	2368
–	T4	TP1	F-E, S-D	Category E	–	Colourless liquid. Explosive limits: 1.2% to 6.9%. Immiscible with water.	2370
–	T11	TP2	F-E, S-D	Category E	–	Colourless, volatile liquid with a disagreeable odour. Flashpoint: below –18°C c.c. Immiscible with water. Irritating to skin, eyes and mucous membranes.	2371
–	T4	TP1	F-E, S-D	Category B	–	Colourless liquid. Flashpoint: 21°C c.c. Miscible with water. Irritability to skin, eyes and mucous membranes.	2372
–	T4	TP1	F-E, S-D	Category B	–	Colourless liquid. Flashpoint: below –5°C c.c. Miscible with water.	2373
–	T4	TP1	F-E, S-D	Category B	–	Colourless liquid. Flashpoint: 15°C c.c. Partially miscible with water. Harmful by inhalation.	2374
–	T7	TP1 TP13	F-E, S-D	Category E	–	Colourless, volatile liquid with an odour of garlic. Flashpoint: –10°C c.c. Immiscible with water.	2375
–	T4	TP1	F-E, S-D	Category B	–	Colourless, volatile liquid with an ethereal odour. Flashpoint: –16°C c.c. Miscible with water.	2376
–	T7	TP1	F-E, S-D	Category B	–	Colourless liquid with a strong aromatic odour. Miscible with water.	2377
–	T7	TP1	F-E, S-D	Category A SW2	SG35	Colourless liquid. Flashpoint: 35°C c.c. Immiscible with water. On contact with water and acids, evolves toxic fumes. Toxic if swallowed, by skin contact or by inhalation.	2378

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						Limited quantities	Excepted quantities	Instructions	Provisions	Instructions	Provisions
(1)	(2) 3.1.2	(3) 2.0	(4) 2.0	(5) 2.0.1.3	(6) 3.3	(7a) 3.4	(7b) 3.5	(8) 4.1.4	(9) 4.1.4	(10) 4.1.4	(11) 4.1.4
2379	1,3-DIMETHYLBUTYLAMINE	3	8	II	-	1 L	E2	P001	-	IBC02	-
2380	DIMETHYLDIETHOXSILANE	3	-	II	-	1 L	E2	P001	-	IBC02	-
2381	DIMETHYL DISULPHIDE	3	6.1 P	II	-	1 L	E0	P001	-	IBC02	-
2382	DIMETHYLHYDRAZINE, SYMMETRICAL	6.1	3 P	I	354	0	E0	P602	-	-	-
2383	DIPROPYLAMINE	3	8	II	386	1 L	E2	P001	-	IBC02	-
2384	DI- <i>n</i> -PROPYL ETHER	3	-	II	-	1 L	E2	P001	-	IBC02	-
2385	ETHYL ISOBUTYRATE	3	-	II	-	1 L	E2	P001	-	IBC02	-
2386	1-ETHYLPYRIDINE	3	8	II	-	1 L	E2	P001	-	IBC02	-
2387	FLUOROBENZENE	3	-	II	-	1 L	E2	P001	-	IBC02	-
2388	FLUOROTOLUENES	3	-	II	-	1 L	E2	P001	-	IBC02	-
2389	FURAN	3	-	I	-	0	E3	P001	-	-	-
2390	2-iodobutane	3	-	II	-	1 L	E2	P001	-	IBC02	-
2391	iodomethylpropanes	3	-	II	-	1 L	E2	P001	-	IBC02	-
2392	iodopropanes	3	-	III	-	5 L	E1	P001 LP01	-	IBC03	-
2393	isobutyl formate	3	-	II	-	1 L	E2	P001	-	IBC02	-
2394	isobutyl propionate	3	-	III	-	5 L	E1	P001 LP01	-	IBC03	-
2395	isobutyryl chloride	3	8	II	-	1 L	E2	P001	-	IBC02	-
2396	METHACRYLALDEHYDE, STABILIZED	3	6.1	II	386	1 L	E2	P001	-	IBC02	-
2397	3-METHYLBUTAN-2-ONE	3	-	II	-	1 L	E2	P001	-	IBC02	-

UN No.	Portable tanks and bulk containers		EmS	Stowage and handling	Segregation	Properties and observations	UN No.
	Tank instructions	Provisions					
(12)	(13) 4.2.5 4.3	(14) 4.2.5	(15) 5.4.3.2 7.8	(16a) 7.1 7.3-7.7	(16b) 7.2-7.7	(17)	(18)
-	T7	TP1	F-E, S-C	Category B	SG35	Colourless liquid with an ammonia-like odour. Flashpoint: 9°C to 13°C c.c. Immiscible with water. Reacts violently with acids. Harmful by inhalation. Causes burns to skin and eyes. Irritating to mucous membranes.	2379
-	T4	TP1	F-E, S-D	Category B	-	Colourless liquid. Flashpoint: 13°C c.c. Miscible with water. Irritating to skin, eyes and mucous membranes.	2380
-	T7	TP2 TP13 TP39	F-E, S-D	Category B SW2	-	Yellow liquid with an unpleasant odour. Flashpoint: 15°C c.c. Immiscible with water. When involved in a fire, evolves toxic gases. Toxic if swallowed, by skin contact or by inhalation.	2381
-	T20	TP2 TP13 TP37	F-E, S-D	Category D SW2	SG17 SG35	Colourless, flammable, volatile liquid with an ammonia-like odour. Miscible with water. Reacts violently with acids. May react dangerously with oxidizing substances. Flashpoint: -17°C c.c. Highly toxic if swallowed, by skin contact or by inhalation.	2382
-	T7	TP1	F-E, S-C	Category B	-	Colourless liquid with a fishy odour. Flashpoint: 7°C c.c. Immiscible with water. Harmful by inhalation. Causes burns to skin, eyes and mucous membranes.	2383
-	T4	TP1	F-E, S-D	Category B	-	Colourless liquid. Flashpoint (pure product): -21°C c.c. Explosive limits: 1.7% to ... Immiscible with water.	2384
-	T4	TP1	F-E, S-D	Category B	-	Colourless, volatile liquid with an aromatic odour. Flashpoint: 21°C c.c. Immiscible with water.	2385
-	T7	TP1	F-E, S-C	Category B	SG35	Colourless liquid. Flashpoint: 19°C c.c. Immiscible with water. Reacts violently with acids. Harmful by inhalation. Causes burns to skin, eyes and mucous membranes. May cause lung damage.	2386
-	T4	TP1	F-E, S-D	Category B	-	Colourless liquid with a benzene odour. Flashpoint: -15°C c.c. Immiscible with water. Harmful by inhalation.	2387
-	T4	TP1	F-E, S-D	Category B	-	Colourless liquids. <i>ortho</i> -FLUOROTOLUENE: flashpoint 9°C c.c. <i>meta</i> -FLUOROTOLUENE: flashpoint 12°C c.c. <i>para</i> -FLUOROTOLUENE: flashpoint 10°C c.c. Immiscible with water.	2388
-	T12	TP2 TP13	F-E, S-D	Category E SW2	-	Colourless liquid with a strong odour. Flashpoint: below -18°C c.c. Explosive limits: 1.3% to 14.3%. Boiling point: 31°C. Immiscible with water. Harmful if swallowed, by skin contact or by inhalation.	2389
-	T4	TP1	F-E, S-D	Category B	-	Colourless liquid. Flashpoint: 21°C c.c. Immiscible with water.	2390
-	T4	TP1	F-E, S-D	Category B	-	Colourless liquids. Immiscible with water.	2391
-	T2	TP1	F-E, S-D	Category A	-	Colourless liquids. 1-iodopropane: flashpoint 34°C c.c. 2-iodopropane: flashpoint approx. 25°C c.c. Immiscible with water.	2392
-	T4	TP1	F-E, S-D	Category B	-	Colourless liquid. Flashpoint: 5°C c.c. Explosive limits: 1.7% to 8%. Irritating to skin, eyes and mucous membranes.	2393
-	T2	TP1	F-E, S-D	Category B	-	Colourless liquid. Flashpoint: 31°C c.c. Immiscible with water.	2394
-	T7	TP2	F-E, S-C	Category C SW2	-	Colourless liquid with a pungent odour. Reacts with water, evolving hydrogen chloride, an irritating and corrosive gas apparent as white fumes. In the presence of moisture, highly corrosive to most metals. Causes burns to skin, eyes and mucous membranes.	2395
-	T7	TP1 TP13	F-E, S-D	Category D SW1 SW2	-	Colourless liquid. Flashpoint: 2°C c.c. Miscible with water. Toxic by inhalation. Irritating to skin, eyes and mucous membranes.	2396
-	T4	TP1	F-E, S-D	Category B	-	Colourless liquid. Flashpoint: -3°C c.c. Explosive limits: 1.5% to 8%. Immiscible with water.	2397

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						Limited quantities	Excepted quantities	Instructions	Provisions	Instructions	Provisions
(1)	(2) 3.1.2	(3) 2.0	(4) 2.0	(5) 2.0.1.3	(6) 3.3	(7a) 3.4	(7b) 3.5	(8) 4.1.4	(9) 4.1.4	(10) 4.1.4	(11) 4.1.4
2398	METHYL <i>tert</i> -BUTYL ETHER	3	–	II	–	1 L	E2	P001	–	IBC02	–
2399	1-METHYLPIPERIDINE	3	8	II	–	1 L	E2	P001	–	IBC02	–
2400	METHYL ISOVALERATE	3	–	II	–	1 L	E2	P001	–	IBC02	–
2401	PIPERIDINE	8	3	I	–	0	E0	P001	–	–	–
2402	PROPANETHIOLS	3	–	II	–	1 L	E2	P001	–	IBC02	–
2403	ISOPROPENYL ACETATE	3	–	II	–	1 L	E2	P001	–	IBC02	–
2404	PROPIONITRILE	3	6.1	II	–	1 L	E0	P001	–	IBC02	–
2405	ISOPROPYL BUTYRATE	3	–	III	–	5 L	E1	P001 LP01	–	IBC03	–
2406	ISOPROPYL ISOBUTYRATE	3	–	II	–	1 L	E2	P001	–	IBC02	–
2407	ISOPROPYL CHLOROFORMATE	6.1	3/8	I	354	0	E0	P602	–	–	–
2409	ISOPROPYL PROPIONATE	3	–	II	–	1 L	E2	P001	–	IBC02	–
2410	1,2,3,6-TETRAHYDROPYRIDINE	3	–	II	–	1 L	E2	P001	–	IBC02	–
2411	BUTYRONITRILE	3	6.1	II	–	1 L	E2	P001	–	IBC02	–
2412	TETRAHYDROTHIOPHENE	3	–	II	–	1 L	E2	P001	–	IBC02	–
2413	TETRAPROPYL ORTHOTITANATE	3	–	III	–	5 L	E1	P001 LP01	–	IBC03	–
2414	THIOPHENE	3	–	II	–	1 L	E2	P001	–	IBC02	–
2416	TRIMETHYL BORATE	3	–	II	–	1 L	E2	P001	–	IBC02	–
2417	CARBONYL FLUORIDE	2.3	8	–	–	0	E0	P200	–	–	–
2418	SULPHUR TETRAFLUORIDE	2.3	8	–	–	0	E0	P200	–	–	–
2419	BROMOTRIFLUOROETHYLENE	2.1	–	–	–	0	E0	P200	–	–	–

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	Tank instructions	Provisions					
(12)	(13) 4.2.5 4.3	(14) 4.2.5	(15) 5.4.3.2 7.8	(16a) 7.1 7.3–7.7	(16b) 7.2–7.7	(17)	(18)
–	T7	TP1	F-E, S-D	Category E	–	Colourless liquid. Flashpoint: below –18°C c.c. Explosive limits: 1.7% to 8.4%. Boiling point: 55°C. Immiscible with water.	2398
–	T7	TP1	F-E, S-C	Category B	SG35	Colourless liquid. Flashpoint: 3°C c.c. Miscible with water. Reacts violently with acids. Harmful by inhalation. Causes burns to skin, eyes and mucous membranes.	2399
–	T4	TP1	F-E, S-D	Category B	–	Colourless liquid. Immiscible with water.	2400
–	T10	TP2	F-E, S-C	Category D	SG35	Colourless liquid with a fish-like odour. Miscible with water. Reacts violently with acids. Solution in water is a strong alkali and is corrosive. When involved in fire, evolves toxic nitrous fumes.	2401
–	T4	TP1 TP13	F-E, S-D	Category E	SG50 SG57	Colourless or yellowish liquids with a strong unpleasant odour. Flashpoint: below –18°C c.c. Boiling range: 53°C to 67°C. Immiscible with water.	2402
–	T4	TP1	F-E, S-D	Category B	–	Colourless liquid. Flashpoint: 10°C c.c. Immiscible with water.	2403
–	T7	TP1 TP13	F-E, S-D	Category E SW2	–	Colourless, volatile liquid with an ether-like odour. Flashpoint: 2°C c.c. Explosive limits: 3.1% to ... Miscible with water. When involved in a fire, evolves highly toxic cyanide fumes. Toxic if swallowed, by skin contact or by inhalation.	2404
–	T2	TP1	F-E, S-D	Category A	–	Colourless liquid. Flashpoint: 25°C c.c. Immiscible with water. Irritating to skin, eyes and mucous membranes.	2405
–	T4	TP1	F-E, S-D	Category B	–	Colourless liquid. Flashpoint: 20°C c.c. Immiscible with water. Narcotic. Irritating to skin, eyes and mucous membranes.	2406
–	–	–	F-E, S-C	Category D SW2	SG5 SG8	Colourless flammable liquid. Flashpoint: 16°C c.c. Decomposed by water, evolving hydrogen chloride, an irritating and corrosive gas apparent as white fumes. In the presence of moisture, corrosive to most metals. Highly toxic if swallowed, by skin contact or by inhalation. Causes burns to skin, eyes and mucous membranes.	2407
–	T4	TP1	F-E, S-D	Category B	–	Colourless liquid. Flashpoint: 21°C c.c. Immiscible with water.	2409
–	T4	TP1	F-E, S-D	Category B	–	Colourless liquid. Flashpoint: 16°C c.c. Miscible with water. Harmful by inhalation.	2410
–	T7	TP1 TP13	F-E, S-D	Category E SW2	–	Colourless liquid. Flashpoint: 21°C c.c. Explosive limits: 1.6% to ... Immiscible with water. Toxic if swallowed, by skin contact or by inhalation.	2411
–	T4	TP1	F-E, S-D	Category B	–	Colourless liquid with a pleasant odour. Flashpoint: 13°C c.c. Immiscible with water.	2412
–	T4	TP1	F-E, S-D	Category A	–	Colourless liquid. Flashpoint: 38°C c.c.	2413
–	T4	TP1	F-E, S-D	Category B SW2	–	Colourless liquid with an unpleasant odour. Flashpoint: –9°C c.c. Explosive limits: 1.5% to 12.5%. Immiscible with water. Irritating to skin, eyes and mucous membranes.	2414
–	T7	TP1	F-E, S-D	Category B	–	Colourless liquid. Reacts with water, evolving flammable vapours.	2416
–	–	–	F-C, S-U	Category D SW2	–	Non-flammable, toxic and corrosive colourless gas with a pungent odour. Corrosive to glass and to most metals. Corrosive in the presence of water. Much heavier than air (2.3). Highly irritating to skin, eyes and mucous membranes.	2417
–	–	–	F-C, S-U	Category D SW2	SG35	Non-flammable, toxic and corrosive, colourless gas with a pungent odour. Reacts with water, moist air or acids to produce toxic and corrosive fumes. Corrosive to glass and to most metals. Much heavier than air (3.7). Highly irritating to skin, eyes and mucous membranes.	2418
–	–	–	F-D, S-U	Category B SW2	–	Liquefied, flammable, colourless gas. Much heavier than air (5.6). Boiling point: –3°C.	2419

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						Limited quantities	Excepted quantities	Instructions	Provisions	Instructions	Provisions
(1)	(2)	(3)	(4)	(5)	(6)	(7a)	(7b)	(8)	(9)	(10)	(11)
	3.1.2	2.0	2.0	2.0.1.3	3.3	3.4	3.5	4.1.4	4.1.4	4.1.4	4.1.4
2420	HEXAFLUOROACETONE	2.3	8	-	-	0	E0	P200	-	-	-
2421	NITROGEN TRIOXIDE	2.3	5.1/8	-	-	0	E0	P200	-	-	-
2422	OCTAFLUOROBUT-2-ENE (REFRIGERANT GAS R 1318)	2.2	-	-	-	120 mL	E1	P200	-	-	-
2424	OCTAFLUOROPROPANE (REFRIGERANT GAS R 218)	2.2	-	-	-	120 mL	E1	P200	-	-	-
2426	AMMONIUM NITRATE, LIQUID (hot concentrated solution)	5.1	-	-	252 942	0	E0	-	-	-	-
2427	POTASSIUM CHLORATE, AQUEOUS SOLUTION	5.1	-	II	-	1 L	E2	P504	-	IBC02	-
2427	POTASSIUM CHLORATE, AQUEOUS SOLUTION	5.1	-	III	223	5 L	E1	P504	-	IBC02	-
2428	SODIUM CHLORATE, AQUEOUS SOLUTION	5.1	-	II	-	1 L	E2	P504	-	IBC02	-
2428	SODIUM CHLORATE, AQUEOUS SOLUTION	5.1	-	III	223	5 L	E1	P504	-	IBC02	-
2429	CALCIUM CHLORATE, AQUEOUS SOLUTION	5.1	-	II	-	1 L	E2	P504	-	IBC02	-
2429	CALCIUM CHLORATE, AQUEOUS SOLUTION	5.1	-	III	223	5 L	E1	P504	-	IBC02	-

UN No.	Portable tanks and bulk containers		EmS	Stowage and handling	Segregation	Properties and observations	UN No.
	Tank instructions	Provisions					
(12)	(13)	(14)	(15)	(16a)	(16b)	(17)	(18)
	4.2.5 4.3	4.2.5	5.4.3.2 7.8	7.1 7.3-7.7	7.2-7.7		
2420	-	-	F-C, S-U	Category D SW2	-	Non-flammable, toxic and corrosive, colourless, hygroscopic gas with an unpleasant odour. Reacts vigorously with water, evolving heat. Corrosive to glass and to most metals. Fumes in moist air. Much heavier than air (5.7). Highly irritating to skin, eyes and mucous membranes.	2420
2421	-	-	F-C, S-W	Category D SW2	SG6 SG19	Liquefied, non-flammable, toxic and corrosive gas. At lower temperatures, present as a blue liquid. Strong oxidizing agent. Much heavier than air (2.6). Boiling point: 3.5°C. Highly irritating to skin, eyes and mucous membranes.	2421
2422	-	-	F-C, S-V	Category A	-	Liquefied, non-flammable, colourless gas. Much heavier than air (6.9). Boiling point: 1.2°C.	2422
2424	T50	-	F-C, S-V	Category A	-	Liquefied, non-flammable, colourless gas. Much heavier than air (6.6). Boiling point: -36°C.	2424
2426	T7	TP1 TP16 TP17	F-H, S-Q	Category D	SG42 SG45 SG47 SG48 SG51 SG56 SG58 SG59 SG61	Hot aqueous solution of not more than 93% ammonium nitrate with not more than 0.2% combustible material (including organic material calculated as carbon) and free from any other added matter, containing at least 7% water, while the maximum content of chloride ions should not exceed 0.02%. May cause fire and explosion in contact with combustible material (e.g. wood, straw, cotton, oil, sugar, etc.), strong acids, and other class 5.1 substances and burn fiercely. Maximum allowable transport temperature of the solution 140°C. This temperature should be indicated on the transport unit. The acidity (pH) of the cargo when diluted with ten parts of water to one part of cargo, by mass, should be between 5.0 and 7.0. The concentration and temperature of the solution at the time of loading, its percentage of combustible materials and of chlorides, and the contents of free acid should be certified.	2426
2427	T4	TP1	F-H, S-Q	Category B	SG38 SG49 SG62	Colourless liquid. When involved in a fire, may cause an explosion. Leakage and subsequent evaporation of the water may present increased dangers as follows: .1 in contact with combustible material (particularly with fibrous material such as jute, cotton or sisal) or sulphur, danger of spontaneous combustion; .2 in contact with ammonium compounds, powdered metals or oils, danger of explosion.	2427
2427	T4	TP1	F-H, S-Q	Category B	SG38 SG49 SG62	See entry above.	2427
2428	T4	TP1	F-H, S-Q	Category B	SG38 SG49 SG62	Colourless liquid. When involved in a fire, may cause an explosion. Leakage and subsequent evaporation of the water may present increased dangers as follows: .1 in contact with combustible material (particularly with fibrous material such as jute, cotton or sisal) or sulphur, danger of spontaneous combustion; .2 in contact with ammonium compounds, powdered metals or oils, danger of explosion.	2428
2428	T4	TP1	F-H, S-Q	Category B	SG38 SG49 SG62	See entry above.	2428
2429	T4	TP1	F-H, S-Q	Category B	SG38 SG49 SG62	Colourless liquid. When involved in a fire, may cause an explosion. Leakage and subsequent evaporation of the water may present increased dangers as follows: .1 in contact with combustible material (particularly with fibrous material such as jute, cotton or sisal) or sulphur, danger of spontaneous combustion; .2 in contact with ammonium compounds, powdered metals or oils, danger of explosion.	2429
2429	T4	TP1	F-H, S-Q	Category B	SG38 SG49 SG62	See entry above.	2429

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						Limited quantities	Excepted quantities	Instructions	Provisions	Instructions	Provisions
(1)	(2) 3.1.2	(3) 2.0	(4) 2.0	(5) 2.0.1.3	(6) 3.3	(7a) 3.4	(7b) 3.5	(8) 4.1.4	(9) 4.1.4	(10) 4.1.4	(11) 4.1.4
2430	ALKYLPHENOLS, SOLID, N.O.S. (including C ₂ -C ₁₂ homologues)	8	-	I	-	0	E0	P002	-	IBC07	B1
2430	ALKYLPHENOLS, SOLID, N.O.S. (including C ₂ -C ₁₂ homologues)	8	-	II	-	1 kg	E2	P002	-	IBC08	B4 B21
2430	ALKYLPHENOLS, SOLID, N.O.S. (including C ₂ -C ₁₂ homologues)	8	-	III	223	5 kg	E1	P002 LP02	-	IBC08	B3
2431	ANISIDINES	6.1	-	III	-	5 L	E1	P001 LP01	-	IBC03	-
2432	N,N-DIETHYLANILINE	6.1	-	III	279	5 L	E1	P001 LP01	-	IBC03	-
2433	CHLORONITROTOLUENES, LIQUID	6.1	- P	III	-	5 L	E1	P001 LP01	-	IBC03	-
2434	DIBENZYL-DICHLOROSILANE	8	-	II	-	0	E0	P010	-	-	-
2435	ETHYLPHENYL-DICHLOROSILANE	8	-	II	-	0	E0	P010	-	-	-
2436	THIOACETIC ACID	3	-	II	-	1 L	E2	P001	-	IBC02	-
2437	METHYLPHENYL-DICHLOROSILANE	8	-	II	-	0	E0	P010	-	-	-
2438	TRIMETHYLACETYL CHLORIDE	6.1	3/8	I	-	0	E0	P001	-	-	-
2439	SODIUM HYDROGEN-DIFLUORIDE	8	-	II	-	1 kg	E2	P002	-	IBC08	B4 B21
2440	STANNIC CHLORIDE PENTAHYDRATE	8	-	III	-	5 kg	E1	P002 LP02	-	IBC08	B3
2441	TITANIUM TRICHLORIDE, PYROPHORIC or TITANIUM TRICHLORIDE MIXTURE, PYROPHORIC	4.2	8	I	-	0	E0	P404	-	-	-
2442	TRICHLOROACETYL CHLORIDE	8	-	II	-	0	E0	P001	-	-	-

UN No.	Portable tanks and bulk containers		EmS	Stowage and handling	Segregation	Properties and observations	UN No.
	Tank instructions	Provisions					
(12)	(13) 4.2.5 4.3	(14) 4.2.5	(15) 5.4.3.2 7.8	(16a) 7.1 7.3-7.7	(16b) 7.2-7.7	(17)	(18)
-	T6	TP33	F-A, S-B	Category B	-	A wide range of colourless to pale straw-coloured solids with penetrating odours (sometimes camphor-like). Some have low melting points. Insoluble in water. Cause burns to skin, eyes and mucous membranes.	2430
-	T3	TP33	F-A, S-B	Category B	-	See entry above.	2430
-	T1	TP33	F-A, S-B	Category A	-	See entry above.	2430
-	T4	TP1	F-A, S-A	Category A	-	Reddish or yellowish oily liquid. Immiscible with water. Toxic if swallowed, by skin contact or by inhalation.	2431
-	T4	TP1	F-A, S-A	Category A	-	Colourless to yellow-brown oily liquid. Combustible. Toxic if swallowed, by skin contact or by inhalation.	2432
-	T4	TP1	F-A, S-A	Category A	SG6 SG8 SG10 SG12	Immiscible with water. Oxidizing substance which may explode or burn fiercely when in contact with organic materials. Toxic if swallowed, by skin contact or by inhalation.	2433
-	T10	TP2 TP7 TP13	F-A, S-B	Category C SW2	-	Colourless liquid with a pungent odour. Reacts violently with water, evolving hydrogen chloride, a corrosive gas apparent as white fumes. When involved in a fire, evolves toxic gases. In the presence of moisture, highly corrosive to most metals. Vapour irritating to skin, eyes and mucous membranes.	2434
-	T10	TP2 TP7 TP13	F-A, S-B	Category C	-	Colourless liquid with a pungent odour. Reacts with water, evolving hydrogen chloride, a corrosive gas apparent as white fumes. When involved in a fire, evolves toxic gases. In the presence of moisture, highly corrosive to most metals. Causes burns to skin, eyes and mucous membranes.	2435
-	T4	TP1	F-E, S-D	Category B	-	Colourless or yellow liquid with a pungent odour. Miscible with water. Harmful by inhalation.	2436
-	T10	TP2 TP7 TP13	F-A, S-B	Category C SW2	-	Colourless liquid. Reacts with water, evolving hydrogen chloride, an irritating and corrosive gas apparent as white fumes. When involved in a fire, evolves toxic gases. In the presence of moisture, highly corrosive to most metals. Causes burns to skin, eyes and mucous membranes.	2437
-	T14	TP2 TP13	F-E, S-C	Category D SW1 SW2	SG5 SG8	Flammable liquid. Flashpoint: 19°C c.c. Boiling point: 108°C. Reacts with water, evolving hydrogen chloride, a corrosive gas apparent as white fumes. In the presence of moisture, corrosive to most metals. Highly toxic if swallowed, by skin contact or by inhalation. Causes burns to skin, eyes and mucous membranes.	2438
-	T3	TP33	F-A, S-B	Category A SW1 SW2 H2	SG35	White, crystalline powder. Soluble in water. Decomposed by heat or acids, evolving hydrogen fluoride, a toxic extremely irritating and corrosive gas. In the presence of moisture, highly corrosive to glass, other siliceous materials and most metals. Causes burns to skin, eyes and mucous membranes.	2439
-	T1	TP33	F-A, S-B	Category A	-	White, deliquescent solid. Melting point: about 60°C. Soluble in water. In the presence of water, corrosive to most metals. Irritating to skin, eyes and mucous membranes.	2440
-	-	-	F-G, S-M	Category D SW2 H1	SG26	Finely divided, violet, crystalline solid. May ignite on exposure to air or moisture. In the presence of moisture, corrosive to most metals. Causes burns to skin, eyes and mucous membranes.	2441
-	T7	TP2	F-A, S-B	Category D SW2	-	Liquid with a pungent odour, which fumes in moist air. Reacts violently with water, evolving hydrogen chloride, a corrosive gas apparent as white fumes. When involved in a fire, evolves toxic gases. In the presence of moisture, corrosive to most metals. Liquid and vapours cause burns to skin, eyes and mucous membranes.	2442

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						Limited quantities	Excepted quantities	Instructions	Provisions	Instructions	Provisions
(1)	(2) 3.1.2	(3) 2.0	(4) 2.0	(5) 2.0.1.3	(6) 3.3	(7a) 3.4	(7b) 3.5	(8) 4.1.4	(9) 4.1.4	(10) 4.1.4	(11) 4.1.4
2443	VANADIUM OXYTRICHLORIDE	8	–	II	–	1 L	E0	P001	–	IBC02	–
2444	VANADIUM TETRACHLORIDE	8	–	I	–	0	E0	P802	–	–	–
2446	NITROCRESOLS, SOLID	6.1	–	III	–	5 kg	E1	P002 LP02	–	IBC08	B3
2447	PHOSPHORUS, WHITE, MOLTEN	4.2	6.1 P	I	–	0	E0	–	–	–	–
2448	SULPHUR, MOLTEN	4.1	–	III	–	0	E0	–	–	IBC01	–
2451	NITROGEN TRIFLUORIDE	2.2	5.1	–	–	0	E0	P200	–	–	–
2452	ETHYLACETYLENE, STABILIZED	2.1	–	–	386	0	E0	P200	–	–	–
2453	ETHYL FLUORIDE (REFRIGERANT GAS R 161)	2.1	–	–	–	0	E0	P200	–	–	–
2454	METHYL FLUORIDE (REFRIGERANT GAS R 41)	2.1	–	–	–	0	E0	P200	–	–	–
2455	METHYL NITRITE	2.2	–	–	900	–	–	–	–	–	–
2456	2-CHLOROPROPENE	3	–	I	–	0	E3	P001	–	–	–
2457	2,3-DIMETHYLBUTANE	3	–	II	–	1 L	E2	P001	–	IBC02	–
2458	HEXADIENES	3	–	II	–	1 L	E2	P001	–	IBC02	–
2459	2-METHYL-1-BUTENE	3	–	I	–	0	E3	P001	–	–	–
2460	2-METHYL-2-BUTENE	3	–	II	–	1 L	E2	P001	–	IBC02	B8
2461	METHYLPENTADIENES	3	–	II	–	1 L	E2	P001	–	IBC02	–

UN No.	Portable tanks and bulk containers		EmS	Stowage and handling	Segregation	Properties and observations	UN No.
	Tank instructions	Provisions					
(12)	(13) 4.2.5 4.3	(14) 4.2.5	(15) 5.4.3.2 7.8	(16a) 7.1 7.3–7.7	(16b) 7.2–7.7	(17)	(18)
–	T7	TP2	F-A, S-B	Category C SW2	–	Yellow liquid. Decomposition occurs on exposure to moist air, forming red fumes of vanadic acid and hydrogen chloride, a corrosive gas apparent as white fumes. Reacts with, or dissolves, many organic compounds. In the presence of moisture, corrosive to most metals. Causes burns to skin, eyes and mucous membranes.	2443
–	T10	TP2	F-A, S-B	Category C SW2	–	Reddish-brown liquid. Decomposes under the influence of light, evolving chlorine, a highly toxic and irritating gas. Reacts violently with water, evolving hydrogen chloride, a corrosive gas apparent as white fumes. In the presence of moisture, corrosive to most metals. Liquid and vapours cause burns to skin, eyes and mucous membranes.	2444
–	T1	TP33	F-A, S-A	Category A	–	Yellow crystals. Melting point: 32°C or above. Slightly soluble in water. Toxic if swallowed, by skin contact or by inhalation.	2446
–	T21	TP3 TP7 TP26	F-A, S-M	Category D	–	Molten liquid. Melting point: 44°C. Ignites spontaneously in air. Toxic if swallowed, by skin contact or by inhalation. Shipped molten above its melting point.	2447
–	T1	TP3	F-A, S-H	Category C	SG17	Melting point: 119°C. Molten sulphur may contain hydrogen sulphide, which is highly poisonous in low concentrations. When involved in a fire, evolves toxic, very irritating and suffocating gas. Forms explosive and extremely sensitive mixtures with oxidizing substances. Shipped molten above its melting point.	2448
–	–	–	F-C, S-W	Category D SW2	–	Non-flammable, non-toxic, colourless, odourless gas. Strong oxidizing agent; reacts violently with many substances, e.g. grease, oil, etc. Much heavier than air (2.4). May cause slight eye irritation.	2451
–	–	–	F-D, S-U	Category B SW1 SW2	–	Liquefied, flammable, colourless gas with an odour similar to acetylene. Heavier than air (1.9). Boiling point: 8°C. Irritating to skin, eyes and mucous membranes.	2452
–	–	–	F-D, S-U	Category E SW2	–	Liquefied, flammable, colourless gas. Explosive limits: 5% to 10%. Heavier than air (1.7). Boiling point: –37°C.	2453
–	–	–	F-D, S-U	Category E SW2	–	Flammable, colourless gas. Heavier than air (1.2).	2454
–	–	–	–	–	–	Transport is prohibited.	2455
–	T11	TP2	F-E, S-D	Category E	–	Colourless liquid. Flashpoint: below –18°C c.c. Explosive limits: 2.5% to 12%. Boiling point: 23°C. Immiscible with water. Harmful if swallowed or by inhalation. Irritating to skin, eyes and mucous membranes.	2456
–	T7	TP1	F-E, S-D	Category E	–	Colourless liquid. Flashpoint: –29°C c.c. Explosive limits: 1.2% to 7%. Immiscible with water. Irritating to skin, eyes and mucous membranes. Narcotic in high concentrations.	2457
–	T4	TP1	F-E, S-D	Category B	–	Colourless liquids. 1,3-HEXADIENE: flashpoint –3°C c.c. 1,4-HEXADIENE: flashpoint –25°C c.c. 1,5-HEXADIENE: flashpoint –27°C c.c. 2,4-HEXADIENE: flashpoint –7°C c.c. Immiscible with water. Harmful by inhalation. Irritating to skin, eyes and mucous membranes.	2458
–	T11	TP2	F-E, S-D	Category E	–	Colourless, volatile liquid with a disagreeable odour. Flashpoint: below –18°C c.c. Immiscible with water. Irritating to skin, eyes and mucous membranes.	2459
–	T7	TP1	F-E, S-D	Category E	–	Colourless, volatile liquid with a disagreeable odour. Flashpoint: below –18°C c.c. Immiscible with water. Irritating to skin, eyes and mucous membranes.	2460
–	T4	TP1	F-E, S-D	Category E	–	Colourless liquids. Flashpoint: below –18°C c.c. Immiscible with water. Irritating to skin, eyes and mucous membranes.	2461

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						Limited quantities	Excepted quantities	Instructions	Provisions	Instructions	Provisions
(1)	(2) 3.1.2	(3) 2.0	(4) 2.0	(5) 2.0.1.3	(6) 3.3	(7a) 3.4	(7b) 3.5	(8) 4.1.4	(9) 4.1.4	(10) 4.1.4	(11) 4.1.4
2463	ALUMINIUM HYDRIDE	4.3	–	I	–	0	E0	P403	PP31	–	–
2464	BERYLLIUM NITRATE	5.1	6.1	II	–	1 kg	E2	P002	–	IBC08	B4 B21
2465	DICHLOROISOCYANURIC ACID, DRY or DICHLOROISOCYANURIC ACID, SALTS	5.1	–	II	135	1 kg	E2	P002	–	IBC08	B4 B21
2466	POTASSIUM SUPEROXIDE	5.1	–	I	–	0	E0	P503	–	IBC06	B1
2468	TRICHLOROISOCYANURIC ACID, DRY	5.1	–	II	–	1 kg	E2	P002	–	IBC08	B4 B21
2469	ZINC BROMATE	5.1	–	III	–	5 kg	E1	P002 LP02	–	IBC08	B3
2470	PHENYLACETONITRILE, LIQUID	6.1	–	III	–	5 L	E1	P001 LP01	–	IBC03	–
2471	OSMIUM TETROXIDE	6.1	– P	I	–	0	E5	P002	PP30 PP31	IBC07	B1
2473	SODIUM ARSANILATE	6.1	–	III	–	5 kg	E1	P002 LP02	–	IBC08	B3
2474	THIOPHOSGENE	6.1	–	I	279 354	0	E0	P602	–	–	–
2475	VANADIUM TRICHLORIDE	8	–	III	–	5 kg	E1	P002 LP02	–	IBC08	B3
2477	METHYL ISOTHIOCYANATE	6.1	3	I	354	0	E0	P602	–	–	–
2478	ISOCYANATES, FLAMMABLE, TOXIC, N.O.S. or ISOCYANATE SOLUTION, FLAMMABLE, TOXIC, N.O.S.	3	6.1	II	274	1 L	E2	P001	PP31	IBC02	–
2478	ISOCYANATES, FLAMMABLE, TOXIC, N.O.S. or ISOCYANATE SOLUTION, FLAMMABLE, TOXIC, N.O.S.	3	6.1	III	223 274	5 L	E1	P001	PP31	IBC03	–
2480	METHYL ISOCYANATE	6.1	3	I	354	0	E0	P601	–	–	–

(12)	Portable tanks and bulk containers		EmS	Stowage and handling	Segregation	Properties and observations	UN No.
	Tank instructions	Provisions					
(13) 4.2.5 4.3	(14) 4.2.5	(15) 5.4.3.2 7.8	(16a) 7.1 7.3–7.7	(16b) 7.2–7.7	(17)	(18)	
–	–	–	F-G, S-O	Category E H1	SG26	White to grey powder. In contact with water, acids or moisture, evolves hydrogen, which may be ignited by the heat of the reaction.	2463
–	T3	TP33	F-A, S-Q	Category A	–	White or light yellow deliquescent crystals, or fine dust. Mixtures with combustible material are readily ignited and may burn fiercely. Toxic if swallowed, by skin contact or by dust inhalation.	2464
–	T3	TP33	F-A, S-Q	Category A H1	–	White crystalline powder or granules; slightly hygroscopic. Partially soluble in water. Mixtures with combustible material are sensitive to friction and are liable to ignite. Harmful by inhalation. Irritating to skin, eyes and mucous membranes.	2465
–	–	–	F-G, S-Q	Category D H1	SG16 SG26 SG35 SG59	Yellow flakes. Particularly if wetted with small quantities of water, a mixture with combustible material may ignite, following impact or friction. When involved in a fire, or in contact with water or acids, decomposes, evolving oxygen. Highly irritating to skin, eyes and mucous membranes.	2466
–	T3	TP33	F-A, S-Q	Category A H1	–	Colourless powder or granules. Mixtures with combustible material are sensitive to friction and are liable to ignite. On contact with nitrogen compounds, fumes of nitrogen trichloride can be formed, which are very explosive. Harmful by inhalation. Irritating to skin, eyes and mucous membranes.	2468
–	T1	TP33	F-H, S-Q	Category A	SG38 SG49	Colourless powder. Soluble in water. Reacts vigorously with sulphuric acid. Reacts fiercely with cyanides when heated or by friction. May form explosive mixtures with combustible material, powdered metals or ammonium compounds. These mixtures are sensitive to friction and are liable to ignite. When involved in a fire, may cause an explosion.	2469
–	T4	TP1	F-A, S-A	Category A	SG35	Colourless to light brown liquid. Immiscible with water. Toxic if swallowed, by skin contact or by inhalation.	2470
–	T6	TP33	F-A, S-A	Category B SW2	–	Pale yellow, crystalline, volatile solid with an irritating odour. Highly toxic if swallowed, by skin contact or by inhalation.	2471
–	T1	TP33	F-A, S-A	Category A	–	White, crystalline powder. Soluble in water. Toxic if swallowed, by skin contact or by dust inhalation.	2473
–	T20	TP2 TP13 TP37	F-A, S-A	Category D SW2	SG35	Red fuming liquid with a foul phosgene-like odour. Decomposes slowly in water. Reacts with acids, evolving toxic and corrosive fumes. Highly toxic if swallowed, by skin contact or by inhalation.	2474
–	T1	TP33	F-A, S-B	Category A SW2	–	Pink, deliquescent crystals. Decomposes in water, evolving hydrogen chloride, a corrosive gas apparent as white fumes. In the presence of moisture, highly corrosive to most metals. Irritating to skin, eyes and mucous membranes.	2475
–	T20	TP2 TP13 TP37	F-E, S-D	Category D SW2	–	White crystals. Usually shipped as an oily liquid with a flashpoint below 60°C c.c. Melting point: 36°C (pure substance). Flashpoint: 32°C c.c. (pure substance). Insoluble in water. When involved in a fire, evolves toxic gases. Highly toxic if swallowed, by skin contact or by inhalation.	2477
–	T11	TP2 TP13 TP27	F-E, S-D	Category D SW2	–	Flammable toxic liquids with a pungent odour. Immiscible with water but react with it to form carbon dioxide. Toxic if swallowed, by skin contact or by inhalation. Irritating to skin, eyes and mucous membranes.	2478
–	T7	TP1 TP13 TP28	F-E, S-D	Category A	–	See entry above.	2478
–	T22	TP2 TP13	F-E, S-D	Category D SW2	SG35	Flammable liquid with a pungent odour. Flashpoint: –7°C c.c. (pure product). Boiling point: 38°C (pure product). Vapour heavier than air. Immiscible with water but reacts violently with it. In contact with water or acids, evolves highly toxic nitrous fumes. Highly toxic if swallowed, by skin contact or by inhalation. Irritating to skin, eyes and mucous membranes.	2480

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						Limited quantities	Excepted quantities	Instructions	Provisions	Instructions	Provisions
(1)	(2) 3.1.2	(3) 2.0	(4) 2.0	(5) 2.0.1.3	(6) 3.3	(7a) 3.4	(7b) 3.5	(8) 4.1.4	(9) 4.1.4	(10) 4.1.4	(11) 4.1.4
2481	ETHYL ISOCYANATE	6.1	3	I	354	0	E0	P602	-	-	-
2482	<i>n</i> -PROPYL ISOCYANATE	6.1	3	I	354	0	E0	P602	-	-	-
2483	ISOPROPYL ISOCYANATE	6.1	3	I	354	0	E0	P602	-	-	-
2484	<i>tert</i> -BUTYL ISOCYANATE	6.1	3	I	354	0	E0	P602	-	-	-
2485	<i>n</i> -BUTYL ISOCYANATE	6.1	3	I	354	0	E0	P602	-	-	-
2486	ISOBUTYL ISOCYANATE	6.1	3	I	354	0	E0	P602	-	-	-
2487	PHENYL ISOCYANATE	6.1	3	I	354	0	E0	P602	-	-	-
2488	CYCLOHEXYL ISOCYANATE	6.1	3	I	354	0	E0	P602	-	-	-
2490	DICHLOROISOPROPYL ETHER	6.1	-	II	-	100 mL	E4	P001	-	IBC02	-
2491	ETHANOLAMINE or ETHANOLAMINE SOLUTION	8	-	III	223	5 L	E1	P001 LP01	-	IBC03	-
2493	HEXAMETHYLENIMINE	3	8	II	-	1 L	E2	P001	-	IBC02	-
2495	IODINE PENTAFLUORIDE	5.1	6.1/8	I	-	0	E0	P200	-	-	-
2496	PROPIONIC ANHYDRIDE	8	-	III	-	5 L	E1	P001 LP01	-	IBC03	-
2498	1,2,3,6-TETRAHYDRO-BENZALDEHYDE	3	-	III	-	5 L	E1	P001 LP01	-	IBC03	-

UN No.	Portable tanks and bulk containers		EmS	Stowage and handling	Segregation	Properties and observations	UN No.
	Tank instructions	Provisions					
(12)	(13) 4.2.5 4.3	(14) 4.2.5	(15) 5.4.3.2 7.8	(16a) 7.1 7.3-7.7	(16b) 7.2-7.7	(17)	(18)
-	T20	TP2 TP13 TP37	F-E, S-D	Category D SW2	SG35	Liquid with a pungent odour. Flashpoint: -18°C to 0°C c.c. Boiling point: 60°C. Immiscible with water but reacts violently with it. On contact with water or acids, or when heated above boiling point, evolves highly toxic nitrous fumes. Highly toxic if swallowed, by skin contact or by inhalation. Irritating to skin, eyes and mucous membranes.	2481
-	T20	TP2 TP13 TP37	F-E, S-D	Category D SW2	-	Flammable liquid with a pungent odour. Immiscible with water but reacts violently with it, evolving gases. Flashpoint: -18°C to 23°C c.c. Highly toxic if swallowed, by skin contact or by inhalation. Irritating to skin, eyes and mucous membranes.	2482
-	T20	TP2 TP13 TP37	F-E, S-D	Category D SW2	-	Liquid with a pungent odour. Flashpoint: -10°C to 0°C c.c. Immiscible with water but reacts violently with it, evolving gases. Highly toxic if swallowed, by skin contact or by inhalation. Irritating to skin, eyes and mucous membranes.	2483
-	T20	TP2 TP13 TP37	F-E, S-D	Category D SW2	-	Colourless liquid with a pungent odour. Immiscible with water but reacts violently with it, evolving gases. Flashpoint: 11°C c.c. Highly toxic if swallowed, by skin contact or by inhalation. Irritating to skin, eyes and mucous membranes.	2484
-	T20	TP2 TP13 TP37	F-E, S-D	Category D SW2	-	Colourless liquid with a pungent odour. Immiscible with water but reacts violently with it, evolving gases. Flashpoint: 19°C c.c. Highly toxic if swallowed, by skin contact or by inhalation. Irritating to skin, eyes and mucous membranes.	2485
-	T20	TP2 TP13 TP37	F-E, S-D	Category D SW2	-	Liquid with a pungent odour. Immiscible with water but reacts violently with it, evolving gases. Highly toxic if swallowed, by skin contact or by inhalation. Irritating to skin, eyes and mucous membranes.	2486
-	T20	TP2 TP13 TP37	F-E, S-D	Category D SW2	-	Colourless to yellowish liquid with a pungent odour. Flashpoint: 51°C c.c. Immiscible with water. Reacts with water, evolving carbon dioxide. Highly toxic if swallowed, by skin contact or by inhalation. Irritating to skin, eyes and mucous membranes.	2487
-	T20	TP2 TP13 TP37	F-E, S-D	Category D SW2	-	Yellowish liquid with an irritating odour. Flashpoint: 53°C c.c. Immiscible with water. Reacts with water, evolving carbon dioxide. Highly toxic if swallowed, by skin contact or by inhalation. Irritating to skin, eyes and mucous membranes.	2488
-	T7	TP2	F-A, S-A	Category B	-	Colourless liquid. Immiscible with water. Toxic if swallowed, by skin contact or by inhalation.	2490
-	T4	TP1	F-A, S-B	Category A	SG35	Colourless. Miscible with water. Corrosive to copper, copper compounds, copper alloys and rubber. Reacts violently with acids. Liquid and vapour cause burns to skin, eyes and mucous membranes.	2491
-	T7	TP1	F-E, S-C	Category B SW2	-	Yellowish liquid with an ammoniacal odour. Flashpoint: 18°C c.c. Miscible with water. Harmful by inhalation. Absorbed through the skin. Causes burns to skin, eyes and mucous membranes.	2493
-	-	-	F-A, S-Q	Category D SW1 SW2	SG6 SG16 SG19 SG35	Colourless, fuming liquid (density 3.75). Powerful oxidant; may cause fire in contact with organic material such as wood, cotton or straw. Reacts violently with water, evolving hydrogen fluoride, a toxic, extremely corrosive gas apparent as white fumes. In contact with acids or acid fumes, evolves highly toxic fumes of iodine, fluorine and their compounds. Highly corrosive to most metals. Toxic if swallowed, by skin contact or by inhalation. Causes burns to skin, eyes and mucous membranes.	2495
-	T4	TP1	F-A, S-B	Category A	-	Colourless, combustible liquid with a pungent odour. Reacts with water, forming propionic acid. Corrosive to skin, eyes and mucous membranes.	2496
-	T2	TP1	F-E, S-D	Category A	-	Colourless liquid. Flashpoint: 57°C o.c. Immiscible with water.	2498

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						Limited quantities	Excepted quantities	Instructions	Provisions	Instructions	Provisions
(1)	(2) 3.1.2	(3) 2.0	(4) 2.0	(5) 2.0.1.3	(6) 3.3	(7a) 3.4	(7b) 3.5	(8) 4.1.4	(9) 4.1.4	(10) 4.1.4	(11) 4.1.4
2501	TRIS-(1-AZIRIDINYL)-PHOSPHINE OXIDE SOLUTION	6.1	–	II	–	100 mL	E4	P001	–	IBC02	–
2501	TRIS-(1-AZIRIDINYL)-PHOSPHINE OXIDE SOLUTION	6.1	–	III	223	5 L	E1	P001 LP01	–	IBC03	–
2502	VALERYL CHLORIDE	8	3	II	–	1 L	E2	P001	–	IBC02	–
2503	ZIRCONIUM TETRACHLORIDE	8	–	III	–	5 kg	E1	P002 LP02	–	IBC08	B3
2504	TETRABROMOETHANE	6.1	– P	III	–	5 L	E1	P001 LP01	–	IBC03	–
2505	AMMONIUM FLUORIDE	6.1	–	III	–	5 kg	E1	P002 LP02	–	IBC08	B3
2506	AMMONIUM HYDROGEN SULPHATE	8	–	II	–	1 kg	E2	P002	–	IBC08	B4 B21
2507	CHLOROPLATINIC ACID, SOLID	8	–	III	–	5 kg	E1	P002 LP02	–	IBC08	B3
2508	MOLYBDENUM PENTACHLORIDE	8	–	III	–	5 kg	E1	P002 LP02	–	IBC08	B3
2509	POTASSIUM HYDROGEN SULPHATE	8	–	II	–	1 kg	E2	P002	–	IBC08	B4 B21
2511	2-CHLOROPROPIONIC ACID	8	–	III	223	5 L	E1	P001 LP01	–	IBC03	–
2512	AMINOPHENOLS (<i>o</i> -, <i>m</i> -, <i>p</i> -)	6.1	–	III	279	5 kg	E1	P002 LP02	–	IBC08	B3
2513	BROMOACETYL BROMIDE	8	–	II	–	1 L	E2	P001	–	IBC02	B20
2514	BROMOBENZENE	3	– P	III	–	5 L	E1	P001 LP01	–	IBC03	–
2515	BROMOFORM	6.1	– P	III	–	5 L	E1	P001 LP01	–	IBC03	–
2516	CARBON TETRABROMIDE	6.1	– P	III	–	5 kg	E1	P002 LP02	–	IBC08	B3
2517	1-CHLORO-1,1-DIFLUOROETHANE (REFRIGERANT GAS R 142b)	2.1	–	–	–	0	E0	P200	–	–	–
2518	1,5,9-CYCLODODECATRIENE	6.1	– P	III	–	5 L	E1	P001 LP01	–	IBC03	–

UN No.	Portable tanks and bulk containers		EmS	Stowage and handling	Segregation	Properties and observations	UN No.
	Tank instructions	Provisions					
(12)	(13) 4.2.5 4.3	(14) 4.2.5	(15) 5.4.3.2 7.8	(16a) 7.1 7.3–7.7	(16b) 7.2–7.7	(17)	(18)
–	T7	TP2	F-A, S-A	Category A	–	Aqueous solution. Miscible with water. Toxic if swallowed, by skin contact or by inhalation.	2501
–	T4	TP1	F-A, S-A	Category A	–	See entry above.	2501
–	T7	TP2	F-E, S-C	Category C SW2	–	Liquid with a penetrating odour. Flashpoint: 23°C c.c. or above. Reacts with water, evolving hydrogen chloride, a corrosive gas apparent as white fumes. Corrosive to most metals. Causes burns to skin, eyes and mucous membranes.	2502
–	T1	TP33	F-A, S-B	Category A	–	White, lustrous crystals. Reacts with water, evolving hydrogen chloride, a corrosive gas apparent as white fumes. In the presence of moisture, corrosive to most metals. Irritating to mucous membranes.	2503
–	T4	TP1	F-A, S-A	Category A	–	Colourless to yellowish liquid with a camphor-like odour. Toxic if swallowed, by skin contact or by inhalation.	2504
–	T1	TP33	F-A, S-A	Category A	SG35	Colourless crystals or powder with an ammonia-like odour. Readily soluble in water. Decomposes in contact with acids, evolving hydrogen fluoride, a corrosive gas. Toxic if swallowed, by skin contact or by dust inhalation.	2505
–	T3	TP33	F-A, S-B	Category A SW2	–	White, rhombic crystals. Soluble in water. When involved in a fire, evolves extremely irritating and corrosive fumes. In the presence of moisture, corrosive to most metals. Causes burns to skin, eyes and mucous membranes.	2506
–	T1	TP33	F-A, S-B	Category A	–	Red-brown crystals. Soluble in water.	2507
–	T1	TP33	F-A, S-B	Category C SW2	–	Black or green-black crystals. Hygroscopic. Reacts violently with water, evolving hydrogen chloride, a corrosive gas apparent as white fumes. Harmful if swallowed. Dust and vapour irritate skin, eyes and mucous membranes.	2508
–	T3	TP33	F-A, S-B	Category A	–	Colourless crystals. Soluble in water. When involved in a fire, evolves extremely irritating and corrosive fumes. In the presence of moisture, corrosive to most metals. Irritating to skin, eyes and mucous membranes.	2509
–	T4	TP2	F-A, S-B	Category A	–	Colourless, aqueous solution with a specific odour. Causes burns to skin, eyes and mucous membranes.	2511
–	T1	TP33	F-A, S-A	Category A	–	White or brownish (<i>ortho</i> - and <i>para</i> -) or reddish-yellow (<i>meta</i> -) crystals. Soluble in water. Toxic if swallowed, by skin contact or by inhalation.	2512
–	T8	TP2	F-A, S-B	Category C SW2	SG36	Clear liquid, colourless. Boiling point: 150°C. Reacts violently with water, evolving hydrogen bromide, an irritating and corrosive gas apparent as white fumes. In the presence of moisture, highly corrosive to most metals. Reacts violently with alkalis such as ammonia and hydrazine. Causes very severe burns to skin, eyes and mucous membranes. Vapour causes tears.	2513
–	T2	TP1	F-E, S-D	Category A	–	Colourless liquid with a characteristic odour. Flashpoint: 51°C c.c. Explosive limits: 0.5% to 2.8%. Immiscible with water.	2514
–	T4	TP1	F-A, S-A	Category A SW1 SW2 H2	–	Colourless liquid or crystals (melting point 9°C) with a chloroform-like odour. Toxic if swallowed, by skin contact or by inhalation. Narcotic effect.	2515
–	T1	TP33	F-A, S-A	Category A SW1	–	Colourless crystals. Melting point: 48°C. Insoluble in water. Toxic if swallowed, by skin contact or by inhalation of dust and vapour.	2516
–	T50	–	F-D, S-U	Category B SW2	–	Flammable gas. Explosive limits: 8.5% to 14%. Much heavier than air (3.5).	2517
–	T4	TP1	F-A, S-A	Category A SW2	–	Colourless liquid. Toxic if swallowed, by skin contact or by inhalation.	2518

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						Limited quantities	Excepted quantities	Instructions	Provisions	Instructions	Provisions
(1)	(2) 3.1.2	(3) 2.0	(4) 2.0	(5) 2.0.1.3	(6) 3.3	(7a) 3.4	(7b) 3.5	(8) 4.1.4	(9) 4.1.4	(10) 4.1.4	(11) 4.1.4
2520	CYCLOOCTADIENES	3	–	III	–	5 L	E1	P001 LP01	–	IBC03	–
2521	DIKETENE, STABILIZED	6.1	3	I	354 386	0	E0	P602	–	–	–
2522	2-DIMETHYLAMINOETHYL METHACRYLATE	6.1	–	II	–	100 mL	E4	P001	–	IBC02	–
2524	ETHYL ORTHOFORMATE	3	–	III	–	5 L	E1	P001 LP01	–	IBC03	–
2525	ETHYL OXALATE	6.1	–	III	–	5 L	E1	P001 LP01	–	IBC03	–
2526	FURFURYLAMINE	3	8	III	–	5 L	E1	P001	–	IBC03	–
2527	ISOBUTYL ACRYLATE, STABILIZED	3	–	III	386	5 L	E1	P001 LP01	–	IBC03	–
2528	ISOBUTYL ISOBUTYRATE	3	–	III	–	5 L	E1	P001 LP01	–	IBC03	–
2529	ISOBUTYRIC ACID	3	8	III	–	5 L	E1	P001	–	IBC03	–
2531	METHACRYLIC ACID, STABILIZED	8	–	II	386	1 L	E2	P001	–	IBC02	–
2533	METHYL TRICHLOROACETATE	6.1	–	III	–	5 L	E1	P001 LP01	–	IBC03	–
2534	METHYLCHLOROSILANE	2.3	2.1/8	–	–	0	E0	P200	–	–	–
2535	4-METHYLMORPHOLINE (N-METHYLMORPHOLINE)	3	8	II	–	1 L	E2	P001	–	IBC02	–
2536	METHYLTETRAHYDROFURAN	3	–	II	–	1 L	E2	P001	–	IBC02	–
2538	NITRONAPHTHALENE	4.1	–	III	–	5 kg	E1	P002 LP02	–	IBC08	B3
2541	TERPINOLENE	3	–	III	–	5 L	E1	P001 LP01	–	IBC03	–
2542	TRIBUTYLAMINE	6.1	–	II	–	100 mL	E4	P001	–	IBC02	–
2545	HAFNIUM POWDER, DRY	4.2	–	I	–	0	E0	P404	PP31	–	–
2545	HAFNIUM POWDER, DRY	4.2	–	II	–	0	E2	P410	PP31	IBC06	B21

UN No.	Portable tanks and bulk containers		EmS	Stowage and handling	Segregation	Properties and observations	UN No.
	Tank instructions	Provisions					
(12)	(13) 4.2.5 4.3	(14) 4.2.5	(15) 5.4.3.2 7.8	(16a) 7.1 7.3–7.7	(16b) 7.2–7.7	(17)	(18)
–	T2	TP1	F-E, S-D	Category A	–	Colourless liquids. Immiscible with water. 1,5-CYCLOOCTADIENE: flashpoint 38°C c.c. Irritating to skin, eyes and mucous membranes.	2520
–	T20	TP2 TP13 TP37	F-E, S-D	Category D SW1 SW2	SG20 SG21	Colourless flammable liquid with a pungent odour. Flashpoint: 44°C c.c. Immiscible with water, but hydrolyses slowly in contact with it. The presence of acids, bases or amines can initiate explosive polymerization. Highly toxic if swallowed, by skin contact or by inhalation.	2521
–	T7	TP2	F-A, S-A	Category D SW2	–	Combustible liquid. Causes tears. Toxic if swallowed, by skin contact or by inhalation.	2522
–	T2	TP1	F-E, S-D	Category A	–	Colourless liquid with an ethereal odour. Flashpoint: 30°C c.c. Immiscible with water.	2524
–	T4	TP1	F-A, S-A	Category A	–	Colourless, oily, aromatic liquid. Slowly decomposed by water. Toxic if swallowed, by skin contact or by dust inhalation.	2525
–	T4	TP1	F-E, S-C	Category A SW2	–	Pale yellow, oily liquid. Flashpoint: 37°C o.c. Miscible with water. Harmful by inhalation. Causes burns to skin and eyes. Irritating to mucous membranes.	2526
–	T2	TP1	F-E, S-D	Category C SW1	–	Colourless liquid with a pungent odour. Flashpoint: 29°C o.c. Immiscible with water. Harmful by inhalation. Irritating to skin, eyes and mucous membranes.	2527
–	T2	TP1	F-E, S-D	Category A	–	Colourless liquid with a fruity odour. Flashpoint: 37°C c.c. Explosive limits: 0.96% to 7.59%. Immiscible with water.	2528
–	T4	TP1	F-E, S-C	Category A	–	Colourless liquid with a pungent odour. Flashpoint: 55°C c.c. Explosive limits: 2% to 9.2%. Miscible with water. Causes burns to skin and eyes. Irritating to skin, eyes and mucous membranes.	2529
–	T7	TP2 TP18 TP30	F-A, S-B	Category C SW1 SW2	–	Colourless, combustible liquid with a specific odour. Miscible with water. Polymerizes readily above its melting point (15°C), thereby generating heat and possible risk of explosion; should therefore be properly stabilized. Cooling below melting point (15°C) followed by subsequent reheating can release uninhibited monomer that readily polymerizes. Decomposes when heated, evolving toxic gases. Causes burns to skin, eyes and mucous membranes.	2531
–	T4	TP1	F-A, S-A	Category A	–	Colourless liquid. Immiscible with water. Toxic if swallowed, by skin contact or by inhalation.	2533
–	–	–	F-D, S-U	Category D SW2	SG4 SG9	Liquefied, flammable, toxic and corrosive colourless gas with a pungent odour. Reacts with water, evolving hydrogen chloride, an irritating and corrosive gas. Heavier than air. Boiling point: 9°C. Highly irritating to skin, eyes and mucous membranes.	2534
–	T7	TP1	F-E, S-C	Category B SW2	–	Colourless liquid with an ammonia-like odour. Flashpoint: 13°C c.c. Miscible with water. Harmful by inhalation. Causes burns to skin and eyes. Irritating to mucous membranes.	2535
–	T4	TP1	F-E, S-D	Category B	–	Colourless, volatile liquid with an ether-like odour. Flashpoint: –11°C o.c. Immiscible with water.	2536
–	T1	TP33	F-A, S-G	Category A	–	Yellow crystals. Insoluble in water. Harmful if swallowed.	2538
–	T2	TP1	F-E, S-E	Category A	–	Colourless to pale amber liquid with a lemon odour. Flashpoint: 37°C c.c. Immiscible with water.	2541
–	T7	TP2	F-A, S-A	Category A	–	Colourless, combustible liquid with an amine odour. Immiscible with water. When involved in a fire, evolves toxic gases. Toxic if swallowed, by skin contact or by inhalation.	2542
–	–	–	F-G, S-M	Category D H1	SG26	Black amorphous powder. Insoluble in water. Liable to ignite spontaneously in air. Forms explosive mixtures with oxidizing substances.	2545
–	T3	TP33	F-G, S-M	Category D H1	SG26	See entry above.	2545

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						Limited quantities	Excepted quantities	Instructions	Provisions	Instructions	Provisions
(1)	(2) 3.1.2	(3) 2.0	(4) 2.0	(5) 2.0.1.3	(6) 3.3	(7a) 3.4	(7b) 3.5	(8) 4.1.4	(9) 4.1.4	(10) 4.1.4	(11) 4.1.4
2545	HAFNIUM POWDER, DRY	4.2	–	III	223	0	E1	P002 LP02	PP31 L4	IBC08	B4
2546	TITANIUM POWDER, DRY	4.2	–	I	–	0	E0	P404	PP31	–	–
2546	TITANIUM POWDER, DRY	4.2	–	II	–	0	E2	P410	PP31	IBC06	B21
2546	TITANIUM POWDER, DRY	4.2	–	III	223	0	E1	P002 LP02	PP31 L4	IBC08	B4
2547	SODIUM SUPEROXIDE	5.1	–	I	–	0	E0	P503	–	IBC06	B1
2548	CHLORINE PENTAFLUORIDE	2.3	5.1/8	–	–	0	E0	P200	–	–	–
2552	HEXAFLUOROACETONE HYDRATE, LIQUID	6.1	–	II	–	100 mL	E4	P001	–	IBC02	–
2554	METHYLALLYL CHLORIDE	3	–	II	–	1 L	E2	P001	–	IBC02	–
2555	NITROCELLULOSE WITH WATER (not less than 25% water, by mass)	4.1	–	II	28	0	E0	P406	PP31	–	–
2556	NITROCELLULOSE WITH ALCOHOL (not less than 25% alcohol, by mass, and not more than 12.6% nitrogen, by dry mass)	4.1	–	II	28	0	E0	P406	PP31	–	–
2557	NITROCELLULOSE with not more than 12.6% nitrogen, by dry mass, MIXTURE WITH or WITHOUT PLASTICIZER, WITH or WITHOUT PIGMENT	4.1	–	II	241	0	E0	P406	PP31	–	–
2558	EPIBROMOHYDRIN	6.1	3 P	I	–	0	E0	P001	–	–	–
2560	2-METHYLPENTAN-2-OL	3	–	III	–	5 L	E1	P001 LP01	–	IBC03	–
2561	3-METHYL-1-BUTENE	3	–	I	–	0	E3	P001	–	–	–
2564	TRICHLOROACETIC ACID SOLUTION	8	–	II	–	1 L	E2	P001	–	IBC02	–
2564	TRICHLOROACETIC ACID SOLUTION	8	–	III	223	5 L	E1	P001 LP01	–	IBC03	–

UN No.	Portable tanks and bulk containers		EmS	Stowage and handling	Segregation	Properties and observations	UN No.
	Tank instructions	Provisions					
(12)	(13) 4.2.5 4.3	(14) 4.2.5	(15) 5.4.3.2 7.8	(16a) 7.1 7.3–7.7	(16b) 7.2–7.7	(17)	(18)
–	T1	TP33	F-G, S-M	Category D H1	SG26	Black amorphous powder. Insoluble in water. Liable to ignite spontaneously in air. Forms explosive mixtures with oxidizing substances.	2545
–	–	–	F-G, S-M	Category D H1	SG26	Grey powder. Liable to ignite spontaneously in air. Forms explosive mixtures with oxidizing substances.	2546
–	T3	TP33	F-G, S-M	Category D H1	SG26	See entry above.	2546
–	T1	TP33	F-G, S-M	Category D H1	SG26	See entry above.	2546
–	–	–	F-G, S-Q	Category D H1	SG16 SG26 SG35 SG59	Pale yellow coarse powder or granules. Particularly if wetted with small quantities of water, a mixture with combustible material may ignite, following impact or friction. When involved in a fire, or in contact with water or acids, decomposes, evolving oxygen. Highly irritating to skin, eyes and mucous membranes.	2547
–	–	–	F-C, S-W	Category D SW2	SG6 SG19	Non-flammable, toxic and corrosive gas. Forms dense, white, corrosive fumes in moist air. Reacts violently with water, evolving hydrogen fluoride, a toxic, irritating and corrosive gas apparent as white fumes. Corrosive to glass and to most metals. Powerful oxidizing agent which may cause violent fires with combustible materials. Much heavier than air (4.5). Highly irritating to skin, eyes and mucous membranes.	2548
–	T7	TP2	F-A, S-A	Category B SW2	–	Toxic if swallowed, by skin contact or by inhalation.	2552
–	T4	TP1 TP13	F-E, S-D	Category E	–	Colourless to yellowish, volatile liquid with a penetrating odour. Flashpoint: –12°C c.c. Explosive limits: 2.3% to 9.3%. Immiscible with water. When involved in a fire, may evolve highly toxic phosgene gas. Harmful by inhalation. Irritating to skin, eyes and mucous membranes.	2554
–	–	–	F-B, S-J	Category E	SG7 SG30	Desensitized explosive. Nitrocellulose may be granular or in flakes, blocks or fibrous form. When involved in a fire, evolves toxic fumes; in closed compartments, these fumes may form an explosive mixture with air. May form extremely sensitive compounds with heavy metals or their salts.	2555
–	–	–	F-B, S-J	Category D	SG7 SG30	Nitrocellulose may be granular or in flakes, blocks or fibrous form. In case of leakage, flammable vapours are evolved which, in closed compartments, may form explosive mixtures with air. When involved in a fire, evolves toxic fumes; in closed compartments, these fumes may form an explosive mixture with air. Highly explosive when dry. May form extremely sensitive compounds with heavy metals or their salts.	2556
–	–	–	F-B, S-J	Category D	SG7 SG30	Nitrocellulose may be in granular form or in flakes. This product may also contain added pigments. When involved in a fire, evolves toxic fumes; in closed compartments, these fumes may form an explosive mixture with air. Burns extremely rapidly with intense heat radiation. The formulation should be prepared so that it remains homogeneous and does not separate during transport. May form extremely sensitive compounds with heavy metals or their salts.	2557
–	T14	TP2 TP13	F-E, S-D	Category D SW2	–	Flammable liquid. Flashpoint: 56°C c.c. Highly toxic if swallowed, by skin contact or by inhalation.	2558
–	T2	TP1	F-E, S-D	Category A	–	Colourless liquid. Flashpoint: 30°C c.c. Partially miscible with water. Irritating to skin, eyes and mucous membranes.	2560
–	T11	TP2	F-E, S-D	Category E	–	Colourless, volatile liquid with a disagreeable odour. Flashpoint: below –18°C c.c. Immiscible with water. Irritating to skin, eyes and mucous membranes.	2561
–	T7	TP2	F-A, S-B	Category B	–	Colourless, clear solution with a pungent odour. Corrosive to most metals. Causes burns to skin, eyes and mucous membranes.	2564
–	T4	TP1	F-A, S-B	Category B	–	See entry above.	2564

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						Limited quantities	Excepted quantities	Instructions	Provisions	Instructions	Provisions
(1)	(2) 3.1.2	(3) 2.0	(4) 2.0	(5) 2.0.1.3	(6) 3.3	(7a) 3.4	(7b) 3.5	(8) 4.1.4	(9) 4.1.4	(10) 4.1.4	(11) 4.1.4
2565	DICYCLOHEXYLAMINE	8	–	III	–	5 L	E1	P001 LP01	–	IBC03	–
2567	SODIUM PENTACHLOROPHENATE	6.1	– P	II	–	500 g	E4	P002	–	IBC08	B4 B21
2570	CADMIUM COMPOUND	6.1	–	I	274	0	E5	P002	–	IBC07	B1
2570	CADMIUM COMPOUND	6.1	–	II	274	500 g	E4	P002	–	IBC08	B4 B21
2570	CADMIUM COMPOUND	6.1	–	III	223 274	5 kg	E1	P002 LP02	–	IBC08	B3
2571	ALKYLSULPHURIC ACIDS	8	–	II	–	1 L	E2	P001	–	IBC02	–
2572	PHENYLHYDRAZINE	6.1	–	II	–	100 mL	E4	P001	–	IBC02	–
2573	THALLIUM CHLORATE	5.1	6.1 P	II	–	1 kg	E2	P002	–	IBC06	B21
2574	TRICRESYL PHOSPHATE with more than 3% <i>ortho</i> -isomer	6.1	– P	II	–	100 mL	E4	P001	–	IBC02	–
2576	PHOSPHORUS OXYBROMIDE, MOLTEN	8	–	II	–	0	E0	–	–	–	–
2577	PHENYLACETYL CHLORIDE	8	–	II	–	1 L	E2	P001	–	IBC02	–
2578	PHOSPHORUS TRIOXIDE	8	–	III	–	5 kg	E1	P002 LP02	–	IBC08	B3
2579	PIPERAZINE	8	–	III	–	5 kg	E1	P002 LP02	–	IBC08	B3
2580	ALUMINIUM BROMIDE SOLUTION	8	–	III	223	5 L	E1	P001 LP01	–	IBC03	–
2581	ALUMINIUM CHLORIDE SOLUTION	8	–	III	223	5 L	E1	P001 LP01	–	IBC03	–
2582	FERRIC CHLORIDE SOLUTION	8	–	III	223	5 L	E1	P001 LP01	–	IBC03	–

UN No.	Portable tanks and bulk containers		EmS	Stowage and handling	Segregation	Properties and observations	UN No.
	Tank instructions	Provisions					
(12)	(13) 4.2.5 4.3	(14) 4.2.5	(15) 5.4.3.2 7.8	(16a) 7.1 7.3–7.7	(16b) 7.2–7.7	(17)	(18)
–	T4	TP1	F-A, S-B	Category A	–	Clear, colourless, combustible liquid with a fishy odour which may taint other cargoes. Immiscible with water. Causes burns to skin, eyes and mucous membranes.	2565
–	T3	TP33	F-A, S-A	Category A	–	White or light brown powder with a pungent odour. Soluble in water. Toxic if swallowed, by skin contact or by dust inhalation.	2567
–	T6	TP33	F-A, S-A	Category A	–	Powder or crystals with various colours. May be soluble or insoluble in water. Toxic if swallowed, by skin contact or by dust inhalation.	2570
–	T3	TP33	F-A, S-A	Category A	–	See entry above.	2570
–	T1	TP33	F-A, S-A	Category A	–	See entry above.	2570
–	T8	TP2 TP13 TP28	F-A, S-B	Category C SW15	–	Colourless oily liquids. React with water, evolving heat. Cause burns to skin, eyes and mucous membranes. Highly corrosive to metal.	2571
–	T7	TP2	F-A, S-A	Category A SW2	–	Pale yellow oily liquid. Melting point: 20°C. Slightly soluble in water. Toxic if swallowed, by skin contact or by inhalation.	2572
–	T3	TP33	F-H, S-Q	Category A	SG38 SG49	Colourless crystals. Slightly soluble in water. Reacts vigorously with sulphuric acid. Reacts fiercely with cyanides when heated or by friction. May form explosive mixtures with combustible material, powdered metals or ammonium compounds. These mixtures are sensitive to friction and are liable to ignite. When involved in a fire, may cause an explosion. Toxic if swallowed, by skin contact or by dust inhalation.	2573
–	T7	TP2	F-A, S-A	Category A	–	Colourless liquid. A mixture of isomers. Immiscible with water. Toxic if swallowed, by skin contact or by inhalation.	2574
–	T7	TP3 TP13	F-A, S-B	Category C SW2	–	Colourless liquid with a pungent odour. Melting point: 56°C. Reacts violently with water, evolving hydrogen bromide, a toxic and corrosive gas apparent as white fumes. Reacts violently with organic materials (such as wood, cotton, straw), causing fire. When involved in a fire, evolves highly toxic and corrosive gases. In the presence of moisture, highly corrosive to most metals. Vapours and liquid cause burns to skin, eyes and mucous membranes. Shipped molten above its melting point.	2576
–	T7	TP2	F-A, S-B	Category C SW2	–	Colourless liquid with a pungent odour. Reacts with water, evolving hydrogen chloride, an irritating and corrosive gas apparent as white fumes. When involved in a fire, evolves highly toxic fumes. Corrosive to most metals. Vapour irritates eyes and mucous membranes. Liquid is corrosive to skin, eyes and mucous membranes.	2577
–	T1	TP33	F-A, S-B	Category A SW1 H2	–	Colourless crystals or white deliquescent powder. Melting point: 23°C. Reacts with water, evolving heat and at normal temperatures phosphoric acid, but at higher temperatures phosphine, a highly toxic gas. In the presence of moisture, corrosive to most metals. Causes burns to skin, eyes and mucous membranes.	2578
–	T1	TP33	F-A, S-B	Category A SW1 H2	SG35	Colourless, deliquescent crystals, turning dark on exposure to light. Soluble in water. Decomposes when heated and when involved in a fire, evolving highly toxic nitrous fumes. The solution in water is a strong base and is highly corrosive. Reacts violently with acids. Irritating to skin, eyes and mucous membranes.	2579
–	T4	TP1	F-A, S-B	Category A	–	Colourless to yellowish liquid. Highly corrosive to most metals. Vapour highly irritating to skin, eyes and mucous membranes. Liquid causes severe burns to skin, eyes and mucous membranes.	2580
–	T4	TP1	F-A, S-B	Category A	–	Colourless to yellowish liquid. Highly corrosive to most metals. Vapour highly irritating to skin, eyes and mucous membranes. Liquid causes severe burns to skin, eyes and mucous membranes.	2581
–	T4	TP1	F-A, S-B	Category A	–	Colourless to light brown liquid. Highly corrosive to most metals.	2582

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						Limited quantities	Excepted quantities	Instructions	Provisions	Instructions	Provisions
(1)	(2) 3.1.2	(3) 2.0	(4) 2.0	(5) 2.0.1.3	(6) 3.3	(7a) 3.4	(7b) 3.5	(8) 4.1.4	(9) 4.1.4	(10) 4.1.4	(11) 4.1.4
2583	ALKYLSULPHONIC ACIDS, SOLID or ARYLSULPHONIC ACIDS, SOLID with more than 5% free sulphuric acid	8	–	II	–	1 kg	E2	P002	–	IBC08	B4 B21
2584	ALKYLSULPHONIC ACIDS, LIQUID or ARYLSULPHONIC ACIDS, LIQUID with more than 5% free sulphuric acid	8	–	II	–	1 L	E2	P001	–	IBC02	B20
2585	ALKYLSULPHONIC ACIDS, SOLID or ARYLSULPHONIC ACIDS, SOLID with not more than 5% free sulphuric acid	8	–	III	–	5 kg	E1	P002 LP02	–	IBC08	B3
2586	ALKYLSULPHONIC ACIDS, LIQUID or ARYLSULPHONIC ACIDS, LIQUID with not more than 5% free sulphuric acid	8	–	III	–	5 L	E1	P001 LP01	–	IBC03	–
2587	BENZOQUINONE	6.1	–	II	–	500 g	E4	P002	–	IBC08	B4 B21
2588	PESTICIDE, SOLID, TOXIC, N.O.S.	6.1	–	I	61 274	0	E5	P002	–	IBC99	–
2588	PESTICIDE, SOLID, TOXIC, N.O.S.	6.1	–	II	61 274	500 g	E4	P002	–	IBC08	B4 B21
2588	PESTICIDE, SOLID, TOXIC, N.O.S.	6.1	–	III	61 223 274	5 kg	E1	P002 LP02	–	IBC08	B3
2589	VINYL CHLOROACETATE	6.1	3	II	–	100 mL	E4	P001	–	IBC02	–
2590	ASBESTOS, CHRYSOTILE	9	–	III	168	5 kg	E1	P002	PP37	IBC08	B3 B21
2591	XENON, REFRIGERATED LIQUID	2.2	–	–	–	120 mL	E1	P203	–	–	–
2599	CHLOROTRIFLUOROMETHANE AND TRIFLUOROMETHANE AZEOTROPIC MIXTURE with approximately 60% chlorotrifluoromethane (REFRIGERANT GAS R 503)	2.2	–	–	–	120 mL	E1	P200	–	–	–
2601	CYCLOBUTANE	2.1	–	–	–	0	E0	P200	–	–	–

(12)	Portable tanks and bulk containers		EmS	Stowage and handling	Segregation	Properties and observations	UN No.
	Tank instructions	Provisions					
(13) 4.2.5 4.3	(14) 4.2.5	(15) 5.4.3.2 7.8	(16a) 7.1 7.3–7.7	(16b) 7.2–7.7	(17)	(18)	
–	T3	TP33	F-A, S-B	Category A	–	When involved in a fire, evolve highly toxic gases. Corrosive to most metals, especially in the presence of moisture. Cause burns to skin, eyes and mucous membranes.	2583
–	T8	TP2 TP13	F-A, S-B	Category B	–	Liquids usually with a pungent odour. When involved in a fire, evolve highly toxic gases. Highly corrosive to most metals. Cause burns to skin, eyes and mucous membranes.	2584
–	T1	TP33	F-A, S-B	Category A	–	Crystalline solids. When involved in a fire, evolve highly toxic gases. In the presence of moisture, corrosive to most metals. Cause burns to skin, eyes and mucous membranes.	2585
–	T4	TP1	F-A, S-B	Category B	–	Liquids usually with a pungent odour. When involved in a fire, evolve highly toxic gases. Corrosive to most metals. Cause burns to skin, eyes and mucous membranes.	2586
–	T3	TP33	F-A, S-A	Category A	–	Yellow crystals with an irritating and penetrating odour resembling that of chlorine. Slightly soluble in water. Toxic if swallowed, by skin contact or by dust inhalation.	2587
–	T6	TP33	F-A, S-A	Category A SW2	–	Solid pesticides present a very wide range of toxic hazard. Toxic if swallowed, by skin contact or by inhalation.	2588
–	T3	TP33	F-A, S-A	Category A SW2	–	See entry above.	2588
–	T1	TP33	F-A, S-A	Category A SW2	–	See entry above.	2588
–	T7	TP2	F-E, S-D	Category A	–	Flammable liquid. Flashpoint: 50°C c.c. Immiscible with water. Toxic if swallowed, by skin contact or by inhalation.	2589
–	T1	TP33	F-A, S-A	Category A SW2 H4	SG29	Mineral fibres of varying length. Non-combustible. Inhalation of the dust of asbestos fibres is dangerous and therefore exposure should be avoided at all times. Always prevent the generation of asbestos dust. A safe level of airborne concentration of asbestos fibres may be obtained through effective packing. Cargo spaces or freight containers that have contained any type of raw asbestos should be carefully cleaned before discharging any remaining cargo, loading other cargo or carrying out repair or maintenance work. Whenever possible, cleaning of cargo spaces should be carried out whilst the ship is in a port where proper facilities and equipment, including proper respiratory apparatus and protective clothing, are available. Parts of the body that may have been exposed should be immediately and thoroughly washed. All waste material should be collected in impermeable and sealed bags for safe disposal ashore. If cleaning cannot be carried out at the discharge port, arrangements should be made in advance for cleaning to be carried out at the next port where necessary facilities are available.	2590
–	T75	TP5	F-C, S-V	Category D	–	Liquefied, inert, colourless and odourless gas. Much heavier than air (4.5).	2591
–	–	–	F-C, S-V	Category A	–	Non-flammable, colourless gas with a mild ethereal odour. Much heavier than air (3.2).	2599
–	–	–	F-D, S-U	Category B SW2	–	Liquefied, flammable, colourless gas. Explosive limits: 1.8% to 10%. Heavier than air (1.9). Boiling point: 13°C.	2601

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						Limited quantities	Excepted quantities	Instructions	Provisions	Instructions	Provisions
(1)	(2) 3.1.2	(3) 2.0	(4) 2.0	(5) 2.0.1.3	(6) 3.3	(7a) 3.4	(7b) 3.5	(8) 4.1.4	(9) 4.1.4	(10) 4.1.4	(11) 4.1.4
2602	DICHLORODIFLUORO-METHANE AND DIFLUOROETHANE AZEOTROPIC MIXTURE with approximately 74% dichlorodifluoromethane (REFRIGERANT GAS R 500)	2.2	-	-	-	120 mL	E1	P200	-	-	-
2603	CYCLOHEPTATRIENE	3	6.1	II	-	1 L	E2	P001	-	IBC02	-
2604	BORON TRIFLUORIDE DIETHYL ETHERATE	8	3	I	-	0	E0	P001	PP31	-	-
2605	METHOXYMETHYL ISOCYANATE	6.1	3	I	354	0	E0	P602	-	-	-
2606	METHYL ORTHOSILICATE	6.1	3	I	354	0	E0	P602	-	-	-
2607	ACROLEIN DIMER, STABILIZED	3	-	III	386	5 L	E1	P001 LP01	-	IBC03	-
2608	NITROPROPANES	3	-	III	-	5 L	E1	P001 LP01	-	IBC03	-
2609	TRIALLYL BORATE	6.1	-	III	-	5 L	E1	P001 LP01	-	IBC03	-
2610	TRIALLYLAMINE	3	8	III	-	5 L	E1	P001	-	IBC03	-
2611	PROPYLENE CHLOROHYDRIN	6.1	3	II	-	100 mL	E4	P001	-	IBC02	-
2612	METHYL PROPYL ETHER	3	-	II	-	1 L	E2	P001	-	IBC02	B8
2614	METHALLYL ALCOHOL	3	-	III	-	5 L	E1	P001 LP01	-	IBC03	-
2615	ETHYL PROPYL ETHER	3	-	II	-	1 L	E2	P001	-	IBC02	-
2616	TRIISOPROPYL BORATE	3	-	II	-	1 L	E2	P001	-	IBC02	-
2616	TRIISOPROPYL BORATE	3	-	III	223	5 L	E1	P001 LP01	-	IBC03	-
2617	METHYLCYCLOHEXANOLS, flammable	3	-	III	-	5 L	E1	P001 LP01	-	IBC03	-

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	Tank instructions	Provisions					
(12)	(13) 4.2.5 4.3	(14) 4.2.5	(15) 5.4.3.2 7.8	(16a) 7.1 7.3-7.7	(16b) 7.2-7.7	(17)	(18)
-	T50	-	F-C, S-V	Category A	-	Non-flammable, colourless and odourless gas. Much heavier than air (3.7).	2602
-	T7	TP1 TP13	F-E, S-D	Category E SW2	-	Colourless to dark yellow liquid with a characteristic odour. Flashpoint: 0°C to 4°C c.c. Immiscible with water. Reacts vigorously with oxidizing substances. Toxic if swallowed, by skin contact or by inhalation.	2603
-	T10	TP2	F-E, S-C	Category D SW2	-	Colourless fuming flammable liquid. Flashpoint: 59°C c.c. The flashpoint will be lower when free ether is present. Reacts vigorously with oxidizing substances. Decomposes in contact with water, evolving toxic, corrosive and flammable vapours. Causes burns to skin, eyes and mucous membranes. Inhalation of small quantities of vapour can cause breathing difficulties.	2604
-	T20	TP2 TP13 TP37	F-E, S-D	Category D SW2	-	Colourless liquid with a pungent odour. Flashpoint: 13°C c.c. Immiscible with water. Highly toxic if swallowed, by skin contact or by inhalation. Irritating to skin, eyes and mucous membranes.	2605
-	T20	TP2 TP13 TP37	F-E, S-D	Category D SW2	-	Colourless, flammable liquid with an ethereal odour. Immiscible with water. Flashpoint: -18°C to 19°C c.c. Highly toxic if swallowed, by skin contact or by inhalation. May cause blindness.	2606
-	T2	TP1	F-E, S-D	Category C SW1 SW2	-	Colourless liquid with a pungent odour. Flashpoint: 48°C o.c. Miscible with water. Harmful by inhalation. Irritating to skin, eyes and mucous membranes.	2607
-	T2	TP1	F-E, S-D	Category A	-	Colourless liquids. Explosive limits: 2.2% to 11%. 1-NITROPROPANE: flashpoint approx. 33°C c.c. 2-NITROPROPANE: flashpoint approx. 28°C c.c. Partially miscible with water. Harmful by inhalation.	2608
-	-	-	F-A, S-A	Category A H1	-	Liquid. Hydrolyses in contact with water, forming allyl alcohol. Toxic if swallowed, by skin contact or by inhalation.	2609
-	T4	TP1	F-E, S-C	Category A SW2	-	Colourless liquid with a fishy odour. Flashpoint: 39°C o.c. Corrosive when in contact with water. Harmful by inhalation. Causes burns to skin and eyes. Irritating to mucous membranes.	2610
-	T7	TP2 TP13	F-E, S-D	Category A SW1 SW2 H2	-	Colourless flammable liquid with a mild odour. Flashpoint: 51°C c.c. Miscible with water. Decomposes when heated, evolving highly toxic fumes. Toxic if swallowed, by skin contact or by inhalation.	2611
-	T7	TP2	F-E, S-D	Category E SW2	-	Colourless, volatile liquid with an ethereal odour. Flashpoint: below -18°C c.c. Explosive limits: 2% to . . . Boiling point: 39°C. Partially miscible with water. Narcotic. Irritating to skin, eyes and mucous membranes.	2612
-	T2	TP1	F-E, S-D	Category A	-	Colourless liquid with a pungent odour. Flashpoint: 34°C c.c. Miscible with water. Irritating to skin, eyes and mucous membranes.	2614
-	T4	TP1	F-E, S-D	Category E	-	Colourless, volatile liquids. Flashpoint: below -18°C c.c. Explosive limits: 1.7% to 9.0%. Miscible with water. Irritating to skin, eyes and mucous membranes.	2615
-	T4	TP1	F-E, S-D	Category B	-	Colourless liquid. Flashpoint: 17°C to 60°C c.c. Reacts with water, evolving flammable vapours.	2616
-	T2	TP1	F-E, S-D	Category A	-	See entry above.	2616
-	T2	TP1	F-E, S-D	Category A	-	Colourless, viscous liquid with a menthol-like odour. Flashpoint: 58°C c.c. Partially miscible with water.	2617

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						Limited quantities	Excepted quantities	Instructions	Provisions	Instructions	Provisions
(1)	(2) 3.1.2	(3) 2.0	(4) 2.0	(5) 2.0.1.3	(6) 3.3	(7a) 3.4	(7b) 3.5	(8) 4.1.4	(9) 4.1.4	(10) 4.1.4	(11) 4.1.4
2618	VINYLTOLUENES, STABILIZED	3	–	III	386	5 L	E1	P001 LP01	–	IBC03	–
2619	BENZYL DIMETHYLAMINE	8	3	II	–	1 L	E2	P001	–	IBC02	–
2620	AMYL BUTYRATES	3	–	III	–	5 L	E1	P001 LP01	–	IBC03	–
2621	ACETYL METHYL CARBINOL	3	–	III	–	5 L	E1	P001 LP01	–	IBC03	–
2622	GLYCIDALDEHYDE	3	6.1	II	–	1 L	E2	P001	–	IBC02	B8
2623	FIRELIGHTERS, SOLID with flammable liquid	4.1	–	III	–	5 kg	E1	P002 LP02	PP15	–	–
2624	MAGNESIUM SILICIDE	4.3	–	II	–	500 g	E2	P410	PP31 PP40	IBC07	B4 B21
2626	CHLORIC ACID, AQUEOUS SOLUTION with not more than 10% chloric acid	5.1	–	II	900	1 L	E0	P504	PP31	IBC02	–
2627	NITRITES, INORGANIC, N.O.S.	5.1	–	II	274 900	1 kg	E2	P002	–	IBC08	B4 B21
2628	POTASSIUM FLUOROACETATE	6.1	–	I	–	0	E5	P002	–	IBC07	B1
2629	SODIUM FLUOROACETATE	6.1	–	I	–	0	E5	P002	–	IBC07	B1
2630	SELENATES or SELENITES	6.1	–	I	274	0	E5	P002	–	IBC07	B1
2642	FLUOROACETIC ACID	6.1	–	I	–	0	E5	P002	–	IBC07	B1
2643	METHYL BROMOACETATE	6.1	–	II	–	100 mL	E4	P001	–	IBC02	–
2644	METHYL IODIDE	6.1	–	I	354	0	E0	P602	–	–	–
2645	PHENACYL BROMIDE	6.1	–	II	–	500 g	E4	P002	–	IBC08	B4 B21
2646	HEXACHLOROCYCLO-PENTADIENE	6.1	–	I	354	0	E0	P602	–	–	–

UN No.	Portable tanks and bulk containers		EmS	Stowage and handling	Segregation	Properties and observations	UN No.
	Tank instructions	Provisions					
(12)	(13) 4.2.5 4.3	(14) 4.2.5	(15) 5.4.3.2 7.8	(16a) 7.1 7.3–7.7	(16b) 7.2–7.7	(17)	(18)
–	T2	TP1	F-E, S-D	Category C SW1	–	Colourless liquids. Flashpoint: 54°C to 60°C c.c. Explosive limits: 0.9% to 6.1%. Partially miscible with water. Harmful by inhalation. Irritating to skin, eyes and mucous membranes.	2618
–	T7	TP2	F-E, S-C	Category A SW1 SW2	–	Colourless, flammable liquid with an aromatic odour. Flashpoint: 58°C c.c. Immiscible with water. Harmful if swallowed, by skin contact or by inhalation. Corrosive to skin, eyes and mucous membranes.	2619
–	T2	TP1	F-E, S-D	Category A	–	Colourless liquids. Flashpoint: 52°C to 58°C c.c. Partially miscible with water.	2620
–	T2	TP1	F-E, S-D	Category A	–	Yellow liquid with a pleasant odour. Flashpoint: 44°C to 52°C c.c. Miscible with water. Reacts vigorously with oxidizing substances. Irritating to skin, eyes and mucous membranes.	2621
–	T7	TP1	F-E, S-D	Category A SW2	–	Colourless liquid with a pungent odour. Flashpoint: 31°C o.c. Miscible with water. Toxic by inhalation. Irritating to skin, eyes and mucous membranes.	2622
–	–	–	F-A, S-I	Category A	SG35	A porous solid, e.g. cellular urea-formaldehyde resin, compacted wood shavings, etc., impregnated with flammable liquid, usually white spirit or kerosene, and designed to burn in a controlled manner. When heated, evolves flammable vapours.	2623
–	T3	TP33	F-G, S-O	Category B SW5 H1	SG26	White powder or crystals. Reacts with water or steam, evolving hydrogen, a flammable gas. In contact with acids, evolves silane, a spontaneously flammable gas.	2624
–	–	–	F-A, S-Q	Category D	SG38 SG49	Colourless liquid. May decompose, evolving chlorine and oxygen with toxic, corrosive and oxidizing effects. May form explosive mixtures with ammonium compounds, combustible material or powdered metals. Corrosive to most metals. Transport of CHLORIC ACID, AQUEOUS SOLUTION with more than 10% chloric acid is prohibited.	2626
–	T3	TP33	F-A, S-Q	Category A	SG38 SG49 SG62	Solids. Solid mixtures with combustible material are readily ignited and may burn fiercely. Solid mixtures with ammonium compounds or cyanides may explode. If heated, may decompose, giving off toxic nitrous fumes. Harmful if swallowed. Transport of AMMONIUM NITRITES and mixtures of an inorganic nitrite with an ammonium salt is prohibited.	2627
–	T6	TP33	F-A, S-A	Category E	–	Solid. Soluble in water. Highly toxic if swallowed, by skin contact or by dust inhalation.	2628
–	T6	TP33	F-A, S-A	Category E	–	White powder. Soluble in water. Highly toxic if swallowed, by skin contact or by dust inhalation.	2629
–	T6	TP33	F-A, S-A	Category E	–	A wide range of toxic solids. Generally soluble in water. Highly toxic if swallowed, by skin contact or by dust inhalation.	2630
–	T6	TP33	F-A, S-A	Category E	–	Colourless crystals. Melting point: 33°C. Soluble in water. Highly toxic if swallowed, by skin contact or by dust inhalation.	2642
–	T7	TP2	F-A, S-A	Category D SW2	–	Colourless to straw-coloured liquid. Slightly miscible with water. Causes tears. Toxic if swallowed, by skin contact or by inhalation.	2643
–	T20	TP2 TP13 TP37	F-A, S-A	Category D SW1 SW2 H2	–	Colourless liquid. Boiling point: 42°C to 43°C. Slightly miscible with water. When heated, evolves toxic fumes. Highly toxic if swallowed, by skin contact or by inhalation. Has strong narcotic effects.	2644
–	T3	TP33	F-A, S-A	Category B SW2	–	White crystals changing to a greenish colour under the influence of light. Melting point: 50°C. Insoluble in water. Causes tears. Toxic if swallowed, by skin contact or by inhalation.	2645
–	T20	TP2 TP13 TP35	F-A, S-A	Category D SW2	–	Pale yellow liquid with a pungent odour. Immiscible with water. Causes tears. Highly toxic if swallowed, by skin contact or by inhalation.	2646

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						Limited quantities	Excepted quantities	Instructions	Provisions	Instructions	Provisions
(1)	(2) 3.1.2	(3) 2.0	(4) 2.0	(5) 2.0.1.3	(6) 3.3	(7a) 3.4	(7b) 3.5	(8) 4.1.4	(9) 4.1.4	(10) 4.1.4	(11) 4.1.4
2647	MALONONITRILE	6.1	–	II	–	500 g	E4	P002	–	IBC08	B4 B21
2648	1,2-DIBROMOBUTAN-3-ONE	6.1	–	II	–	100 mL	E4	P001	–	IBC02	–
2649	1,3-DICHLOROACETONE	6.1	–	II	–	500 g	E4	P002	–	IBC08	B4 B21
2650	1,1-DICHLORO-1-NITRO-ETHANE	6.1	–	II	–	100 mL	E4	P001	–	IBC02	–
2651	4,4'-DIAMINODIPHENYL-METHANE	6.1	– P	III	–	5 kg	E1	P002 LP02	–	IBC08	B3
2653	BENZYL IODIDE	6.1	–	II	–	100 mL	E4	P001	–	IBC02	–
2655	POTASSIUM FLUOROSILICATE	6.1	–	III	–	5 kg	E1	P002 LP02	–	IBC08	B3
2656	QUINOLINE	6.1	–	III	–	5 L	E1	P001 LP01	–	IBC03	–
2657	SELENIUM DISULPHIDE	6.1	–	II	–	500 g	E4	P002	–	IBC08	B4 B21
2659	SODIUM CHLOROACETATE	6.1	–	III	–	5 kg	E1	P002 LP02	–	IBC08	B3
2660	NITROTOLUIDINES (MONO)	6.1	–	III	–	5 kg	E1	P002 LP02	–	IBC08	B3
2661	HEXACHLOROACETONE	6.1	–	III	–	5 L	E1	P001 LP01	–	IBC03	–
2664	DIBROMOMETHANE	6.1	–	III	–	5 L	E1	P001 LP01	–	IBC03	–
2667	BUTYLTOLUENES	6.1	–	III	–	5 L	E1	P001 LP01	–	IBC03	–
2668	CHLOROACETONITRILE	6.1	3	I	354	0	E0	P602	–	–	–
2669	CHLOROCRESOLS SOLUTION	6.1	–	II	–	100 mL	E4	P001	–	IBC02	–
2669	CHLOROCRESOLS SOLUTION	6.1	–	III	223	5 L	E1	P001 LP01	–	IBC03	–
2670	CYANURIC CHLORIDE	8	–	II	–	1 kg	E2	P002	–	IBC08	B4 B21

UN No.	Portable tanks and bulk containers		EmS	Stowage and handling	Segregation	Properties and observations	UN No.
	Tank instructions	Provisions					
(12)	(13) 4.2.5 4.3	(14) 4.2.5	(15) 5.4.3.2 7.8	(16a) 7.1 7.3–7.7	(16b) 7.2–7.7	(17)	(18)
–	T3	TP33	F-A, S-A	Category A SW1 H2	–	Colourless crystals. Melting point: 32°C. Soluble in water. When heated, evolves highly toxic cyanogen fumes. Toxic if swallowed, by skin contact or by dust inhalation.	2647
–	–	–	F-A, S-A	Category B SW2	–	Liquid. Immiscible with water. Toxic if swallowed, by skin contact or by inhalation. Causes tears.	2648
–	T3	TP33	F-A, S-A	Category B SW1 SW2 H2	–	Crystals. Melting point: 45°C. Soluble in water. Decomposes when heated, evolving highly toxic fumes. Toxic if swallowed, by skin contact or by dust inhalation. Causes tears.	2649
–	T7	TP2	F-A, S-A	Category A SW1 SW2 H2	SG17	Liquid. Immiscible with water. May react vigorously with oxidizing substances. Decomposes when heated, evolving highly toxic fumes (oxides of nitrogen). Toxic if swallowed, by skin contact or by inhalation.	2650
–	T1	TP33	F-A, S-A	Category A	–	Tan-coloured flakes or lumps. Slightly soluble in water. Decomposes when heated, evolving highly toxic fumes. Toxic if swallowed, by skin contact or by dust inhalation. May be carried in the molten state.	2651
–	T7	TP2	F-A, S-A	Category B SW1 SW2 H2	–	Colourless crystals. Melting point: 24°C. Insoluble in water. Toxic if swallowed, by skin contact or by dust inhalation. Causes tears.	2653
–	T1	TP33	F-A, S-A	Category A	SG35	Solids which react with acids, evolving hydrogen fluoride and silicon tetrafluoride, irritating and corrosive gases. Toxic if swallowed, by skin contact or by dust inhalation.	2655
–	T4	TP1	F-A, S-A	Category A SW1 H2	–	Colourless liquid with a pungent odour. Immiscible with water. When heated, evolves highly toxic fumes (of oxides of nitrogen). Toxic if swallowed, by skin contact or by inhalation.	2656
–	T3	TP33	F-A, S-A	Category A	–	Bright red-yellow crystals with a faint odour. Insoluble in water. Toxic if swallowed, by skin contact or by inhalation.	2657
–	T1	TP33	F-A, S-A	Category A	–	White powder. Soluble in water. Toxic if swallowed, by skin contact or by dust inhalation.	2659
–	T1	TP33	F-A, S-A	Category A	–	Yellow to orange-red crystalline solids. Insoluble in water. Toxic if swallowed, by skin contact or by dust inhalation.	2660
–	T4	TP1	F-A, S-A	Category B SW1 SW2 H2	–	Colourless to yellowish liquid. Slightly miscible with water. When heated, evolves extremely toxic fumes (phosgene). Causes tears. Toxic if swallowed, by skin contact or by inhalation.	2661
–	T4	TP1	F-A, S-A	Category A	–	Clear, colourless liquid. Immiscible with water. Toxic if swallowed, by skin contact or by inhalation.	2664
–	T4	TP1	F-A, S-A	Category A	–	Colourless liquids. Immiscible with water. Toxic if swallowed, by skin contact or by inhalation.	2667
–	T20	TP2 TP13 TP37	F-A, S-A	Category D SW1 SW2 H2	SG35	Colourless flammable liquid with a pungent odour. Flashpoint: 56°C c.c. Immiscible with water. Decomposes when heated, evolving highly toxic fumes of cyanides. Reacts with steam and acids, evolving toxic and flammable vapours. Highly toxic if swallowed, by skin contact or by inhalation.	2668
–	T7	TP2	F-A, S-A	Category A SW1 H2	–	Solutions with a phenol-like odour. Slightly miscible with water. Decompose when heated, evolving extremely toxic fumes (phosgene). Toxic if swallowed, by skin contact or by inhalation.	2669
–	T7	TP2	F-A, S-A	Category A SW1 H2	–	See entry above.	2669
–	T3	TP33	F-A, S-B	Category A SW1 SW2 H2	–	Colourless crystals with a pungent odour. Reacts with water, forming toxic and corrosive acids. Decomposes when heated, evolving toxic and corrosive gases. Causes burns to skin, eyes and mucous membranes.	2670

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UN No.	Proper shipping name (PSN)	Class or division	Subsidiary risk(s)	Packing group	Special provisions	Limited and excepted quantity provisions		Packing		IBC	
						Limited quantities (7a)	Excepted quantities (7b)	Instructions (8)	Provisions (9)	Instructions (10)	Provisions (11)
(1)	(2) 3.1.2	(3) 2.0	(4) 2.0	(5) 2.0.1.3	(6) 3.3	(7a) 3.4	(7b) 3.5	(8) 4.1.4	(9) 4.1.4	(10) 4.1.4	(11) 4.1.4
2671	AMINOPYRIDINES (o-, m-, p-)	6.1	-	II	-	500 g	E4	P002	-	IBC08	B4 B21
2672	AMMONIA SOLUTION relative density between 0.880 and 0.957 at 15°C in water, with more than 10% but not more than 35% ammonia	8	- P	III	-	5 L	E1	P001 LP01	-	IBC03	B11
2673	2-AMINO-4-CHLOROPHENOL	6.1	-	II	-	500 g	E4	P002	-	IBC08	B4 B21
2674	SODIUM FLUOROSILICATE	6.1	-	III	-	5 kg	E1	P002 LP02	-	IBC08	B3
2676	STIBINE	2.3	2.1	-	-	0	E0	P200	-	-	-
2677	RUBIDIUM HYDROXIDE SOLUTION	8	-	II	-	1 L	E2	P001	-	IBC02	-
2677	RUBIDIUM HYDROXIDE SOLUTION	8	-	III	223	5 L	E1	P001 LP01	-	IBC03	-
2678	RUBIDIUM HYDROXIDE	8	-	II	-	1 kg	E2	P002	-	IBC08	B4 B21
2679	LITHIUM HYDROXIDE SOLUTION	8	-	II	-	1 L	E2	P001	-	IBC02	-
2679	LITHIUM HYDROXIDE SOLUTION	8	-	III	223	5 L	E1	P001 LP01	-	IBC03	-
2680	LITHIUM HYDROXIDE	8	-	II	-	1 kg	E2	P002	-	IBC08	B4 B21
2681	CAESIUM HYDROXIDE SOLUTION	8	-	II	-	1 L	E2	P001	-	IBC02	-
2681	CAESIUM HYDROXIDE SOLUTION	8	-	III	223	5 L	E1	P001 LP01	-	IBC03	-
2682	CAESIUM HYDROXIDE	8	-	II	-	1 kg	E2	P002	-	IBC08	B4 B21
2683	AMMONIUM SULPHIDE SOLUTION	8	3/6.1	II	-	1 L	E2	P001	-	IBC01	-
2684	3-DIETHYLAMINO-PROPYLAMINE	3	8	III	-	5 L	E1	P001	-	IBC03	-
2685	N,N-DIETHYLETHYLENE-DIAMINE	8	3	II	-	1 L	E2	P001	-	IBC02	-
2686	2-DIETHYLAMINOETHANOL	8	3	II	-	1 L	E2	P001	-	IBC02	-

UN No.	Portable tanks and bulk containers		EmS	Stowage and handling	Segregation	Properties and observations	UN No.
	Tank instructions (12)	Provisions (14)					
(1)	(13) 4.2.5 4.3	(14) 4.2.5	(15) 5.4.3.2 7.8	(16a) 7.1 7.3-7.7	(16b) 7.2-7.7	(17)	(18)
2671	T3	TP33	F-A, S-A	Category B SW1 SW2 H2	SG35	White powder or crystals. Melting points: 58°C to 64°C. Soluble in water. Reacts violently with acids. Toxic if swallowed, by skin contact or by dust inhalation.	2671
2672	T7	TP2	F-A, S-B	Category A SW2 SW5	SG35	Colourless liquid with a pungent odour. Corrosive to copper, nickel, zinc and tin and their alloys such as brass. Not significantly corrosive to iron and steel. Reacts violently with acids. Liquid and vapour cause burns to skin, eyes and mucous membranes.	2672
2673	T3	TP33	F-A, S-A	Category A	-	Light brown crystals. Slightly soluble in water. Toxic if swallowed, by skin contact or by dust inhalation.	2673
2674	T1	TP33	F-A, S-A	Category A	SG35	Solids which react with acids, evolving hydrogen fluoride and silicon tetrafluoride, irritating and corrosive gases. Toxic if swallowed, by skin contact or by dust inhalation.	2674
2676	-	-	F-D, S-U	Category D SW2	-	Flammable, toxic, colourless gas with a foul odour. Decomposes violently in the presence of water. Much heavier than air (4.3).	2676
2677	T7	TP2	F-A, S-B	Category A	SG22 SG35	Liquid. Reacts violently with acids. Reacts with ammonium salts, evolving ammonia gas. Corrosive to aluminium, zinc and tin. Causes burns to skin, eyes and mucous membranes.	2677
2677	T4	TP1	F-A, S-B	Category A	SG22 SG35	See entry above.	2677
2678	T3	TP33	F-A, S-B	Category A	SG22 SG35	Greyish-white solid, very hygroscopic. Reacts violently with acids. Reacts with ammonium salts, evolving ammonia gas. In the presence of moisture, corrosive to aluminium, zinc and tin. Causes burns to skin, eyes and mucous membranes.	2678
2679	T7	TP2	F-A, S-B	Category A	SG22 SG35	Colourless liquid. Corrosive to aluminium, zinc and tin. Causes burns to skin, eyes and mucous membranes.	2679
2679	T4	TP2	F-A, S-B	Category A	SG22 SG35	See entry above.	2679
2680	T3	TP33	F-A, S-B	Category A	SG35	Colourless crystals. Soluble in water. Reacts violently with acids. Causes burns to skin, eyes and mucous membranes.	2680
2681	T7	TP2	F-A, S-B	Category A	SG22 SG35	Colourless liquid. Reacts violently with acids. Reacts with ammonium salts, evolving ammonia gas. Corrosive to glass, aluminium, zinc and tin. Causes burns to skin, eyes and mucous membranes.	2681
2681	T4	TP1	F-A, S-B	Category A	SG22 SG35	See entry above.	2681
2682	T3	TP33	F-A, S-B	Category A	SG22 SG35	Colourless or yellowish hygroscopic crystals. Reacts violently with acids. Reacts with ammonium salts, evolving ammonia gas. In the presence of moisture, corrosive to glass, aluminium, zinc and tin. Causes burns to skin, eyes and mucous membranes.	2682
2683	T7	TP2 TP13	F-E, S-C	Category B SW1 H2	SG35 SG68	Yellow liquid with a foul odour (of rotten eggs). When heated, evolves toxic and flammable vapours. Reacts violently with acids, evolving hydrogen sulphide, a toxic and flammable gas. Toxic if swallowed, by skin contact or by inhalation. Corrosive to skin, eyes and mucous membranes.	2683
2684	T4	TP1	F-E, S-C	Category A	-	Colourless liquid with a fishy odour. Flashpoint: 59°C o.c. Miscible with water. Irritating to skin, eyes and mucous membranes.	2684
2685	T7	TP2	F-E, S-C	Category A	-	Colourless, flammable liquid with a fishy odour. Flashpoint: 46°C o.c. Miscible with water. Harmful by skin contact. Irritating to eyes and mucous membranes.	2685
2686	T7	TP2	F-E, S-C	Category A	-	Colourless liquid. Miscible with water. Reacts violently with oxidizing substances. Explosive limits: 1.8% to 28%. Flashpoint: 46°C to 60°C c.c. Causes burns to skin, eyes and mucous membranes.	2686

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UN No.	Proper shipping name (PSN)	Class or division	Subsidiary risk(s)	Packing group	Special provisions	Limited and excepted quantity provisions		Packing		IBC	
						Limited quantities	Excepted quantities	Instructions	Provisions	Instructions	Provisions
(1)	(2) 3.1.2	(3) 2.0	(4) 2.0	(5) 2.0.1.3	(6) 3.3	(7a) 3.4	(7b) 3.5	(8) 4.1.4	(9) 4.1.4	(10) 4.1.4	(11) 4.1.4
2687	DICYCLOHEXYLAMMONIUM NITRITE	4.1	–	III	–	5 kg	E1	P002 LP02	–	IBC08	B3
2688	1-BROMO-3-CHLOROPROPANE	6.1	–	III	–	5 L	E1	P001 LP01	–	IBC03	–
2689	GLYCEROL- <i>alpha</i> -MONOCHLOROHYDRIN	6.1	–	III	–	5 L	E1	P001 LP01	–	IBC03	–
2690	<i>N-n</i> -BUTYLIMIDAZOLE	6.1	–	II	–	100 mL	E4	P001	–	IBC02	–
2691	PHOSPHORUS PENTABROMIDE	8	–	II	–	1 kg	E0	P002	–	IBC08	B4 B21
2692	BORON TRIBROMIDE	8	–	I	–	0	E0	P602	–	–	–
2693	BISULPHITES, AQUEOUS SOLUTION, N.O.S.	8	–	III	274	5 L	E1	P001 LP01	–	IBC03	–
2698	TETRAHYDROPHTHALIC ANHYDRIDES with more than 0.05% maleic anhydride	8	–	III	29 169 939	5 kg	E1	P002 LP02	PP14	IBC08	B3
2699	TRIFLUOROACETIC ACID	8	–	I	–	0	E0	P001	–	–	–
2705	1-PENTOL	8	–	II	–	1 L	E2	P001	–	IBC02	–
2707	DIMETHYLDIOXANES	3	–	II	–	1 L	E2	P001	–	IBC02	–
2707	DIMETHYLDIOXANES	3	–	III	223	5 L	E1	P001 LP01	–	IBC03	–
2709	BUTYLBENZENES	3	– P	III	–	5 L	E1	P001 LP01	–	IBC03	–
2710	DIPROPYL KETONE	3	–	III	–	5 L	E1	P001 LP01	–	IBC03	–
2713	ACRIDINE	6.1	–	III	–	5 kg	E1	P002 LP02	–	IBC08	B3
2714	ZINC RESINATE	4.1	–	III	–	5 kg	E1	P002	–	IBC06	–
2715	ALUMINIUM RESINATE	4.1	–	III	–	5 kg	E1	P002	–	IBC06	–

UN No.	Portable tanks and bulk containers		EmS	Stowage and handling	Segregation	Properties and observations	UN No.
	Tank instructions	Provisions					
(12)	(13) 4.2.5 4.3	(14) 4.2.5	(15) 5.4.3.2 7.8	(16a) 7.1 7.3–7.7	(16b) 7.2–7.7	(17)	(18)
–	T1	TP33	F-A, S-G	Category A	–	White powder. Insoluble in water. Harmful if swallowed.	2687
–	T4	TP1	F-A, S-A	Category A	–	Colourless liquid. Immiscible with water. Decomposes when heated, evolving highly toxic fumes. Toxic if swallowed, by skin contact or by inhalation.	2688
–	T4	TP1	F-A, S-A	Category A	–	Colourless liquid. Miscible with water. Toxic if swallowed, by skin contact or by inhalation.	2689
–	T7	TP2	F-A, S-A	Category A	–	Colourless to amber mobile liquid. Miscible with water. Toxic if swallowed, by skin contact or by inhalation.	2690
–	T3	TP33	F-A, S-B	Category B SW1 SW2 H2	SG36 SG37	Yellow hygroscopic crystals, evolving fumes in the air which are corrosive and heavier than air. Reacts violently with water, evolving hydrogen bromide, an irritating and corrosive gas apparent as white fumes. Reacts violently with ammonia, bases and many other substances and may cause fire and explosion. Decomposes when heated, evolving corrosive and toxic gases. In the presence of moisture, highly corrosive to most metals. Causes burns to skin, eyes and mucous membranes.	2691
–	T20	TP2 TP13	F-A, S-B	Category C SW1 H2	–	Colourless fuming liquid. Reacts violently with water, evolving toxic and corrosive fumes. Decomposes when heated, evolving toxic fumes. In the presence of moisture, highly corrosive to most metals. Liquid and vapour cause severe burns to skin, eyes and mucous membranes.	2692
–	T7	TP1 TP28	F-A, S-B	Category A SW2	SG35	Liquid with a pungent odour. Reacts with acids, evolving sulphur dioxide, a toxic gas. Causes burns to skin, eyes and mucous membranes.	2693
–	T1	TP33	F-A, S-B	Category A	–	White crystalline powders. React with water, evolving heat and forming tetrahydrophthalic acid. Cause burns to skin, eyes and mucous membranes. When heated, evolve acrid fumes which are irritating to skin, eyes and mucous membranes.	2698
–	T10	TP2	F-A, S-B	Category B SW1 SW2 H2	–	Colourless, fuming, hygroscopic liquid with a pungent odour. Miscible with water. When heated to decomposition or in contact with acids, evolves toxic gases. In the presence of moisture, highly corrosive to most metals. Vapours are highly irritating to skin, eyes and mucous membranes. Liquid causes severe burns to skin, eyes and mucous membranes.	2699
–	T7	TP2	F-A, S-B	Category B	SG20 SG21	Colourless liquid with a perceptible odour. May react in contact with acids and alkalis. Causes burns to skin, eyes and mucous membranes.	2705
–	T4	TP1	F-E, S-D	Category B	–	Colourless liquids with a pungent odour. Partially miscible with water. React vigorously with oxidizing substances. Harmful by inhalation. Irritating to skin, eyes and mucous membranes.	2707
–	T2	TP1	F-E, S-D	Category A	–	See entry above.	2707
–	T2	TP2	F-E, S-D	Category A	–	Colourless liquids with an unpleasant odour. Flashpoint: 34°C to 60°C c.c. Explosive limits: 0.7% to 6.9%. Immiscible with water. Irritating to skin, eyes and mucous membranes.	2709
–	T2	TP1	F-E, S-D	Category A	–	Colourless liquid. Flashpoint: 49°C c.c. Immiscible with water.	2710
–	T1	TP33	F-A, S-A	Category A	–	Small colourless to yellowish crystals or needles. Sublimes at 100°C. Practically insoluble in water. Toxic if swallowed, by skin contact or by inhalation.	2713
–	T1	TP33	F-A, S-I	Category A	–	Powder or clear amber lumps. Insoluble in water. Liable to spontaneous heating. Irritating to skin and mucous membranes.	2714
–	T1	TP33	F-A, S-I	Category A	–	Cream to brown coloured mass. Insoluble in water. Liable to spontaneous heating. Irritating to skin and mucous membranes.	2715

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UN No.	Proper shipping name (PSN)	Class or division	Subsidiary risk(s)	Packing group	Special provisions	Limited and excepted quantity provisions		Packing		IBC	
						Limited quantities	Excepted quantities	Instructions	Provisions	Instructions	Provisions
(1)	(2) 3.1.2	(3) 2.0	(4) 2.0	(5) 2.0.1.3	(6) 3.3	(7a) 3.4	(7b) 3.5	(8) 4.1.4	(9) 4.1.4	(10) 4.1.4	(11) 4.1.4
2716	1,4-BUTYNE DIOL	6.1	–	III	–	5 kg	E1	P002 LP02	–	IBC08	B3
2717	CAMPHOR, synthetic	4.1	–	III	–	5 kg	E1	P002 LP02	–	IBC08	B3
2719	BARIUM BROMATE	5.1	6.1	II	–	1 kg	E2	P002	–	IBC08	B4 B21
2720	CHROMIUM NITRATE	5.1	–	III	–	5 kg	E1	P002 LP02	–	IBC08	B3
2721	COPPER CHLORATE	5.1	–	II	–	1 kg	E2	P002	–	IBC08	B4 B21
2722	LITHIUM NITRATE	5.1	–	III	–	5 kg	E1	P002 LP02	–	IBC08	B3
2723	MAGNESIUM CHLORATE	5.1	–	II	–	1 kg	E2	P002	–	IBC08	B4 B21
2724	MANGANESE NITRATE	5.1	–	III	–	5 kg	E1	P002 LP02	–	IBC08	B3
2725	NICKEL NITRATE	5.1	–	III	–	5 kg	E1	P002 LP02	–	IBC08	B3
2726	NICKEL NITRITE	5.1	–	III	–	5 kg	E1	P002 LP02	–	IBC08	B3
2727	THALLIUM NITRATE	6.1	5.1 P	II	–	500 g	E4	P002	–	IBC06	B21
2728	ZIRCONIUM NITRATE	5.1	–	III	–	5 kg	E1	P002 LP02	–	IBC08	B3
2729	HEXACHLOROBENZENE	6.1	–	III	–	5 kg	E1	P002 LP02	–	IBC08	B3
2730	NITROANISOLE, LIQUID	6.1	–	III	279	5 L	E1	P001 LP01	–	IBC03	–

UN No.	Portable tanks and bulk containers		EmS	Stowage and handling	Segregation	Properties and observations	UN No.
	Tank instructions	Provisions					
(12)	(13) 4.2.5 4.3	(14) 4.2.5	(15) 5.4.3.2 7.8	(16a) 7.1 7.3–7.7	(16b) 7.2–7.7	(17)	(18)
–	T1	TP33	F-A, S-A	Category A	SG35 SG36 SG55	White crystals. Melting point: 58°C. Soluble in water. Forms explosive mixtures with mercury salts, strong acids, alkaline compounds and halides. Toxic if swallowed, by skin contact or by inhalation.	2716
–	T1	TP33	F-A, S-I	Category A	–	Colourless or white crystals, granules or easily broken masses with a penetrating, pungent and aromatic odour. Slightly soluble in water. When heated, evolves flammable and explosive vapours. Harmful if swallowed.	2717
–	T3	TP33	F-H, S-Q	Category A	SG38 SG49	White crystals or powder. Slightly soluble in water. Reacts vigorously with sulphuric acid. Reacts fiercely with cyanides when heated or by friction. May form explosive mixtures with combustible material, powdered metals or ammonium compounds. These mixtures are sensitive to friction and are liable to ignite. When involved in a fire, may cause an explosion. Toxic if swallowed, by skin contact or by dust inhalation.	2719
–	T1	TP33	F-A, S-Q	Category A	–	Purple crystals. Mixtures with combustible material are readily ignited and may burn fiercely. Solutions in water are slightly corrosive. Harmful if swallowed.	2720
–	T3	TP33	F-H, S-Q	Category A	SG38 SG49	Blue-green deliquescent crystals or powder. Soluble in water. Reacts vigorously with sulphuric acid. Reacts fiercely with cyanides when heated or by friction. May form explosive mixtures with combustible material, powdered metals or ammonium compounds. These mixtures are sensitive to friction and are liable to ignite. When involved in a fire, may cause an explosion.	2721
–	T1	TP33	F-A, S-Q	Category A	–	Colourless deliquescent crystals. Soluble in water. Mixtures with combustible material are readily ignited and burn fiercely. Harmful if swallowed.	2722
–	T3	TP33	F-H, S-Q	Category A	SG38 SG49	White deliquescent crystals or powder. Soluble in water. Melting point: 35°C. Reacts vigorously with sulphuric acid. Reacts fiercely with cyanides when heated or by friction. May form explosive mixtures with combustible material, powdered metals or ammonium compounds. These mixtures are sensitive to friction and are liable to ignite. When involved in a fire, may cause an explosion. The cargoes should be protected from moisture prior to and after loading. If weather is inclement, hatches should be closed.	2723
–	T1	TP33	F-A, S-Q	Category A	–	Pale pink deliquescent crystals. Soluble in water. Melting point between 26°C and 35°C. Mixtures with combustible material are readily ignited and may burn fiercely. Solutions in water are slightly corrosive. Harmful if swallowed.	2724
–	T1	TP33	F-A, S-Q	Category A	–	Green deliquescent crystals. Soluble in water. Melting point: 55°C. Mixtures with combustible material are readily ignited and may burn fiercely. Solutions in water are slightly corrosive. Harmful if swallowed.	2725
–	T1	TP33	F-A, S-Q	Category A	SG38 SG49	Reddish-yellow crystals. Decomposes if heated, giving off toxic nitrous fumes. Mixtures with combustible material are readily ignited and may burn fiercely. Mixtures with ammonium compounds or cyanides may explode. Harmful if swallowed.	2726
–	T3	TP33	F-A, S-Q	Category A	–	Colourless crystals. Soluble in water. Mixtures with combustible material are readily ignited and may burn fiercely. Toxic if swallowed, by skin contact or by dust inhalation.	2727
–	T1	TP33	F-A, S-Q	Category A	–	White crystals, flakes or powder. Soluble in water. Solutions in water are slightly corrosive. Harmful if swallowed.	2728
–	T1	TP33	F-A, S-A	Category A	–	White needle-like crystals. Insoluble in water. Decomposes when heated, evolving highly toxic fumes. Toxic if swallowed, by skin contact or by dust inhalation.	2729
–	T4	TP1	F-A, S-A	Category A	–	Light reddish or amber liquid. Immiscible with water. Toxic if swallowed, by skin contact or by inhalation.	2730

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						Limited quantities	Excepted quantities	Instructions	Provisions	Instructions	Provisions
(1)	(2) 3.1.2	(3) 2.0	(4) 2.0	(5) 2.0.1.3	(6) 3.3	(7a) 3.4	(7b) 3.5	(8) 4.1.4	(9) 4.1.4	(10) 4.1.4	(11) 4.1.4
2732	NITROBROMOBENZENES, LIQUID	6.1	–	III	–	5 L	E1	P001 LP01	–	IBC03	–
2733	AMINES, FLAMMABLE, CORROSIVE, N.O.S. or POLYAMINES, FLAMMABLE, CORROSIVE, N.O.S.	3	8	I	274	0	E0	P001	–	–	–
2733	AMINES, FLAMMABLE, CORROSIVE, N.O.S. or POLYAMINES, FLAMMABLE, CORROSIVE, N.O.S.	3	8	II	274	1 L	E2	P001	–	IBC02	–
2733	AMINES, FLAMMABLE, CORROSIVE, N.O.S. or POLYAMINES, FLAMMABLE, CORROSIVE, N.O.S.	3	8	III	223 274	5 L	E1	P001	–	IBC03	–
2734	AMINES, LIQUID, CORROSIVE, FLAMMABLE, N.O.S. or POLYAMINES, LIQUID, CORROSIVE, FLAMMABLE, N.O.S.	8	3	I	274	0	E0	P001	–	–	–
2734	AMINES, LIQUID, CORROSIVE, FLAMMABLE, N.O.S. or POLYAMINES, LIQUID, CORROSIVE, FLAMMABLE, N.O.S.	8	3	II	274	1 L	E2	P001	–	IBC02	–
2735	AMINES, LIQUID, CORROSIVE, N.O.S. or POLYAMINES, LIQUID, CORROSIVE, N.O.S.	8	–	I	274	0	E0	P001	–	–	–
2735	AMINES, LIQUID, CORROSIVE, N.O.S. or POLYAMINES, LIQUID, CORROSIVE, N.O.S.	8	–	II	274	1 L	E2	P001	–	IBC02	–
2735	AMINES, LIQUID, CORROSIVE, N.O.S. or POLYAMINES, LIQUID, CORROSIVE, N.O.S.	8	–	III	223 274	5 L	E1	P001 LP01	–	IBC03	–
2738	N-BUTYLANILINE	6.1	–	II	–	100 mL	E4	P001	–	IBC02	–
2739	BUTYRIC ANHYDRIDE	8	–	III	–	5 L	E1	P001 LP01	–	IBC03	–
2740	n-PROPYL CHLOROFORMATE	6.1	3/8	I	–	0	E0	P602	–	–	–
2741	BARIUM HYPOCHLORITE with more than 22% available chlorine	5.1	6.1	II	–	1 kg	E2	P002	–	IBC08	B4 B21

UN No.	Portable tanks and bulk containers		EmS	Stowage and handling	Segregation	Properties and observations	UN No.
	Tank instructions	Provisions					
(12)	(13) 4.2.5 4.3	(14) 4.2.5	(15) 5.4.3.2 7.8	(16a) 7.1 7.3–7.7	(16b) 7.2–7.7	(17)	(18)
–	T4	TP1	F-A, S-A	Category A	–	Colourless to pale yellow liquids. Melting point of 1-BROMO-3-NITROBENZENE: 17°C. Immiscible with water. Toxic if swallowed, by skin contact or by inhalation.	2732
–	T14	TP1 TP27	F-E, S-C	Category D SW2	SG35	Colourless to yellowish liquids with an unpleasant odour. Some are very volatile. Miscible with water. Corrosive to most metals, especially to copper and its alloys. When involved in a fire, evolve toxic gases. React violently with acids. Harmful by inhalation. Cause burns to skin, eyes and mucous membranes.	2733
–	T11	TP1 TP27	F-E, S-C	Category B SW2	SG35	See entry above.	2733
–	T7	TP1 TP28	F-E, S-C	Category A SW2	SG35	See entry above.	2733
–	T14	TP2 TP27	F-E, S-C	Category A	SG35	Colourless to yellowish flammable liquids or solutions with a pungent odour. Miscible with water. When involved in a fire, evolve toxic gases. Corrosive to most metals, especially to copper and its alloys. React violently with acids. Cause burns to skin, eyes and mucous membranes.	2734
–	T11	TP2 TP27	F-E, S-C	Category A	SG35	See entry above.	2734
–	T14	TP2 TP27	F-E, S-B	Category A	SG35	Colourless to yellowish liquids or solutions with a pungent odour. Miscible with or soluble in water. When involved in a fire, evolve toxic gases. Corrosive to most metals, especially to copper and its alloys. React violently with acids. Cause burns to skin, eyes and mucous membranes.	2735
–	T11	TP1 TP27	F-A, S-B	Category A	SG35	See entry above.	2735
–	T7	TP1 TP28	F-A, S-B	Category A	SG35	See entry above.	2735
–	T7	TP2	F-A, S-A	Category A	SG17	Amber liquid with a perceptible odour. Immiscible with water. May react vigorously with oxidizing substances. Toxic if swallowed, by skin contact or by inhalation.	2738
–	T4	TP1	F-A, S-B	Category A	–	Colourless liquid. Decomposes in water to form butyric acid.	2739
–	T20	TP2 TP13	F-E, S-C	Category B SW2	SG5 SG8	Colourless flammable liquid. Flashpoint: 28°C c.c. Decomposed by water, generating propyl alcohol. Highly toxic if swallowed, by skin contact or by inhalation. Causes burns to skin, eyes and mucous membranes.	2740
–	T3	TP33	F-H, S-Q	Category B	SG35 SG38 SG49 SG53 SG60	White powder with pungent odour. Reacts with acids, evolving chlorine, an irritating, corrosive and toxic gas. Reacts fiercely with cyanides when heated or by friction. May form explosive mixtures with combustible material, powdered metals or ammonium compounds. These mixtures are sensitive to friction and are liable to ignite. When involved in a fire, may cause an explosion. Toxic if swallowed, by skin contact or by dust inhalation. Dust irritates mucous membranes. Contact with eyes will cause serious injury to the cornea (blindness) if not treated immediately by using copious amounts of water followed by medical attention.	2741

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						Limited quantities (7a)	Excepted quantities (7b)	Instructions (8)	Provisions (9)	Instructions (10)	Provisions (11)
(1)	(2) 3.1.2	(3) 2.0	(4) 2.0	(5) 2.0.1.3	(6) 3.3	(7a) 3.4	(7b) 3.5	(8) 4.1.4	(9) 4.1.4	(10) 4.1.4	(11) 4.1.4
2742	CHLOROFORMATES, TOXIC, CORROSIVE, FLAMMABLE, N.O.S.	6.1	3/8	II	274	100 mL	E4	P001	-	IBC01	-
2743	<i>n</i> -BUTYL CHLOROFORMATE	6.1	3/8	II	-	100 mL	E0	P001	-	-	-
2744	CYCLOBUTYL CHLOROFORMATE	6.1	3/8	II	-	100 mL	E4	P001	-	IBC01	-
2745	CHLOROMETHYL CHLOROFORMATE	6.1	8	II	-	100 mL	E4	P001	-	IBC02	-
2746	PHENYL CHLOROFORMATE	6.1	8	II	-	100 mL	E4	P001	-	IBC02	-
2747	<i>tert</i> -BUTYLCYCLOHEXYL CHLOROFORMATE	6.1	-	III	-	5 L	E1	P001 LP01	-	IBC03	-
2748	2-ETHYLHEXYL CHLOROFORMATE	6.1	8	II	-	100 mL	E4	P001	-	IBC02	-
2749	TETRAMETHYLSILANE	3	-	I	-	0	E0	P001	-	-	-
2750	1,3-DICHLOROPROPANOL-2	6.1	-	II	-	100 mL	E4	P001	-	IBC02	-
2751	DIETHYLTHIOPHOSPHORYL CHLORIDE	8	-	II	-	1 L	E2	P001	-	IBC02	-
2752	1,2-EPOXY-3-ETHOXY-PROPANE	3	-	III	-	5 L	E1	P001 LP01	-	IBC03	-
2753	<i>N</i> -ETHYLBENZYL TOLUIDINES, LIQUID	6.1	-	III	-	5 L	E1	P001 LP01	-	IBC03	-
2754	<i>N</i> -ETHYL TOLUIDINES	6.1	-	II	-	100 mL	E4	P001	-	IBC02	-
2757	CARBAMATE PESTICIDE, SOLID, TOXIC	6.1	-	I	61 274	0	E5	P002	-	IBC07	B1
2757	CARBAMATE PESTICIDE, SOLID, TOXIC	6.1	-	II	61 274	500 g	E4	P002	-	IBC08	B4 B21

UN No.	Portable tanks and bulk containers		EmS	Stowage and handling	Segregation	Properties and observations	UN No.
	Tank instructions (12)	Provisions (14)					
(1)	(13) 4.2.5 4.3	(14) 4.2.5	(15) 5.4.3.2 7.8	(16a) 7.1 7.3-7.7	(16b) 7.2-7.7	(17)	(18)
2742	-	-	F-E, S-C	Category A SW1 SW2 H1 H2	SG5 SG8	A wide range of colourless to yellowish flammable liquids. React and decompose with water or heat, evolving hydrogen chloride, an irritating and corrosive gas apparent as white fumes. Flashpoint: cyclohexyl chloroformate: 53°C c.c. Toxic if swallowed, by skin contact or by inhalation. Cause burns to skin, eyes and mucous membranes.	2742
2743	T20	TP2 TP13	F-E, S-C	Category A SW1 SW2 H1 H2	SG5 SG8	A wide range of colourless to yellowish flammable liquids. React and decompose with water or heat, evolving hydrogen chloride, an irritating and corrosive gas apparent as white fumes. Flashpoint: 32°C c.c. to 39°C c.c. Toxic if swallowed, by skin contact or by inhalation. Cause burns to skin, eyes and mucous membranes.	2743
2744	T7	TP2 TP13	F-E, S-C	Category A SW1 SW2 H1 H2	SG5 SG8	A wide range of colourless to yellowish flammable liquids. React and decompose with water or heat, evolving hydrogen chloride, an irritating and corrosive gas apparent as white fumes. Flashpoint: 38°C c.c. Toxic if swallowed, by skin contact or by inhalation. Cause burns to skin, eyes and mucous membranes.	2744
2745	T7	TP2 TP13	F-A, S-B	Category A SW1 SW2 H1 H2	-	A wide range of colourless to yellowish liquids. React and decompose with water or heat, evolving hydrogen chloride, an irritating and corrosive gas apparent as white fumes. Toxic if swallowed, by skin contact or by inhalation. Cause burns to skin, eyes and mucous membranes.	2745
2746	T7	TP2 TP13	F-A, S-B	Category A SW1 SW2 H1 H2	-	A wide range of colourless to yellowish liquids. React and decompose with water or heat, evolving hydrogen chloride, an irritating and corrosive gas apparent as white fumes. Toxic if swallowed, by skin contact or by inhalation. Cause burns to skin, eyes and mucous membranes.	2746
2747	T4	TP1	F-A, S-A	Category A SW1 H1 H2	-	Colourless to yellowish liquid. Reacts with water or decomposes if heated, evolving hydrogen chloride, an irritating and corrosive gas apparent as white fumes. Toxic if swallowed, by skin contact or by inhalation.	2747
2748	T7	TP2 TP13	F-A, S-B	Category A SW1 SW2 H1 H2	-	A wide range of colourless to yellowish liquids. React and decompose with water or heat, evolving hydrogen chloride, an irritating and corrosive gas apparent as white fumes. Toxic if swallowed, by skin contact or by inhalation. Cause burns to skin, eyes and mucous membranes.	2748
2749	T14	TP2	F-E, S-D	Category D	-	Colourless, volatile liquid. Flashpoint: below -18°C c.c. Boiling point: 27°C. Immiscible with water. Harmful if swallowed or by inhalation. Irritating to skin, eyes and mucous membranes.	2749
2750	T7	TP2	F-A, S-A	Category A SW1 SW2 H2	-	Colourless, slightly viscous liquid with a chloroform-like odour. Immiscible with water. Decomposes when heated, evolving extremely toxic fumes (phosgene). Toxic if swallowed, by skin contact or by inhalation.	2750
2751	T7	TP2	F-A, S-B	Category D SW1 SW2 H2	-	Colourless liquid with a perceptible odour. Reacts slowly with water, forming hydrochloric acid. When involved in a fire, evolves toxic gases (hydrogen chloride and sulphur dioxide). Vapour highly irritating to eyes and mucous membranes. Liquid causes burns to skin, eyes and mucous membranes.	2751
2752	T2	TP1	F-E, S-D	Category A	-	Immiscible with water. Flashpoint: 47°C c.c. Irritating to skin, eyes and mucous membranes.	2752
2753	T7	TP1	F-A, S-A	Category A	-	Liquids with a strong odour. Immiscible with water. Toxic if swallowed, by skin contact or by inhalation.	2753
2754	T7	TP2	F-A, S-A	Category A	-	Colourless to light amber flammable liquids. Immiscible with water. Toxic if swallowed, by skin contact or by inhalation.	2754
2757	T6	TP33	F-A, S-A	Category A SW2	-	Solid pesticides present a very wide range of toxic hazard. Toxic if swallowed, by skin contact or by inhalation.	2757
2757	T3	TP33	F-A, S-A	Category A SW2	-	See entry above.	2757

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UN No.	Proper shipping name (PSN)	Class or division	Subsidiary risk(s)	Packing group	Special provisions	Limited and excepted quantity provisions		Packing		IBC	
						Limited quantities	Excepted quantities	Instructions	Provisions	Instructions	Provisions
(1)	(2) 3.1.2	(3) 2.0	(4) 2.0	(5) 2.0.1.3	(6) 3.3	(7a) 3.4	(7b) 3.5	(8) 4.1.4	(9) 4.1.4	(10) 4.1.4	(11) 4.1.4
2757	CARBAMATE PESTICIDE, SOLID, TOXIC	6.1	–	III	61 223 274	5 kg	E1	P002 LP02	–	IBC08	B3
2758	CARBAMATE PESTICIDE, LIQUID, FLAMMABLE, TOXIC, flashpoint less than 23°C	3	6.1	I	61 274	0	E0	P001	–	–	–
2758	CARBAMATE PESTICIDE, LIQUID, FLAMMABLE, TOXIC, flashpoint less than 23°C	3	6.1	II	61 274	1 L	E2	P001	–	IBC02	–
2759	ARSENICAL PESTICIDE, SOLID, TOXIC	6.1	–	I	61 274	0	E5	P002	–	IBC07	B1
2759	ARSENICAL PESTICIDE, SOLID, TOXIC	6.1	–	II	61 274	500 g	E4	P002	–	IBC08	B4 B21
2759	ARSENICAL PESTICIDE, SOLID, TOXIC	6.1	–	III	61 223 274	5 kg	E1	P002 LP02	–	IBC08	B3
2760	ARSENICAL PESTICIDE, LIQUID, FLAMMABLE, TOXIC, flashpoint less than 23°C	3	6.1	I	61 274	0	E0	P001	–	–	–
2760	ARSENICAL PESTICIDE, LIQUID, FLAMMABLE, TOXIC, flashpoint less than 23°C	3	6.1	II	61 274	1 L	E2	P001	–	IBC02	–
2761	ORGANOCHLORINE PESTICIDE, SOLID, TOXIC	6.1	–	I	61 274	0	E5	P002	–	IBC07	B1
2761	ORGANOCHLORINE PESTICIDE, SOLID, TOXIC	6.1	–	II	61 274	500 g	E4	P002	–	IBC08	B4 B21
2761	ORGANOCHLORINE PESTICIDE, SOLID, TOXIC	6.1	–	III	61 223 274	5 kg	E1	P002 LP02	–	IBC08	B3
2762	ORGANOCHLORINE PESTICIDE, LIQUID, FLAMMABLE, TOXIC, flashpoint less than 23°C	3	6.1	I	61 274	0	E0	P001	–	–	–
2762	ORGANOCHLORINE PESTICIDE, LIQUID, FLAMMABLE, TOXIC, flashpoint less than 23°C	3	6.1	II	61 274	1 L	E2	P001	–	IBC02	–
2763	TRIAZINE PESTICIDE, SOLID, TOXIC	6.1	–	I	61 274	0	E5	P002	–	IBC07	B1
2763	TRIAZINE PESTICIDE, SOLID, TOXIC	6.1	–	II	61 274	500 g	E4	P002	–	IBC08	B4 B21
2763	TRIAZINE PESTICIDE, SOLID, TOXIC	6.1	–	III	61 223 274	5 kg	E1	P002	–	IBC08	B3
2764	TRIAZINE PESTICIDE, LIQUID, FLAMMABLE, TOXIC, flashpoint less than 23°C	3	6.1	I	61 274	0	E0	P001	–	–	–
2764	TRIAZINE PESTICIDE, LIQUID, FLAMMABLE, TOXIC, flashpoint less than 23°C	3	6.1	II	61 274	1 L	E2	P001	–	IBC02	–
2771	THIOCARBAMATE PESTICIDE, SOLID, TOXIC	6.1	–	I	61 274	0	E5	P002	–	IBC07	B1
2771	THIOCARBAMATE PESTICIDE, SOLID, TOXIC	6.1	–	II	61 274	500 g	E4	P002	–	IBC08	B4 B21
2771	THIOCARBAMATE PESTICIDE, SOLID, TOXIC	6.1	–	III	61 223 274	5 kg	E1	P002 LP02	–	IBC08	B3

UN No.	Portable tanks and bulk containers		EmS	Stowage and handling	Segregation	Properties and observations	UN No.
	Tank instructions	Provisions					
(12)	(13) 4.2.5 4.3	(14) 4.2.5	(15) 5.4.3.2 7.8	(16a) 7.1 7.3–7.7	(16b) 7.2–7.7	(17)	(18)
–	T1	TP33	F-A, S-A	Category A SW2	–	Solid pesticides present a very wide range of toxic hazard. Toxic if swallowed, by skin contact or by inhalation.	2757
–	T14	TP2 TP13 TP27	F-E, S-D	Category B SW2	–	Pesticides frequently contain petroleum or coal tar distillates, or other flammable liquids. Miscibility with water depends upon the composition. Toxic if swallowed, by skin contact or by inhalation.	2758
–	T11	TP2 TP13 TP27	F-E, S-D	Category B SW2	–	See entry above.	2758
–	T6	TP33	F-A, S-A	Category A SW2	–	Solid pesticides present a very wide range of toxic hazard. Toxic if swallowed, by skin contact or by inhalation.	2759
–	T3	TP33	F-A, S-A	Category A SW2	–	See entry above.	2759
–	T1	TP33	F-A, S-A	Category A SW2	–	See entry above.	2759
–	T14	TP2 TP13 TP27	F-E, S-D	Category B SW2	–	Pesticides frequently contain petroleum or coal tar distillates, or other flammable liquids. Miscibility with water depends upon the composition. Toxic if swallowed, by skin contact or by inhalation.	2760
–	T11	TP2 TP13 TP27	F-E, S-D	Category B SW2	–	See entry above.	2760
–	T6	TP33	F-A, S-A	Category A SW2	–	Solid pesticides present a very wide range of toxic hazard. Toxic if swallowed, by skin contact or by inhalation.	2761
–	T3	TP33	F-A, S-A	Category A SW2	–	See entry above.	2761
–	T1	TP33	F-A, S-A	Category A SW2	–	See entry above.	2761
–	T14	TP2 TP13 TP27	F-E, S-D	Category B SW2	–	Pesticides frequently contain petroleum or coal tar distillates, or other flammable liquids. Miscibility with water depends upon the composition. Toxic if swallowed, by skin contact or by inhalation.	2762
–	T11	TP2 TP13 TP27	F-E, S-D	Category B SW2	–	See entry above.	2762
–	T6	TP33	F-A, S-A	Category A SW2	–	Solid pesticides present a very wide range of toxic hazard. Toxic if swallowed, by skin contact or by inhalation.	2763
–	T3	TP33	F-A, S-A	Category A SW2	–	See entry above.	2763
–	T3	TP33	F-A, S-A	Category A SW2	–	See entry above.	2763
–	T14	TP2 TP13 TP27	F-E, S-D	Category B SW2	–	Pesticides frequently contain petroleum or coal tar distillates, or other flammable liquids. Miscibility with water depends upon the composition. Toxic if swallowed, by skin contact or by inhalation.	2764
–	T11	TP2 TP13 TP27	F-E, S-D	Category B SW2	–	See entry above.	2764
–	T6	TP33	F-A, S-A	Category A SW2	–	Solid pesticides present a very wide range of toxic hazard. Toxic if swallowed, by skin contact or by inhalation.	2771
–	T3	TP33	F-A, S-A	Category A SW2	–	See entry above.	2771
–	T1	TP33	F-A, S-A	Category A SW2	–	See entry above.	2771

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UN No.	Proper shipping name (PSN)	Class or division	Subsidiary risk(s)	Packing group	Special provisions	Limited and excepted quantity provisions		Packing		IBC	
						Limited quantities	Excepted quantities	Instructions	Provisions	Instructions	Provisions
(1)	(2) 3.1.2	(3) 2.0	(4) 2.0	(5) 2.0.1.3	(6) 3.3	(7a) 3.4	(7b) 3.5	(8) 4.1.4	(9) 4.1.4	(10) 4.1.4	(11) 4.1.4
2772	THIOCARBAMATE PESTICIDE, LIQUID, FLAMMABLE, TOXIC, flashpoint less than 23°C	3	6.1	I	61 274	0	E0	P001	-	-	-
2772	THIOCARBAMATE PESTICIDE, LIQUID, FLAMMABLE, TOXIC, flashpoint less than 23°C	3	6.1	II	61 274	1 L	E2	P001	-	IBC02	-
2775	COPPER BASED PESTICIDE, SOLID, TOXIC	6.1	-	I	61 274	0	E5	P002	-	IBC07	B1
2775	COPPER BASED PESTICIDE, SOLID, TOXIC	6.1	-	II	61 274	500 g	E4	P002	-	IBC08	B4 B21
2775	COPPER BASED PESTICIDE, SOLID, TOXIC	6.1	-	III	61 223 274	5 kg	E1	P002 LP02	-	IBC08	B3
2776	COPPER BASED PESTICIDE, LIQUID, FLAMMABLE, TOXIC, flashpoint less than 23°C	3	6.1	I	61 274	0	E0	P001	-	-	-
2776	COPPER BASED PESTICIDE, LIQUID, FLAMMABLE, TOXIC, flashpoint less than 23°C	3	6.1	II	61 274	1 L	E2	P001	-	IBC02	-
2777	MERCURY BASED PESTICIDE, SOLID, TOXIC	6.1	- P	I	61 274	0	E5	P002	-	IBC07	B1
2777	MERCURY BASED PESTICIDE, SOLID, TOXIC	6.1	- P	II	61 274	500 g	E4	P002	-	IBC08	B4 B21
2777	MERCURY BASED PESTICIDE, SOLID, TOXIC	6.1	- P	III	61 223 274	5 kg	E1	P002 LP02	-	IBC08	B3
2778	MERCURY BASED PESTICIDE, LIQUID, FLAMMABLE, TOXIC, flashpoint less than 23°C	3	6.1 P	I	61 274	0	E0	P001	-	-	-
2778	MERCURY BASED PESTICIDE, LIQUID, FLAMMABLE, TOXIC, flashpoint less than 23°C	3	6.1 P	II	61 274	1 L	E2	P001	-	IBC02	-
2779	SUBSTITUTED NITROPHENOL PESTICIDE, SOLID, TOXIC	6.1	-	I	61 274	0	E5	P002	-	IBC07	B1
2779	SUBSTITUTED NITROPHENOL PESTICIDE, SOLID, TOXIC	6.1	-	II	61 274	500 g	E4	P002	-	IBC08	B4 B21
2779	SUBSTITUTED NITROPHENOL PESTICIDE, SOLID, TOXIC	6.1	-	III	61 223 274	5 kg	E1	P002 LP02	-	IBC08	B3
2780	SUBSTITUTED NITROPHENOL PESTICIDE, LIQUID, FLAMMABLE, TOXIC, flashpoint less than 23°C	3	6.1	I	61 274	0	E0	P001	-	-	-
2780	SUBSTITUTED NITROPHENOL PESTICIDE, LIQUID, FLAMMABLE, TOXIC, flashpoint less than 23°C	3	6.1	II	61 274	1 L	E2	P001	-	IBC02	-
2781	BIPYRIDILIUM PESTICIDE, SOLID, TOXIC	6.1	-	I	61 274	0	E5	P002	-	IBC07	B1
2781	BIPYRIDILIUM PESTICIDE, SOLID, TOXIC	6.1	-	II	61 274	500 g	E4	P002	-	IBC08	B4 B21
2781	BIPYRIDILIUM PESTICIDE, SOLID, TOXIC	6.1	-	III	61 223 274	5 kg	E1	P002 LP02	-	IBC08	B3

UN No.	Portable tanks and bulk containers		EmS	Stowage and handling	Segregation	Properties and observations	UN No.
	Tank instructions	Provisions					
(12)	(13) 4.2.5 4.3	(14) 4.2.5	(15) 5.4.3.2 7.8	(16a) 7.1 7.3-7.7	(16b) 7.2-7.7	(17)	(18)
-	T14	TP2 TP13 TP27	F-E, S-D	Category B SW2	-	Pesticides frequently contain petroleum or coal tar distillates, or other flammable liquids. Miscibility with water depends upon the composition. Toxic if swallowed, by skin contact or by inhalation.	2772
-	T11	TP2 TP13 TP27	F-E, S-D	Category B SW2	-	See entry above.	2772
-	T6	TP33	F-A, S-A	Category A SW2	-	Solid pesticides present a very wide range of toxic hazard. Toxic if swallowed, by skin contact or by inhalation.	2775
-	T3	TP33	F-A, S-A	Category A SW2	-	See entry above.	2775
-	T1	TP33	F-A, S-A	Category A SW2	-	See entry above.	2775
-	T14	TP2 TP13 TP27	F-E, S-D	Category B SW2	-	Pesticides frequently contain petroleum or coal tar distillates, or other flammable liquids. Miscibility with water depends upon the composition. Toxic if swallowed, by skin contact or by inhalation.	2776
-	T11	TP2 TP13 TP27	F-E, S-D	Category B SW2	-	Pesticides frequently contain petroleum or coal tar distillates, or other flammable liquids. Miscibility with water depends upon the composition. Toxic if swallowed, by skin contact or by inhalation.	2776
-	T6	TP33	F-A, S-A	Category A SW2	-	Solid pesticides present a very wide range of toxic hazard. Toxic if swallowed, by skin contact or by inhalation.	2777
-	T3	TP33	F-A, S-A	Category A SW2	-	See entry above.	2777
-	T1	TP33	F-A, S-A	Category A SW2	-	See entry above.	2777
-	T14	TP2 TP13 TP27	F-E, S-D	Category B SW2	-	Pesticides frequently contain petroleum or coal tar distillates, or other flammable liquids. Miscibility with water depends upon the composition. Toxic if swallowed, by skin contact or by inhalation.	2778
-	T11	TP2 TP13 TP27	F-E, S-D	Category B SW2	-	See entry above.	2778
-	T6	TP33	F-A, S-A	Category A SW2	-	Solid pesticides present a very wide range of toxic hazard. Toxic if swallowed, by skin contact or by inhalation.	2779
-	T3	TP33	F-A, S-A	Category A SW2	-	See entry above.	2779
-	T1	TP33	F-A, S-A	Category A SW2	-	See entry above.	2779
-	T14	TP2 TP13 TP27	F-E, S-D	Category B SW2	-	Pesticides frequently contain petroleum or coal tar distillates, or other flammable liquids. Miscibility with water depends upon the composition. Toxic if swallowed, by skin contact or by inhalation.	2780
-	T11	TP2 TP13 TP27	F-E, S-D	Category B SW2	-	See entry above.	2780
-	T6	TP33	F-A, S-A	Category A SW2	-	Solid pesticides present a very wide range of toxic hazard. Toxic if swallowed, by skin contact or by inhalation.	2781
-	T3	TP33	F-A, S-A	Category A SW2	-	See entry above.	2781
-	T1	TP33	F-A, S-A	Category A SW2	-	See entry above.	2781

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						Limited quantities	Excepted quantities	Instructions	Provisions	Instructions	Provisions
(1)	(2) 3.1.2	(3) 2.0	(4) 2.0	(5) 2.0.1.3	(6) 3.3	(7a) 3.4	(7b) 3.5	(8) 4.1.4	(9) 4.1.4	(10) 4.1.4	(11) 4.1.4
2782	BIPYRIDILIUM PESTICIDE, LIQUID, FLAMMABLE, TOXIC, flashpoint less than 23°C	3	6.1	I	61 274	0	E0	P001	-	-	-
2782	BIPYRIDILIUM PESTICIDE, LIQUID, FLAMMABLE, TOXIC, flashpoint less than 23°C	3	6.1	II	61 274	1 L	E2	P001	-	IBC02	-
2783	ORGANOPHOSPHORUS PESTICIDE, SOLID, TOXIC	6.1	-	I	61 274	0	E5	P002	-	IBC07	B1
2783	ORGANOPHOSPHORUS PESTICIDE, SOLID, TOXIC	6.1	-	II	61 274	500 g	E4	P002	-	IBC08	B4 B21
2783	ORGANOPHOSPHORUS PESTICIDE, SOLID, TOXIC	6.1	-	III	61 223 274	5 kg	E1	P002 LP02	-	IBC08	B3
2784	ORGANOPHOSPHORUS PESTICIDE, LIQUID, FLAMMABLE, TOXIC, flashpoint less than 23°C	3	6.1	I	61 274	0	E0	P001	-	-	-
2784	ORGANOPHOSPHORUS PESTICIDE, LIQUID, FLAMMABLE, TOXIC, flashpoint less than 23°C	3	6.1	II	61 274	1 L	E2	P001	-	IBC02	-
2785	4-THIAPENTANAL	6.1	-	III	-	5 L	E1	P001 LP01	PP31	IBC03	-
2786	ORGANOTIN PESTICIDE, SOLID, TOXIC	6.1	- P	I	61 274	0	E5	P002	-	IBC07	B1
2786	ORGANOTIN PESTICIDE, SOLID, TOXIC	6.1	- P	II	61 274	500 g	E4	P002	-	IBC08	B4 B21
2786	ORGANOTIN PESTICIDE, SOLID, TOXIC	6.1	- P	III	61 223 274	5 kg	E1	P002 LP02	-	IBC08	B3
2787	ORGANOTIN PESTICIDE, LIQUID, FLAMMABLE, TOXIC, flashpoint less than 23°C	3	6.1 P	I	61 274	0	E0	P001	-	-	-
2787	ORGANOTIN PESTICIDE, LIQUID, FLAMMABLE, TOXIC, flashpoint less than 23°C	3	6.1 P	II	61 274	1 L	E2	P001	-	IBC02	-
2788	ORGANOTIN COMPOUND, LIQUID, N.O.S.	6.1	- P	I	43 274	0	E5	P001	-	-	-
2788	ORGANOTIN COMPOUND, LIQUID, N.O.S.	6.1	- P	II	43 274	100 mL	E4	P001	-	IBC02	-
2788	ORGANOTIN COMPOUND, LIQUID, N.O.S.	6.1	- P	III	43 223 274	5 L	E1	P001 LP01	-	IBC03	-
2789	ACETIC ACID, GLACIAL or ACETIC ACID SOLUTION, more than 80% acid, by mass	8	3	II	-	1 L	E2	P001	-	IBC02	-
2790	ACETIC ACID SOLUTION not less than 50% but not more than 80% acid, by mass	8	-	II	-	1 L	E2	P001	-	IBC02	-

UN No.	Portable tanks and bulk containers		EmS	Stowage and handling	Segregation	Properties and observations	UN No.
	Tank instructions	Provisions					
(12)	(13) 4.2.5 4.3	(14) 4.2.5	(15) 5.4.3.2 7.8	(16a) 7.1 7.3-7.7	(16b) 7.2-7.7	(17)	(18)
-	T14	TP2 TP13 TP27	F-E, S-D	Category B SW2	-	Pesticides frequently contain petroleum or coal tar distillates, or other flammable liquids. Miscibility with water depends upon the composition. Toxic if swallowed, by skin contact or by inhalation.	2782
-	T11	TP2 TP13 TP27	F-E, S-D	Category B SW2	-	See entry above.	2782
-	T6	TP33	F-A, S-A	Category A SW2	-	Solid pesticides present a very wide range of toxic hazard. Toxic if swallowed, by skin contact or by inhalation.	2783
-	T3	TP33	F-A, S-A	Category A SW2	-	See entry above.	2783
-	T1	TP33	F-A, S-A	Category A SW2	-	See entry above.	2783
-	T14	TP2 TP13 TP27	F-E, S-D	Category B SW2	-	Pesticides frequently contain petroleum or coal tar distillates, or other flammable liquids. Miscibility with water depends upon the composition. Toxic if swallowed, by skin contact or by inhalation.	2784
-	T11	TP2 TP13 TP27	F-E, S-D	Category B SW2	-	Pesticides frequently contain petroleum or coal tar distillates, or other flammable liquids. Miscibility with water depends upon the composition. Toxic if swallowed, by skin contact or by inhalation.	2784
-	T4	TP1	F-A, S-A	Category D SW1	SG20 SG21	Colourless liquid with an extremely foul and persistent odour. Miscible with water. Decomposes rapidly in contact with acids and bases. Toxic if swallowed, by skin contact or by inhalation.	2785
-	T6	TP33	F-A, S-A	Category A SW2	-	Solid pesticides present a very wide range of toxic hazard. Toxic if swallowed, by skin contact or by inhalation.	2786
-	T3	TP33	F-A, S-A	Category A SW2	-	See entry above.	2786
-	T1	TP33	F-A, S-A	Category A SW2	-	See entry above.	2786
-	T14	TP2 TP13 TP27	F-E, S-D	Category B SW2	-	Pesticides frequently contain petroleum or coal tar distillates, or other flammable liquids. Miscibility with water depends upon the composition. Toxic if swallowed, by skin contact or by inhalation.	2787
-	T11	TP2 TP13 TP27	F-E, S-D	Category B SW2	-	See entry above.	2787
-	T14	TP2 TP13 TP27	F-A, S-A	Category A SW2	-	A wide variety of toxic liquids. Toxic if swallowed, by skin contact or by inhalation.	2788
-	T11	TP2 TP13 TP27	F-A, S-A	Category A SW2	-	See entry above.	2788
-	T7	TP2 TP28	F-A, S-A	Category A SW2	-	See entry above.	2788
-	T7	TP2	F-E, S-C	Category A	-	Colourless flammable liquid with a pungent odour. When pure, crystallizes below 16°C. Flashpoint: 40°C c.c. (pure product), 60°C c.c. (80% solution). Explosive limits: 4% to 17%. Miscible with water. Corrosive to lead and most other metals. Corrosive to skin, eyes and mucous membranes.	2789
-	T7	TP2	F-A, S-B	Category A	-	Colourless liquid with a pungent odour. Miscible with water. Corrosive to lead and most other metals. Corrosive to skin, eyes and mucous membranes.	2790

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						Limited quantities	Excepted quantities	Instructions	Provisions	Instructions	Provisions
(1)	(2) 3.1.2	(3) 2.0	(4) 2.0	(5) 2.0.1.3	(6) 3.3	(7a) 3.4	(7b) 3.5	(8) 4.1.4	(9) 4.1.4	(10) 4.1.4	(11) 4.1.4
2790	ACETIC ACID SOLUTION more than 10% and less than 50% acid, by mass	8	–	III	–	5 L	E1	P001 LP01	–	IBC03	–
2793	FERROUS METAL BORINGS, SHAVINGS, TURNINGS, or CUTTINGS in a form liable to self-heating	4.2	–	III	223 931	0	E1	P003 LP02	PP20 PP100 L3	IBC08	B4 B6
2794	BATTERIES, WET, FILLED WITH ACID electric storage	8	–	–	295	1 L	E0	P801	–	–	–
2795	BATTERIES, WET, FILLED WITH ALKALI electric storage	8	–	–	295	1 L	E0	P801	–	–	–
2796	SULPHURIC ACID with not more than 51% acid or BATTERY FLUID, ACID	8	–	II	–	1 L	E2	P001	–	IBC02	B20
2797	BATTERY FLUID, ALKALI	8	–	II	–	1 L	E2	P001	–	IBC02	–
2798	PHENYLPHOSPHORUS DICHLORIDE	8	–	II	–	1 L	E0	P001	–	IBC02	–
2799	PHENYLPHOSPHORUS THIODICHLORIDE	8	–	II	–	1 L	E0	P001	–	IBC02	–
2800	BATTERIES, WET, NON-SPILLABLE electric storage	8	–	–	29 238	1 L	E0	P003	PP16	–	–
2801	DYE, LIQUID, CORROSIVE, N.O.S. or DYE INTERMEDIATE, LIQUID, CORROSIVE, N.O.S.	8	–	I	274	0	E0	P001	–	–	–
2801	DYE, LIQUID, CORROSIVE, N.O.S. or DYE INTERMEDIATE, LIQUID, CORROSIVE, N.O.S.	8	–	II	274	1 L	E2	P001	–	IBC02	–
2801	DYE, LIQUID, CORROSIVE, N.O.S. or DYE INTERMEDIATE, LIQUID, CORROSIVE, N.O.S.	8	–	III	223 274	5 L	E1	P001 LP01	–	IBC03	–
2802	COPPER CHLORIDE	8	– P	III	–	500 g	E1	P002 LP02	–	IBC08	B3

(12)	Portable tanks and bulk containers		EmS	Stowage and handling	Segregation	Properties and observations	UN No.
	Tank instructions	Provisions					
(13) 4.2.5 4.3	(14) 4.2.5	(15) 5.4.3.2 7.8	(16a) 7.1 7.3–7.7	(16b) 7.2–7.7	(17)	(18)	
–	T4	TP1	F-A, S-B	Category A	–	Colourless liquid with a pungent odour. Miscible with water. Corrosive to lead and most other metals. Corrosive to skin, eyes and mucous membranes.	2790
–	BK2	–	F-G, S-J	Category A H1	SG26	These cargoes are liable to self-heating and to ignite spontaneously, particularly when in a finely divided form, wet or contaminated with such materials as unsaturated cutting oil, oily rags and other combustible matter. Self-heating or inadequate ventilation may cause dangerous depletion of oxygen in the stowage spaces. Excessive amounts of cast iron borings or organic materials may encourage heating. The swarf should be protected from moisture prior to and after loading. If, during loading, the weather is inclement, hatches should be closed or otherwise protected to keep the material dry.	2793
–	–	–	F-A, S-B	Category A SW16	–	Metal plates immersed in acid electrolyte in a glass, hard rubber or plastics receptacle. When electrically charged, may cause fire through short-circuiting of terminals. Acid electrolyte is corrosive to most metals. Causes burns to skin, eyes and mucous membranes. Used batteries being transported for disposal or reclamation should be carefully checked prior to shipment to ensure the integrity of each battery and its suitability for transport.	2794
–	–	–	F-A, S-B	Category A SW16	SG35	Metal plates immersed in alkaline electrolyte in a glass, hard rubber or plastics receptacle. When electrically charged, may cause fire through short-circuiting of terminals. Alkaline electrolyte is corrosive to aluminium, zinc and tin. Reacts violently with acids. Causes burns to skin, eyes and mucous membranes. Used batteries being transported for disposal or reclamation should be carefully checked prior to shipment to ensure the integrity of each battery and its suitability for transport.	2795
–	T8	TP2	F-A, S-B	Category B	–	Colourless liquid, mixture not exceeding 1.405 relative density. Highly corrosive to most metals. Causes burns to skin, eyes and mucous membranes.	2796
–	T7	TP2 TP28	F-A, S-B	Category A	SG22 SG35	Reacts violently with acids. Reacts with ammonium salts, evolving ammonia gas. Corrosive to aluminium, zinc and tin.	2797
–	T7	TP2	F-A, S-B	Category B SW2	–	Colourless liquid. Causes burns to skin, eyes and mucous membranes.	2798
–	T7	TP2	F-A, S-B	Category B SW2	–	Colourless liquid which fumes slightly in air. Reacts with water or steam, evolving toxic and flammable vapours. Causes burns to skin, eyes and mucous membranes.	2799
–	–	–	F-A, S-B	Category A	–	Metal plates immersed in gelled alkaline or acid electrolyte in a glass, hard rubber or plastics receptacle of a non-spillable type. When electrically charged, may cause fire through short-circuiting of terminals. Cause burns to skin, eyes and mucous membranes.	2800
–	T14	TP2 TP27	F-A, S-B	Category A	–	A wide range of corrosive liquids. Cause burns to skin, eyes and mucous membranes.	2801
–	T11	TP2 TP27	F-A, S-B	Category A	–	See entry above.	2801
–	T7	TP1 TP28	F-A, S-B	Category A	–	See entry above.	2801
–	T1	TP33	F-A, S-B	Category A	–	White to yellow-brown crystals or powder. Partially to fully soluble in water. Corrosive to steel. Causes burns to skin, eyes and mucous membranes.	2802

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						Limited quantities	Excepted quantities	Instructions	Provisions	Instructions	Provisions
(1)	(2) 3.1.2	(3) 2.0	(4) 2.0	(5) 2.0.1.3	(6) 3.3	(7a) 3.4	(7b) 3.5	(8) 4.1.4	(9) 4.1.4	(10) 4.1.4	(11) 4.1.4
2803	GALLIUM	8	–	III	–	5 kg	E0	P800	PP41	–	–
2805	LITHIUM HYDRIDE, FUSED SOLID	4.3	–	II	–	500 g	E2	P410	PP31 PP40	IBC04	–
2806	LITHIUM NITRIDE	4.3	–	I	–	0	E0	P403	PP31	IBC04	B1
2807	MAGNETIZED MATERIAL	9	–	–	960	–	–	–	–	–	–
2809	MERCURY	8	6.1	III	365	5 kg	E0	P800	–	–	–
2810	TOXIC LIQUID, ORGANIC, N.O.S.	6.1	–	I	274 315	0	E5	P001	–	–	–
2810	TOXIC LIQUID, ORGANIC, N.O.S.	6.1	–	II	274	100 mL	E4	P001	–	IBC02	–
2810	TOXIC LIQUID, ORGANIC, N.O.S.	6.1	–	III	223 274	5 L	E1	P001 LP01	–	IBC03	–
2811	TOXIC SOLID, ORGANIC, N.O.S.	6.1	–	I	274	0	E5	P002	–	IBC99	–
2811	TOXIC SOLID, ORGANIC, N.O.S.	6.1	–	II	274	500 g	E4	P002	–	IBC08	B4 B21
2811	TOXIC SOLID, ORGANIC, N.O.S.	6.1	–	III	223 274	5 kg	E1	P002	–	IBC08	B3
2812	SODIUM ALUMINATE, SOLID	8	–	–	960	–	–	–	–	–	–
2813	WATER-REACTIVE SOLID, N.O.S.	4.3	–	I	274	0	E0	P403	PP31	IBC99	–
2813	WATER-REACTIVE SOLID, N.O.S.	4.3	–	II	274	500 g	E2	P410	PP31 PP40	IBC07	B4 B21
2813	WATER-REACTIVE SOLID, N.O.S.	4.3	–	III	223 274	1 kg	E1	P410	PP31	IBC08	B4
2814	INFECTIOUS SUBSTANCE, AFFECTING HUMANS	6.2	–	–	318 341	0	E0	P620	–	–	–
2815	N-AMINOETHYLPIPERAZINE	8	6.1	III	–	5 L	E1	P001 LP01	–	IBC03	–
2817	AMMONIUM HYDROGEN-DIFLUORIDE SOLUTION	8	6.1	II	–	1 L	E2	P001	–	IBC02	B20
2817	AMMONIUM HYDROGEN-DIFLUORIDE SOLUTION	8	6.1	III	223	5 L	E1	P001	–	IBC03	–

(12)	Portable tanks and bulk containers		EmS	Stowage and handling	Segregation	Properties and observations	UN No.
	Tank instructions	Provisions					
(13) 4.2.5 4.3	(14) 4.2.5	(15) 5.4.3.2 7.8	(16a) 7.1 7.3–7.7	(16b) 7.2–7.7	(17)	(18)	
–	T1	TP33	F-A, S-B	Category B SW1	–	Silvery-white metallic element that melts at 29°C, becoming a bright, shiny liquid. Insoluble in water. Highly corrosive to aluminium. Harmful if swallowed, by skin contact or by inhalation. Special care should be taken if a leakage occurs when carried in aluminium freight containers. Carriage should be prohibited in hovercraft and other ships constructed from aluminium.	2803
–	T3	TP33	F-G, S-N	Category E H1	SG26 SG35	White, crystalline mass. Reacts with water, moisture or acids, evolving hydrogen which may be ignited by the heat of the reaction.	2805
–	–	–	F-A, S-O	Category E	–	Brownish-red crystals or fine, free-flowing powder. Reacts slowly with water to form lithium hydroxide and ammonia.	2806
–	–	–	–	–	–	Not subject to the provisions of this Code but may be subject to provisions governing the transport of dangerous goods by other modes.	2807
–	–	–	F-A, S-B	Category B SW2	SG24	A silvery metallic element occurring in the liquid state at normal temperatures. Relative density: 13.546. Melting point: –39°C. Highly corrosive to aluminium. Toxic if swallowed, by skin contact or by inhalation. Special care should be taken if a leakage occurs during transport, especially when carried in breakable packages and in aluminium freight containers. Carriage should be prohibited in hovercraft and other ships constructed from aluminium.	2809
–	T14	TP2 TP13 TP27	F-A, S-A	Category B SW2	–	Toxic if swallowed, by skin contact or by inhalation.	2810
–	T11	TP2 TP13 TP27	F-A, S-A	Category B SW2	–	Toxic if swallowed, by skin contact or by inhalation.	2810
–	T7	TP1 TP28	F-A, S-A	Category A SW2	–	See entry above.	2810
–	T6	TP33	F-A, S-A	Category B	–	Toxic if swallowed, by skin contact or by inhalation.	2811
–	T3	TP33	F-A, S-A	Category B	–	See entry above.	2811
–	T1	TP33	F-A, S-A	Category A	–	See entry above.	2811
–	–	–	–	–	–	Not subject to the provisions of this Code but may be subject to provisions governing the transport of dangerous goods by other modes.	2812
–	T9	TP7 TP33	F-G, S-N	Category E SW2 H1	SG26	–	2813
–	T3	TP33	F-G, S-N	Category E SW2 H1	SG26	–	2813
–	T1	TP33	F-G, S-N	Category E SW2 H1	SG26	–	2813
–	BK2	–	F-A, S-T	SW7	–	Substances which are dangerous to humans or to humans and animals.	2814
–	T4	TP1	F-A, S-B	Category B SW1 SW2 H2	–	Yellow liquid. Miscible with water. Corrosive to skin, eyes and mucous membranes. Toxic if swallowed, by skin contact or by inhalation.	2815
–	T8	TP2 TP13	F-A, S-B	Category B SW2	–	Colourless liquid. Miscible with water. Highly corrosive to most metals and glass. Toxic if swallowed, by skin contact or by inhalation. Causes burns to skin, eyes and mucous membranes.	2817
–	T4	TP1 TP13	F-A, S-B	Category B SW2	–	See entry above.	2817

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						Limited quantities	Excepted quantities	Instructions	Provisions	Instructions	Provisions
(1)	(2) 3.1.2	(3) 2.0	(4) 2.0	(5) 2.0.1.3	(6) 3.3	(7a) 3.4	(7b) 3.5	(8) 4.1.4	(9) 4.1.4	(10) 4.1.4	(11) 4.1.4
2818	AMMONIUM POLYSULPHIDE SOLUTION	8	6.1	II	–	1 L	E2	P001	–	IBC02	–
2818	AMMONIUM POLYSULPHIDE SOLUTION	8	6.1	III	223	5 L	E1	P001	–	IBC03	–
2819	AMYL ACID PHOSPHATE	8	–	III	–	5 L	E1	P001 LP01	–	IBC03	–
2820	BUTYRIC ACID	8	–	III	–	5 L	E1	P001 LP01	–	IBC03	–
2821	PHENOL SOLUTION	6.1	–	II	–	100 mL	E4	P001	–	IBC02	–
2821	PHENOL SOLUTION	6.1	–	III	223	5 L	E1	P001 LP01	–	IBC03	–
2822	2-CHLOROPYRIDINE	6.1	–	II	–	100 mL	E4	P001	–	IBC02	–
2823	CROTONIC ACID, SOLID	8	–	III	–	5 kg	E1	P002 LP02	–	IBC08	B3 B21
2826	ETHYL CHLOROTHIOFORMATE	8	3 P	II	–	0	E0	P001	–	–	–
2829	CAPROIC ACID	8	–	III	–	5 L	E1	P001 LP01	–	IBC03	–
2830	LITHIUM FERROSILICON	4.3	–	II	–	500 g	E2	P410 PP31 PP40	–	IBC07	B4 B21
2831	1,1,1-TRICHLOROETHANE	6.1	–	III	–	5 L	E1	P001 LP01	–	IBC03	–
2834	PHOSPHOROUS ACID	8	–	III	–	5 kg	E1	P002 LP02	–	IBC08	B3
2835	SODIUM ALUMINIUM HYDRIDE	4.3	–	II	–	500 g	E0	P410 PP31 PP40	–	IBC04	–
2837	BISULPHATES, AQUEOUS SOLUTION	8	–	II	–	1 L	E2	P001	–	IBC02	–
2837	BISULPHATES, AQUEOUS SOLUTION	8	–	III	223	5 L	E1	P001 LP01	–	IBC03	–
2838	VINYL BUTYRATE, STABILIZED	3	–	II	386	1 L	E2	P001	–	IBC02	–
2839	ALDOL	6.1	–	II	–	100 mL	E4	P001	–	IBC02	–

UN No.	Portable tanks and bulk containers		EmS	Stowage and handling	Segregation	Properties and observations	UN No.
	Tank instructions	Provisions					
(12)	(13) 4.2.5 4.3	(14) 4.2.5	(15) 5.4.3.2 7.8	(16a) 7.1 7.3–7.7	(16b) 7.2–7.7	(17)	(18)
–	T7	TP2 TP13	F-A, S-B	Category B SW1 SW2 H2	SG35	Unstable yellowish liquid with a foul odour (of rotten eggs). Miscible with water. Reacts violently with acids. Decomposes in contact with acids, evolving hydrogen sulphide, a toxic and flammable gas. Toxic if swallowed, by skin contact or by inhalation. Causes burns to skin, eyes and mucous membranes.	2818
–	T4	TP1 TP13	F-A, S-B	Category B SW1 SW2 H2	SG35	See entry above.	2818
–	T4	TP1	F-A, S-B	Category A	–	Clear colourless liquid. A mixture of primary and amyl isomers. Immiscible with water. Corrosive to skin, eyes and mucous membranes.	2819
–	T4	TP1	F-A, S-B	Category A SW1 H2	–	Colourless liquid with a penetrating and unpleasant odour. Freezing point: –5°C to –8°C. Miscible with water. Corrosive to most metals. Harmful if swallowed or by inhalation. Corrosive to skin, eyes and mucous membranes.	2820
–	T7	TP2	F-A, S-A	Category A	–	Yellowish solutions with a perceptible odour. Toxic if swallowed, by skin contact or by inhalation. Rapidly absorbed through the skin.	2821
–	T4	TP1	F-A, S-A	Category A	–	See entry above.	2821
–	T7	TP2	F-A, S-A	Category A SW2	–	Colourless oily liquid. Slightly miscible with water. Toxic if swallowed, by skin contact or by inhalation.	2822
–	T1	TP33	F-A, S-B	Category A SW1 H2	–	White crystalline solid. Soluble in water. Decomposes when heated, evolving toxic fumes. Causes burns to skin, eyes and mucous membranes.	2823
–	T7	TP2	F-E, S-C	Category A SW2	–	Colourless, flammable liquid. Flashpoint: 29°C c.c. Causes burns to skin, eyes and mucous membranes.	2826
–	T4	TP1	F-A, S-B	Category A	–	Oily, colourless or yellowish liquid. Melting point: –4°C. Partially miscible with water. Corrosive to mild steel. Causes burns to skin, eyes and mucous membranes.	2829
–	T3	TP33	F-G, S-N	Category E SW2 SW5 H1	SG26	Dark, crystalline, metal-like powder or brittle lumps. In contact with moisture, evolves flammable and toxic gases.	2830
–	T4	TP1	F-A, S-A	Category A SW2	–	Colourless liquid. Immiscible with water. Decomposes when heated, evolving highly toxic fumes (phosgene and hydrogen chloride). Toxic if swallowed, by skin contact or by inhalation. Narcotic in high concentrations.	2831
–	T1	TP33	F-A, S-B	Category A SW1	–	Colourless to yellow deliquescent crystals. Soluble in water. Mildly corrosive to most metals. Causes burns to skin, eyes and mucous membranes.	2834
–	T3	TP33	F-G, S-O	Category E H1	SG26 SG35	White, crystalline solid. Reacts with water, moisture or acids, evolving hydrogen, which may be ignited by the heat of the reaction.	2835
–	T7	TP2	F-A, S-B	Category A	–	Colourless to white liquid. Miscible with water. Corrosive to most metals. Causes burns to skin, eyes and mucous membranes.	2837
–	T4	TP1	F-A, S-B	Category A	–	See entry above.	2837
–	T4	TP1	F-E, S-D	Category C SW1	–	Colourless liquid with a pungent odour. Flashpoint: 12°C c.c. Explosive limits: 1.4% to 8.8%. Immiscible with water. Irritating to skin, eyes and mucous membranes.	2838
–	T7	TP2	F-A, S-A	Category A SW1 H2	–	Clear, colourless to yellow viscous liquid. Miscible with water. Decomposes at 85°C, evolving toxic fumes. May react vigorously with oxidizing substances. Toxic if swallowed, by skin contact or by inhalation.	2839

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						Limited quantities	Excepted quantities	Instructions	Provisions	Instructions	Provisions
(1)	(2) 3.1.2	(3) 2.0	(4) 2.0	(5) 2.0.1.3	(6) 3.3	(7a) 3.4	(7b) 3.5	(8) 4.1.4	(9) 4.1.4	(10) 4.1.4	(11) 4.1.4
2840	BUTYRALDOXIME	3	–	III	–	5 L	E1	P001 LP01	–	IBC03	–
2841	DI- <i>n</i> -AMYLAMINE	3	6.1	III	–	5 L	E1	P001	–	IBC03	–
2842	NITROETHANE	3	–	III	–	5 L	E1	P001 LP01	–	IBC03	–
2844	CALCIUM MANGANESE SILICON	4.3	–	III	–	1 kg	E1	P410	PP31	IBC08	B4
2845	PYROPHORIC LIQUID, ORGANIC, N.O.S.	4.2	–	I	274	0	E0	P400	–	–	–
2846	PYROPHORIC SOLID, ORGANIC, N.O.S.	4.2	–	I	274	0	E0	P404	PP31	–	–
2849	3-CHLOROPROPANOL-1	6.1	–	III	–	5 L	E1	P001 LP01	–	IBC03	–
2850	PROPYLENE TETRAMER	3	– P	III	–	5 L	E1	P001 LP01	–	IBC03	–
2851	BORON TRIFLUORIDE DIHYDRATE	8	–	II	–	1 L	E2	P001	–	IBC02	–
2852	DIPICRYL SULPHIDE, WETTED with not less than 10% water, by mass	4.1	–	I	28	0	E0	P406	PP24 PP31	–	–
2853	MAGNESIUM FLUOROSILICATE	6.1	–	III	–	5 kg	E1	P002 LP02	–	IBC08	B3
2854	AMMONIUM FLUOROSILICATE	6.1	–	III	–	5 kg	E1	P002 LP02	–	IBC08	B3
2855	ZINC FLUOROSILICATE	6.1	–	III	–	5 kg	E1	P002 LP02	–	IBC08	B3
2856	FLUOROSILICATES, N.O.S.	6.1	–	III	274	5 kg	E1	P002 LP02	–	IBC08	B3
2857	REFRIGERATING MACHINES containing non-flammable, non-toxic gases or ammonia solutions (UN 2672)	2.2	–	–	119	0	E0	P003	PP32	–	–
2858	ZIRCONIUM, DRY coiled wire, finished metal sheets, strip (thinner than 254 microns but not thinner than 18 microns)	4.1	–	III	921	5 kg	E1	P002 LP02	PP100 L3	–	–
2859	AMMONIUM METAVANADATE	6.1	–	II	–	500 g	E4	P002	–	IBC08	B4 B21
2861	AMMONIUM POLYVANADATE	6.1	–	II	–	500 g	E4	P002	–	IBC08	B4 B21

UN No.	Portable tanks and bulk containers		EmS	Stowage and handling	Segregation	Properties and observations	UN No.
	Tank instructions	Provisions					
(12)	(13) 4.2.5 4.3	(14) 4.2.5	(15) 5.4.3.2 7.8	(16a) 7.1 7.3–7.7	(16b) 7.2–7.7	(17)	(18)
–	T2	TP1	F-E, S-D	Category A	–	Colourless liquid. Immiscible with water. Flashpoint: 58°C c.c. Harmful by inhalation. Irritating to skin, eyes and mucous membranes.	2840
–	T4	TP1	F-E, S-D	Category A	–	Colourless liquid with an ammoniacal odour. Flashpoint: 52°C c.c. Slightly miscible with water. Toxic if swallowed, by skin contact or by inhalation.	2841
–	T2	TP1	F-E, S-D	Category A	–	Colourless, oily liquid. Flashpoint: 28°C c.c. Explosive limits: 3.4% to . . . When involved in a fire, evolves nitrous toxic fumes. Slightly soluble in water. Irritating to skin, eyes and mucous membranes.	2842
–	T1	TP33	F-G, S-N	Category A SW5 H1	SG26 SG35	In contact with water, evolves hydrogen, a flammable gas. In contact with acid, evolves silane, a spontaneously flammable gas.	2844
–	T22	TP2 TP7	F-G, S-M	Category D H1	SG26 SG63	Highly flammable liquids, may ignite spontaneously in moist air. In contact with air, evolve irritating and slightly toxic fumes.	2845
–	–	–	F-G, S-M	Category D H1	SG26	Liable to ignite spontaneously in air. If shaken, may produce sparks. In contact with water, evolve hydrogen, a flammable gas.	2846
–	T4	TP1	F-A, S-A	Category A	–	Colourless to light-yellow liquid. Miscible with water. Mildly corrosive to steel. Toxic if swallowed, by skin contact or by inhalation.	2849
–	T2	TP2	F-E, S-E	Category A	–	Colourless liquid. Immiscible with water. Irritating to skin, eyes and mucous membranes.	2850
–	T7	TP2	F-A, S-B	Category B SW1 SW2 H2	–	Colourless, non-fuming liquid. Boiling range: 58°C to 60°C. Reacts with water, evolving corrosive and toxic fumes. Corrosive to mild steel. Causes burns to skin, eyes and mucous membranes.	2851
–	–	–	F-B, S-J	Category D	SG7 SG30	Desensitized explosive. Golden-yellow, crystalline leaflets. Explosive and sensitive to shock and heat in the dry state. May form extremely sensitive compounds with heavy metals or their salts.	2852
–	T1	TP33	F-A, S-A	Category A	SG35	Solids which react with acids, evolving hydrogen fluoride and silicon tetrafluoride, irritating and corrosive gases. Toxic if swallowed, by skin contact or by dust inhalation.	2853
–	T1	TP33	F-A, S-A	Category A	SG35	Solids which react with acids, evolving hydrogen fluoride and silicon tetrafluoride, irritating and corrosive gases. Toxic if swallowed, by skin contact or by dust inhalation.	2854
–	T1	TP33	F-A, S-A	Category A	SG35	Solids which react with acids, evolving hydrogen fluoride and silicon tetrafluoride, irritating and corrosive gases. Toxic if swallowed, by skin contact or by dust inhalation.	2855
–	T1	TP33	F-A, S-A	Category A	SG35	Solids which react with acids, evolving hydrogen fluoride and silicon tetrafluoride, irritating and corrosive gases. Toxic if swallowed, by skin contact or by dust inhalation.	2856
–	–	–	F-C, S-V	Category A	–	–	2857
–	–	–	F-G, S-G	Category A H1	SG25 SG26	Hard silvery metal.	2858
–	T3	TP33	F-A, S-A	Category A	SG6 SG8 SG10 SG12	White crystalline powder. Slightly soluble in water. May act as an oxidizing substance. Toxic if swallowed, by skin contact or by inhalation.	2859
–	T3	TP33	F-A, S-A	Category A	SG6 SG8 SG10 SG12	Orange powder. Slightly soluble in water. May act as an oxidizing substance. Toxic if swallowed, by skin contact or by inhalation.	2861

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UN No.	Proper shipping name (PSN)	Class or division	Subsidiary risk(s)	Packing group	Special provisions	Limited and excepted quantity provisions		Packing		IBC	
						Limited quantities	Excepted quantities	Instructions	Provisions	Instructions	Provisions
(1)	(2) 3.1.2	(3) 2.0	(4) 2.0	(5) 2.0.1.3	(6) 3.3	(7a) 3.4	(7b) 3.5	(8) 4.1.4	(9) 4.1.4	(10) 4.1.4	(11) 4.1.4
2862	VANADIUM PENTOXIDE, non-fused form	6.1	–	III	–	5 kg	E1	P002 LP02	–	IBC08	B3
2863	SODIUM AMMONIUM VANADATE	6.1	–	II	–	500 g	E4	P002	–	IBC08	B4 B21
2864	POTASSIUM METAVANADATE	6.1	–	II	–	500 g	E4	P002	–	IBC08	B4 B21
2865	HYDROXYLAMINE SULPHATE	8	–	III	–	5 kg	E1	P002 LP02	–	IBC08	B3
2869	TITANIUM TRICHLORIDE MIXTURE	8	–	II	–	1 kg	E2	P002	–	IBC08	B4 B21
2869	TITANIUM TRICHLORIDE MIXTURE	8	–	III	223	5 kg	E1	P002 LP02	–	IBC08	B3
2870	ALUMINIUM BOROXYDRIDE	4.2	4.3	I	–	0	E0	P400	–	–	–
2870	ALUMINIUM BOROXYDRIDE IN DEVICES	4.2	4.3	I	–	0	E0	P002	PP13	–	–
2871	ANTIMONY POWDER	6.1	–	III	–	5 kg	E1	P002 LP02	–	IBC08	B3
2872	DIBROMOCHLOROPROPANES	6.1	–	II	–	100 mL	E4	P001	–	IBC02	–
2872	DIBROMOCHLOROPROPANES	6.1	–	III	223	5 L	E1	P001 LP01	–	IBC03	–
2873	DIBUTYLAMINOETHANOL	6.1	–	III	–	5 L	E1	P001 LP01	–	IBC03	–
2874	FURFURYL ALCOHOL	6.1	–	III	–	5 L	E1	P001 LP01	–	IBC03	–
2875	HEXACHLOROPHENE	6.1	–	III	–	5 kg	E1	P002 LP02	–	IBC08	B3
2876	RESORCINOL	6.1	–	III	–	5 kg	E1	P002 LP02	–	IBC08	B3
2878	TITANIUM SPONGE GRANULES or TITANIUM SPONGE POWDERS	4.1	–	III	223	5 kg	E1	P002 LP02	PP100 L3	IBC08	B4
2879	SELENIUM OXYCHLORIDE	8	6.1	I	–	0	E0	P001	–	–	–
2880	CALCIUM HYPOCHLORITE, HYDRATED or CALCIUM HYPOCHLORITE, HYDRATED MIXTURE with not less than 5.5% but not more than 16% water	5.1	– P	II	314 322	1 kg	E2	P002	PP85	–	–

UN No.	Portable tanks and bulk containers		EmS	Stowage and handling	Segregation	Properties and observations	UN No.
	Tank instructions	Provisions					
(12)	(13) 4.2.5 4.3	(14) 4.2.5	(15) 5.4.3.2 7.8	(16a) 7.1 7.3–7.7	(16b) 7.2–7.7	(17)	(18)
–	T1	TP33	F-A, S-A	Category A	–	Brownish powder. Slightly soluble in water. Toxic if swallowed, by skin contact or by inhalation.	2862
–	T3	TP33	F-A, S-A	Category A	–	Orange wet cake (with 10% to 15% water). Soluble in water. Toxic if swallowed, by skin contact or by dust inhalation.	2863
–	T3	TP33	F-A, S-A	Category A	–	White crystalline powder. Slightly soluble in water. Toxic if swallowed, by skin contact or by inhalation.	2864
–	T1	TP33	F-A, S-B	Category A	–	Colourless to white crystalline powder. Soluble in water. May decompose explosively when heated. Causes burns to skin, eyes and mucous membranes.	2865
–	T3	TP33	F-A, S-B	Category A SW2	–	Violet crystalline solid. Reacts in moist air or in water, evolving heat and hydrogen chloride, an irritating and corrosive gas apparent as white fumes. In the presence of moisture, corrosive to most metals. Causes burns to skin, eyes and mucous membranes.	2869
–	T1	TP33	F-A, S-B	Category A SW2	–	See entry above.	2869
–	T21	TP7 TP33	F-G, S-M	Category D H1	SG26	Liquid. Ignites spontaneously in air. Reacts with water or steam to produce heat or hydrogen, which may form explosive mixtures with air.	2870
–	–	–	F-G, S-M	Category D H1	SG26	–	2870
–	T1	TP33	F-A, S-A	Category A	–	Metallic antimony in the form of a fine grey powder. Insoluble in water. Toxic if swallowed, by skin contact or by dust inhalation.	2871
–	T7	TP2	F-A, S-A	Category A	–	Colourless liquid with a perceptible odour. Immiscible with water. Toxic if swallowed, by skin contact or by inhalation.	2872
–	T4	TP1	F-A, S-A	Category A	–	See entry above.	2872
–	T4	TP1	F-A, S-A	Category A	–	Colourless liquid with a perceptible odour. Miscible with water. Toxic if swallowed, by skin contact or by inhalation.	2873
–	T4	TP1	F-A, S-A	Category A	SG17 SG35	Clear, colourless, mobile liquid, becoming brown to dark-red upon exposure to light and air. Miscible with water. Reacts explosively with oxidizing substances. Toxic if swallowed, by skin contact or by inhalation.	2874
–	T1	TP33	F-A, S-A	Category A	–	White, odourless powder or crystals. Insoluble in water. Toxic if swallowed, by skin contact or by dust inhalation.	2875
–	T1	TP33	F-A, S-A	Category A	–	White to pink crystals. Soluble in water. Toxic if swallowed, by skin contact or by dust inhalation.	2876
–	T1	TP33	F-G, S-G	Category D H1	SG17 SG25 SG26	Silvery grey granules or dark grey, amorphous powder. May react with carbon dioxide, evolving oxygen. Forms explosive mixtures with oxidizing substances.	2878
–	T10	TP2 TP13	F-A, S-B	Category E SW2	–	Colourless, yellowish liquid. Reacts violently with water, evolving hydrogen chloride, an irritating and corrosive gas apparent as white fumes. In the presence of moisture, highly corrosive to most metals. Toxic if swallowed, by skin contact or by inhalation. Causes severe burns to skin, eyes and mucous membranes.	2879
–	–	–	F-H, S-Q	Category D SW1 SW11	SG35 SG38 SG49 SG53 SG60	White or yellowish solid (powder, granules or tablets) with chlorine-like odour. Soluble in water. May cause fire in contact with organic material or ammonium compounds. Substances are liable to exothermic decomposition at elevated temperatures. This condition may lead to fire or explosion. Decomposition can be initiated by heat or by impurities (e.g. powdered metals (iron, manganese, cobalt, magnesium) and their compounds). Liable to heat slowly. Reacts with acids, evolving chlorine, an irritating, corrosive and toxic gas. In the presence of moisture, corrosive to most metals. Dust irritates mucous membranes.	2880

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UN No.	Proper shipping name (PSN)	Class or division	Subsidiary risk(s)	Packing group	Special provisions	Limited and excepted quantity provisions		Packing		IBC	
						Limited quantities	Excepted quantities	Instructions	Provisions	Instructions	Provisions
(1)	(2) 3.1.2	(3) 2.0	(4) 2.0	(5) 2.0.1.3	(6) 3.3	(7a) 3.4	(7b) 3.5	(8) 4.1.4	(9) 4.1.4	(10) 4.1.4	(11) 4.1.4
2880	CALCIUM HYPOCHLORITE, HYDRATED or CALCIUM HYPOCHLORITE, HYDRATED MIXTURE with not less than 5.5% but not more than 16% water	5.1	– P	III	223 314	5 kg	E1	P002	PP85	–	–
2881	METAL CATALYST, DRY	4.2	–	I	274	0	E0	P404	PP31	–	–
2881	METAL CATALYST, DRY	4.2	–	II	274	0	E0	P410	PP31	IBC06	B21
2881	METAL CATALYST, DRY	4.2	–	III	223 274	0	E1	P002 LP02	PP31 L4	IBC08	B4
2900	INFECTIOUS SUBSTANCE, AFFECTING ANIMALS only	6.2	–	–	318 341	0	E0	P620	–	–	–
2901	BROMINE CHLORIDE	2.3	5.1/8	–	–	0	E0	P200	–	–	–
2902	PESTICIDE, LIQUID, TOXIC, N.O.S.	6.1	–	I	61 274	0	E5	P001	–	–	–
2902	PESTICIDE, LIQUID, TOXIC, N.O.S.	6.1	–	II	61 274	100 mL	E4	P001	–	IBC02	–
2902	PESTICIDE, LIQUID, TOXIC, N.O.S.	6.1	–	III	61 223 274	5 L	E1	P001 LP01	–	IBC03	–
2903	PESTICIDE, LIQUID, TOXIC, FLAMMABLE, N.O.S. flashpoint not less than 23°C	6.1	3	I	61 274	0	E5	P001	–	–	–
2903	PESTICIDE, LIQUID, TOXIC, FLAMMABLE, N.O.S. flashpoint not less than 23°C	6.1	3	II	61 274	100 mL	E4	P001	–	IBC02	–
2903	PESTICIDE, LIQUID, TOXIC, FLAMMABLE, N.O.S. flashpoint not less than 23°C	6.1	3	III	61 223 274	5 L	E1	P001	–	IBC03	–
2904	CHLOROPHENOLATES, LIQUID or PHENOLATES, LIQUID	8	–	III	–	5 L	E1	P001 LP01	–	IBC03	–
2905	CHLOROPHENOLATES, SOLID or PHENOLATES, SOLID	8	–	III	–	5 kg	E1	P002 LP02	–	IBC08	B3
2907	ISOSORBIDE DINITRATE MIXTURE with not less than 60% lactose, mannose, starch, or calcium hydrogen phosphate	4.1	–	II	127	0	E0	P406	PP26 PP80	IBC06	B12 B21
2908	RADIOACTIVE MATERIAL, EXCEPTED PACKAGE – EMPTY PACKAGING	7	See SP290	–	290	0	E0	See 4.1.9	See 4.1.9	See 4.1.9	See 4.1.9

UN No.	Portable tanks and bulk containers		EmS	Stowage and handling	Segregation	Properties and observations	UN No.
	Tank instructions	Provisions					
(12)	(13) 4.2.5 4.3	(14) 4.2.5	(15) 5.4.3.2 7.8	(16a) 7.1 7.3–7.7	(16b) 7.2–7.7	(17)	(18)
–	–	–	F-H, S-Q	Category D SW1 SW11	SG35 SG38 SG49 SG53 SG60	White or yellowish solid (powder, granules or tablets) with chlorine-like odour. Soluble in water. May cause fire in contact with organic material or ammonium compounds. Substances are liable to exothermic decomposition at elevated temperatures. This condition may lead to fire or explosion. Decomposition can be initiated by heat or by impurities (e.g. powdered metals (iron, manganese, cobalt, magnesium) and their compounds). Liable to heat slowly. Reacts with acids, evolving chlorine, an irritating, corrosive and toxic gas. In the presence of moisture, corrosive to most metals. Dust irritates mucous membranes.	2880
–	T21	TP7 TP33	F-G, S-M	Category C H1	SG25 SG26	Liable to ignite spontaneously in air.	2881
–	T3	TP33	F-G, S-M	Category C H1	SG25 SG26	See entry above	2881
–	T1	TP33	F-G, S-M	Category C H1	SG25 SG26	See entry above.	2881
–	BK2	–	F-A, S-T	SW7	–	Substances which are dangerous to animals only. For action to be taken in the event of damage to, or leaking from, a package containing infectious substances, refer to 7.8.3.	2900
–	–	–	F-C, S-W	Category D SW2	SG6 SG19	Reddish-yellow non-flammable, toxic and corrosive gas. When heated to decomposition, emits highly toxic and corrosive fumes of bromine and chlorine. Reacts with water, evolving toxic and corrosive fumes. Powerful oxidizing agent which may cause violent fires with combustible materials. Much heavier than air. Highly irritating to skin, eyes and mucous membranes.	2901
–	T14	TP2 TP13 TP27	F-A, S-A	Category B SW2	–	Liquid pesticides which present a very wide range of toxic hazard. Miscibility with water depends upon the composition. Toxic if swallowed, by skin contact or by inhalation.	2902
–	T11	TP2 TP13 TP27	F-A, S-A	Category B SW2	–	Liquid pesticides which present a very wide range of toxic hazard. Miscibility with water depends upon the composition. Toxic if swallowed, by skin contact or by inhalation.	2902
–	T7	TP2 TP28	F-A, S-A	Category A SW2	–	See entry above.	2902
–	T14	TP2 TP13 TP27	F-E, S-D	Category B SW2	–	Liquid flammable pesticides having a flashpoint between 23°C and 60°C c.c., presenting a very wide range of toxic hazard. They frequently contain petroleum or coal tar distillates, or other flammable liquids. Flashpoint and miscibility with water depend upon the composition. Toxic if swallowed, by skin contact or by inhalation.	2903
–	T11	TP2 TP13 TP27	F-E, S-D	Category B SW2	–	See entry above.	2903
–	T7	TP2	F-E, S-D	Category A SW2	–	See entry above.	2903
–	–	–	F-A, S-B	Category A	–	A wide range of corrosive liquids. Cause burns to skin, eyes and mucous membranes.	2904
–	T1	TP33	F-A, S-B	Category A	–	A wide range of corrosive solids. Soluble in water. Cause burns to skin, eyes and mucous membranes.	2905
–	–	–	F-A, S-J	Category E	SG7 SG30	Desensitized explosive. Pure isosorbide dinitrate is explosive. May form extremely sensitive compounds with heavy metals or their salts.	2907
–	–	–	F-I, S-S	Category A	–	See 1.5.1 and 5.1.5.4.2.	2908

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						Limited quantities	Excepted quantities	Instructions	Provisions	Instructions	Provisions
(1)	(2) 3.1.2	(3) 2.0	(4) 2.0	(5) 2.0.1.3	(6) 3.3	(7a) 3.4	(7b) 3.5	(8) 4.1.4	(9) 4.1.4	(10) 4.1.4	(11) 4.1.4
2909	RADIOACTIVE MATERIAL, EXCEPTED PACKAGE – ARTICLES MANUFACTURED FROM NATURAL URANIUM or DEPLETED URANIUM or NATURAL THORIUM	7	See SP290	–	290	0	E0	See 4.1.9	See 4.1.9	See 4.1.9	See 4.1.9
2910	RADIOACTIVE MATERIAL, EXCEPTED PACKAGE – LIMITED QUANTITY OF MATERIAL	7	See SP290	–	290 368	0	E0	See 4.1.9	See 4.1.9	See 4.1.9	See 4.1.9
2911	RADIOACTIVE MATERIAL, EXCEPTED PACKAGE – INSTRUMENTS or ARTICLES	7	See SP290	–	290	0	E0	See 4.1.9	See 4.1.9	See 4.1.9	See 4.1.9
2912	RADIOACTIVE MATERIAL, LOW SPECIFIC ACTIVITY (LSA-I), non fissile or fissile-excepted	7	See SP172	–	172 317 325	0	E0	See 4.1.9	See 4.1.9	See 4.1.9	See 4.1.9
2913	RADIOACTIVE MATERIAL, SURFACE CONTAMINATED OBJECTS (SCO-I or SCO-II), non fissile or fissile-excepted	7	See SP172	–	172 317	0	E0	See 4.1.9	See 4.1.9	See 4.1.9	See 4.1.9
2915	RADIOACTIVE MATERIAL, TYPE A PACKAGE, non-special form, non fissile or fissile-excepted	7	See SP172	–	172 317 325	0	E0	See 4.1.9	See 4.1.9	See 4.1.9	See 4.1.9
2916	RADIOACTIVE MATERIAL, TYPE B(U) PACKAGE, non fissile or fissile-excepted	7	See SP172	–	172 317 325	0	E0	See 4.1.9	See 4.1.9	See 4.1.9	See 4.1.9
2917	RADIOACTIVE MATERIAL, TYPE B(M) PACKAGE, non fissile or fissile-excepted	7	See SP172	–	172 317 325	0	E0	See 4.1.9	See 4.1.9	See 4.1.9	See 4.1.9
2919	RADIOACTIVE MATERIAL TRANSPORTED UNDER SPECIAL ARRANGEMENT, non fissile or fissile-excepted	7	See SP172	–	172 317 325	0	E0	See 4.1.9	See 4.1.9	See 4.1.9	See 4.1.9
2920	CORROSIVE LIQUID, FLAMMABLE, N.O.S.	8	3	I	274	0	E0	P001	–	–	–
2920	CORROSIVE LIQUID, FLAMMABLE, N.O.S.	8	3	II	274	1 L	E2	P001	–	IBC02	–
2921	CORROSIVE SOLID, FLAMMABLE, N.O.S.	8	4.1	I	274	0	E0	P002	–	IBC99	–
2921	CORROSIVE SOLID, FLAMMABLE, N.O.S.	8	4.1	II	274	1 kg	E2	P002	–	IBC08	B4 B21
2922	CORROSIVE LIQUID, TOXIC, N.O.S.	8	6.1	I	274	0	E0	P001	–	–	–
2922	CORROSIVE LIQUID, TOXIC, N.O.S.	8	6.1	II	274	1 L	E2	P001	–	IBC02	–
2922	CORROSIVE LIQUID, TOXIC, N.O.S.	8	6.1	III	223 274	5 L	E1	P001	–	IBC03	–
2923	CORROSIVE SOLID, TOXIC, N.O.S.	8	6.1	I	274	0	E0	P002	–	IBC99	–
2923	CORROSIVE SOLID, TOXIC, N.O.S.	8	6.1	II	274	1 kg	E2	P002	–	IBC08	B4 B21

UN No.	Portable tanks and bulk containers		EmS	Stowage and handling	Segregation	Properties and observations	UN No.
	Tank instructions	Provisions					
(12)	(13) 4.2.5 4.3	(14) 4.2.5	(15) 5.4.3.2 7.8	(16a) 7.1 7.3–7.7	(16b) 7.2–7.7	(17)	(18)
–	–	–	F-I, S-S	Category A	–	See 1.5.1 and 5.1.5.4.2.	2909
–	–	–	F-I, S-S	Category A	–	See 1.5.1 and 5.1.5.4.2.	2910
–	–	–	F-I, S-S	Category A	–	See 1.5.1 and 5.1.5.4.2.	2911
–	T5	TP4	F-I, S-S	Category A SW20 SW21	–	See 1.5.1.	2912
–	T5	TP4	F-I, S-S	Category A	–	See 1.5.1.	2913
–	–	–	F-I, S-S	Category A SW20 SW21	–	See 1.5.1.	2915
–	–	–	F-I, S-S	Category A SW12	–	See 1.5.1. For ships transporting an INF cargo as defined in regulation VII/14 of the SOLAS Convention, 1974, as amended, refer also to the INF Code.	2916
–	–	–	F-I, S-S	Category A SW12	–	See 1.5.1. For ships transporting an INF cargo as defined in regulation VII/14 of the SOLAS Convention, 1974, as amended, refer also to the INF Code.	2917
–	–	–	F-I, S-S	Category A SW13	–	See 1.5.1. For ships transporting an INF cargo as defined in regulation VII/14 of the SOLAS Convention, 1974, as amended, refer also to the INF Code.	2919
–	T14	TP2 TP27	F-E, S-C	Category C SW1 SW2	–	Causes burns to skin, eyes and mucous membranes.	2920
–	T11	TP2 TP27	F-E, S-C	Category C SW1 SW2	–	See entry above.	2920
–	T6	TP33	F-A, S-G	Category B SW1 H2	–	Causes burns to skin, eyes and mucous membranes.	2921
–	T3	TP33	F-A, S-G	Category B SW1 H2	–	See entry above.	2921
–	T14	TP2 TP13 TP27	F-A, S-B	Category B SW2	–	Causes burns to skin, eyes and mucous membranes. Toxic if swallowed, by skin contact or by inhalation.	2922
–	T7	TP2	F-A, S-B	Category B SW2	–	See entry above.	2922
–	T7	TP1 TP28	F-A, S-B	Category B SW2	–	See entry above.	2922
–	T6	TP33	F-A, S-B	Category B SW2	–	Causes burns to skin, eyes and mucous membranes. Toxic if swallowed, by skin contact or by inhalation.	2923
–	T3	TP33	F-A, S-B	Category B SW2	–	See entry above.	2923

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						Limited quantities	Excepted quantities	Instructions	Provisions	Instructions	Provisions
(1)	(2) 3.1.2	(3) 2.0	(4) 2.0	(5) 2.0.1.3	(6) 3.3	(7a) 3.4	(7b) 3.5	(8) 4.1.4	(9) 4.1.4	(10) 4.1.4	(11) 4.1.4
2923	CORROSIVE SOLID, TOXIC, N.O.S.	8	6.1	III	223 274	5 kg	E1	P002	-	IBC08	B3
2924	FLAMMABLE LIQUID, CORROSIVE, N.O.S.	3	8	I	274	0	E0	P001	-	-	-
2924	FLAMMABLE LIQUID, CORROSIVE, N.O.S.	3	8	II	274	1 L	E2	P001	-	IBC02	-
2924	FLAMMABLE LIQUID, CORROSIVE, N.O.S.	3	8	III	223 274	5 L	E1	P001	-	IBC03	-
2925	FLAMMABLE SOLID, CORROSIVE, ORGANIC, N.O.S.	4.1	8	II	274	1 kg	E2	P002	-	IBC06	B21
2925	FLAMMABLE SOLID, CORROSIVE, ORGANIC, N.O.S.	4.1	8	III	223 274	5 kg	E1	P002	-	IBC06	-
2926	FLAMMABLE SOLID, TOXIC, ORGANIC, N.O.S.	4.1	6.1	II	274	1 kg	E2	P002	-	IBC06	B21
2926	FLAMMABLE SOLID, TOXIC, ORGANIC, N.O.S.	4.1	6.1	III	223 274	5 kg	E1	P002	-	IBC06	-
2927	TOXIC LIQUID, CORROSIVE, ORGANIC, N.O.S.	6.1	8	I	274 315	0	E5	P001	-	-	-
2927	TOXIC LIQUID, CORROSIVE, ORGANIC, N.O.S.	6.1	8	II	274	100 mL	E4	P001	-	IBC02	-
2928	TOXIC SOLID, CORROSIVE, ORGANIC, N.O.S.	6.1	8	I	274	0	E5	P002	-	IBC99	-
2928	TOXIC SOLID, CORROSIVE, ORGANIC, N.O.S.	6.1	8	II	274	500 g	E4	P002	-	IBC06	B21
2929	TOXIC LIQUID, FLAMMABLE, ORGANIC, N.O.S.	6.1	3	I	274 315	0	E5	P001	-	-	-
2929	TOXIC LIQUID, FLAMMABLE, ORGANIC, N.O.S.	6.1	3	II	274	100 mL	E4	P001	-	IBC02	-
2930	TOXIC SOLID, FLAMMABLE, ORGANIC, N.O.S.	6.1	4.1	I	274	0	E5	P002	-	IBC99	-
2930	TOXIC SOLID, FLAMMABLE, ORGANIC, N.O.S.	6.1	4.1	II	274	500 g	E4	P002	-	IBC08	B4 B21
2931	VANADYL SULPHATE	6.1	-	II	-	500 g	E4	P002	-	IBC08	B4 B21
2933	METHYL 2-CHLORO-PROPIONATE	3	-	III	-	5 L	E1	P001 LP01	-	IBC03	-
2934	ISOPROPYL 2-CHLORO-PROPIONATE	3	-	III	-	5 L	E1	P001 LP01	-	IBC03	-
2935	ETHYL 2-CHLORO-PROPIONATE	3	-	III	-	5 L	E1	P001 LP01	-	IBC03	-
2936	THIOLACTIC ACID	6.1	-	II	-	100 mL	E4	P001	-	IBC02	-
2937	alpha-METHYLBENZYL ALCOHOL, LIQUID	6.1	-	III	-	5 L	E1	P001 LP01	-	IBC03	-
2940	9-PHOSPHABICYCLONANES (CYCLOOCTADIENE-PHOSPHINES)	4.2	-	II	-	0	E2	P410 PP31	-	IBC06	B21

UN No.	Portable tanks and bulk containers		EmS	Stowage and handling	Segregation	Properties and observations	UN No.
	Tank instructions	Provisions					
(12)	(13) 4.2.5 4.3	(14) 4.2.5	(15) 5.4.3.2 7.8	(16a) 7.1 7.3-7.7	(16b) 7.2-7.7	(17)	(18)
-	T1	TP33	F-A, S-B	Category B SW2	-	Causes burns to skin, eyes and mucous membranes. Toxic if swallowed, by skin contact or by inhalation.	2923
-	T14	TP2	F-E, S-C	Category E SW2	-	Causes burns to skin, eyes and mucous membranes.	2924
-	T11	TP2 TP27	F-E, S-C	Category B SW2	-	See entry above.	2924
-	T7	TP1 TP28	F-E, S-C	Category A SW2	-	See entry above.	2924
-	T3	TP33	F-A, S-G	Category D SW2	-	Causes burns to skin, eyes and mucous membranes.	2925
-	T1	TP33	F-A, S-G	Category D SW2	-	See entry above.	2925
-	T3	TP33	F-A, S-G	Category B SW2	-	Toxic if swallowed, by skin contact or by dust inhalation. Should be handled with care to minimize exposure, particularly to dust.	2926
-	T1	TP33	F-A, S-G	Category B SW2	-	See entry above.	2926
-	T14	TP2 TP13 TP27	F-A, S-B	Category B SW2	-	Toxic if swallowed, by skin contact or by inhalation. Causes burns to skin, eyes and mucous membranes.	2927
-	T11	TP2 TP27	F-A, S-B	Category B SW2	-	See entry above.	2927
-	T6	TP33	F-A, S-B	Category B SW2	-	Toxic if swallowed, by skin contact or by inhalation. Causes burns to skin, eyes and mucous membranes.	2928
-	T3	TP33	F-A, S-B	Category B SW2	-	See entry above.	2928
-	T14	TP2 TP13 TP27	F-E, S-D	Category B SW2	-	Toxic if swallowed, by skin contact or by inhalation.	2929
-	T11	TP2 TP13 TP27	F-E, S-D	Category B SW2	-	See entry above.	2929
-	T6	TP33	F-A, S-G	Category B	-	Toxic if swallowed, by skin contact or by inhalation.	2930
-	T3	TP33	F-A, S-G	Category B	-	See entry above.	2930
-	T3	TP33	F-A, S-A	Category A	-	Blue, crystalline powder. Soluble in water. Toxic if swallowed, by skin contact or by dust inhalation.	2931
-	T2	TP1	F-E, S-D	Category A	-	Colourless liquid with an ether-like odour. Flashpoint: 32°C c.c. Slightly soluble in water. Irritating to skin, eyes and mucous membranes.	2933
-	T2	TP1	F-E, S-D	Category A	-	Colourless liquid with a sweetish odour. Flashpoint: 50°C c.c. Immiscible with water. Irritating to skin, eyes and mucous membranes.	2934
-	T2	TP1	F-E, S-D	Category A	-	Colourless liquid with a pungent odour. Flashpoint: 38°C c.c. Immiscible with water. Irritating to skin, eyes and mucous membranes.	2935
-	T7	TP2	F-A, S-A	Category A	-	Oily liquid with a foul odour. Melting point: 10°C. Miscible with water. Toxic if swallowed, by skin contact or by inhalation.	2936
-	T4	TP1	F-A, S-A	Category A	-	Colourless liquid. Slightly miscible with water. Melting point: 21°C (pure substance). Toxic if swallowed, by skin contact or by inhalation.	2937
-	T3	TP33	F-A, S-J	Category A	-	Colourless, waxy solids. Melting point: 40°C to 60°C. React in contact with materials such as sawdust or other cellulose-based materials, resulting in charring and evolution of toxic fumes. Irritating to skin, eyes and mucous membranes.	2940

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						Limited quantities	Excepted quantities	Instructions	Provisions	Instructions	Provisions
(1)	(2) 3.1.2	(3) 2.0	(4) 2.0	(5) 2.0.1.3	(6) 3.3	(7a) 3.4	(7b) 3.5	(8) 4.1.4	(9) 4.1.4	(10) 4.1.4	(11) 4.1.4
2941	FLUOROANILINES	6.1	–	III	–	5 L	E1	P001 LP01	–	IBC03	–
2942	2-TRIFLUOROMETHYLANILINE	6.1	–	III	–	5 L	E1	P001 LP01	–	IBC03	–
2943	TETRAHYDRO-FURFURYLAMINE	3	–	III	–	5 L	E1	P001 LP01	–	IBC03	–
2945	N-METHYLBUTYLAMINE	3	8	II	–	1 L	E2	P001	–	IBC02	–
2946	2-AMINO-5-DIETHYLAMINO-PENTANE	6.1	–	III	–	5 L	E1	P001 LP01	–	IBC03	–
2947	ISOPROPYL CHLOROACETATE	3	–	III	–	5 L	E1	P001 LP01	–	IBC03	–
2948	3-TRIFLUOROMETHYLANILINE	6.1	–	II	–	100 mL	E4	P001	–	IBC02	–
2949	SODIUM HYDROSULPHIDE, HYDRATED with not less than 25% water of crystallization	8	–	II	–	1 kg	E2	P002	–	IBC08	B4 B21
2950	MAGNESIUM GRANULES, COATED particle size not less than 149 microns	4.3	–	III	920	1 kg	E1	P410	PP100	IBC08	B4
2956	5-tert-BUTYL-2,4,6-TRINITRO-m-XYLENE (MUSK XYLENE)	4.1	–	III	133	0	E0	P409	–	–	–
2965	BORON TRIFLUORIDE DIMETHYL ETHERATE	4.3	3/8	I	–	0	E0	P401	PP31	–	–
2966	THIOGLYCOL	6.1	–	II	–	100 mL	E4	P001	–	IBC02	–
2967	SULPHAMIC ACID	8	–	III	–	5 kg	E1	P002 LP02	–	IBC08	B3
2968	MANEB, STABILIZED or MANEB PREPARATION, STABILIZED against self-heating	4.3	– P	III	223 946	1 kg	E1	P002	PP100	IBC08	B4
2969	CASTOR BEANS or CASTOR MEAL or CASTOR POMACE or CASTOR FLAKE	9	–	II	141	5 kg	E2	P002	PP34	IBC08	B4 B21
2977	RADIOACTIVE MATERIAL, URANIUM HEXAFLUORIDE, FISSILE	7	6.1/8	–	–	0	E0	See 4.1.9	See 4.1.9	See 4.1.9	See 4.1.9
2978	RADIOACTIVE MATERIAL, URANIUM HEXAFLUORIDE non fissile or fissile-excepted	7	6.1/8	–	317	0	E0	See 4.1.9	See 4.1.9	See 4.1.9	See 4.1.9

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	Tank instructions	Provisions					
(12)	(13) 4.2.5 4.3	(14) 4.2.5	(15) 5.4.3.2 7.8	(16a) 7.1 7.3–7.7	(16b) 7.2–7.7	(17)	(18)
–	T4	TP1	F-A, S-A	Category A	–	Liquids. Freezing points: –28°C to –2°C. Immiscible with water. Toxic if swallowed, by skin contact or by inhalation.	2941
–	–	–	F-A, S-A	Category A	–	Liquid. Immiscible with water. Toxic if swallowed, by skin contact or by inhalation.	2942
–	T2	TP1	F-E, S-D	Category A	–	Colourless to yellowish liquid with an ammoniacal odour. Flashpoint: 45°C c.c. Miscible with water. Harmful by inhalation. Irritating to skin, eyes and mucous membranes.	2943
–	T7	TP1	F-E, S-C	Category B SW2	–	Colourless liquid. Flashpoint: 0°C c.c. Miscible with water. Harmful by inhalation. Causes burns to skin and eyes. Irritating to mucous membranes.	2945
–	T4	TP1	F-A, S-A	Category A	–	Liquid with an acrid odour. Miscible with water. Toxic if swallowed, by skin contact or by inhalation.	2946
–	T2	TP1	F-E, S-D	Category A	–	Colourless liquid with a pungent odour. Flashpoint: 56°C c.c. Slightly soluble in water. Harmful by inhalation. Irritating to skin, eyes and mucous membranes.	2947
–	T7	TP2	F-A, S-A	Category A SW2	–	Colourless to yellowish liquid. Melting point: 5°C. Slightly miscible with water. Toxic if swallowed, by skin contact or by inhalation.	2948
–	T7	TP2	F-A, S-B	Category A	SG35	Colourless needles or yellow flakes. Soluble in water with a foul odour. Melting point: 52°C. Reacts violently with acids, evolving hydrogen sulphide, a toxic and flammable gas. Causes burns to skin, eyes and mucous membranes.	2949
–	T1 BK2	TP33	F-G, S-O	Category A H1	SG26 SG35	Coated granules with particle size ranging from 149 to 2000 microns. In contact with water or acids, evolve hydrogen, a flammable gas.	2950
–	–	–	F-B, S-G	Category D SW1 SW2 H2 H3	SG1	Insoluble in water. May explode if involved in a fire under confined conditions. Sensitive to strong detonation shock. Harmful if swallowed or by skin contact.	2956
–	T10	TP2 TP7 TP13	F-G, S-O	Category D SW2 H1	SG5 SG8 SG13 SG25 SG26	Colourless, flammable liquid. Flashpoint: 20°C c.c. but widely variable, depending upon free ether content. Freezing point: –14°C. Decomposes in contact with water, forming dimethyl ether, a flammable gas. Causes burns to skin, eyes and mucous membranes.	2965
–	T7	TP2	F-A, S-A	Category A	–	Colourless liquid with a foul odour. Miscible with water. Decomposes when heated, evolving sulphur dioxide. Toxic if swallowed, by skin contact or by inhalation.	2966
–	T1	TP33	F-A, S-B	Category A	–	White crystalline powder. Soluble in water. Decomposes when heated, evolving toxic fumes. Causes burns to skin, eyes and mucous membranes.	2967
–	T1	TP33	F-G, S-L	Category B H1	SG26 SG29 SG35	Yellow powder. May evolve toxic, irritating or flammable fumes when wet, when involved in a fire or in contact with acids. Requires certification from the shipper that the substance is not class 4.2.	2968
–	T3 BK2	TP33	F-A, S-A	Category E SW2	SG10 SG18 SG29	Whole beans or meal. The latter is the residue remaining after the oil has been extracted from the seeds. Castor beans contain a powerful allergen which, by inhalation of dust or by skin contact with crushed bean products, can give rise to severe irritation of the skin, eyes and mucous membranes in some persons. They are also toxic by ingestion. When handling these products, wear at least a dust mask and goggles. Avoid unnecessary skin contact.	2969
–	–	–	F-I, S-S	Category B SW2 SW12	–	See 1.5.1.	2977
–	–	–	F-I, S-S	Category B SW2 SW12	–	See 1.5.1.	2978

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						Limited quantities	Excepted quantities	Instructions	Provisions	Instructions	Provisions
(1)	(2) 3.1.2	(3) 2.0	(4) 2.0	(5) 2.0.1.3	(6) 3.3	(7a) 3.4	(7b) 3.5	(8) 4.1.4	(9) 4.1.4	(10) 4.1.4	(11) 4.1.4
2983	ETHYLENE OXIDE AND PROPYLENE OXIDE MIXTURE with not more than 30% ethylene oxide	3	6.1	I	–	0	E0	P001	–	–	–
2984	HYDROGEN PEROXIDE, AQUEOUS SOLUTION with not less than 8% but less than 20% hydrogen peroxide (stabilized as necessary)	5.1	–	III	65	5 L	E1	P504	–	IBC02	B5
2985	CHLOROSILANES, FLAMMABLE, CORROSIVE, N.O.S.	3	8	II	–	0	E0	P010	–	–	–
2986	CHLOROSILANES, CORROSIVE, FLAMMABLE, N.O.S.	8	3	II	–	0	E0	P010	–	–	–
2987	CHLOROSILANES, CORROSIVE, N.O.S.	8	–	II	–	0	E0	P010	–	–	–
2988	CHLOROSILANES, WATER-REACTIVE, FLAMMABLE, CORROSIVE, N.O.S.	4.3	3/8	I	–	0	E0	P401	PP31	–	–
2989	LEAD PHOSPHITE, DIBASIC	4.1	–	II	922	1 kg	E2	P002	–	IBC08	B4 B21
2989	LEAD PHOSPHITE, DIBASIC	4.1	–	III	922	5 kg	E1	P002 LP02	–	IBC08	B3
2990	LIFE-SAVING APPLIANCES, SELF-INFLATING	9	–	–	296	0	E0	P905	–	–	–
2991	CARBAMATE PESTICIDE, LIQUID, TOXIC, FLAMMABLE, flashpoint not less than 23°C	6.1	3	I	61 274	0	E5	P001	–	–	–
2991	CARBAMATE PESTICIDE, LIQUID, TOXIC, FLAMMABLE, flashpoint not less than 23°C	6.1	3	II	61 274	100 mL	E4	P001	–	IBC02	–
2991	CARBAMATE PESTICIDE, LIQUID, TOXIC, FLAMMABLE, flashpoint not less than 23°C	6.1	3	III	61 223 274	5 L	E1	P001 LP01	–	IBC03	–

UN No.	Portable tanks and bulk containers		EmS	Stowage and handling	Segregation	Properties and observations	UN No.
	Tank instructions	Provisions					
(12)	(13) 4.2.5 4.3	(14) 4.2.5	(15) 5.4.3.2 7.8	(16a) 7.1 7.3–7.7	(16b) 7.2–7.7	(17)	(18)
–	T14	TP2 TP7 TP13	F-E, S-D	Category E SW1 SW2	–	Colourless, volatile liquid with an ethereal odour. Flashpoint: below –18°C c.c. Explosive limits: 2.2% to 55%. Boiling point: 23°C to 28°C. Miscible with water. Corrosive to aluminium. Toxic if swallowed, by skin contact or by inhalation. Irritating to eyes and mucous membranes.	2983
–	T4	TP1 TP6 TP24	F-H, S-Q	Category B SW1	SG16 SG59 SG72	Colourless liquid. Slowly decomposes, evolving oxygen; the rate of decomposition increases in contact with metals, except aluminium.	2984
–	T14	TP2 TP7 TP13 TP27	F-E, S-C	Category B SW2	–	Colourless liquids with a pungent odour. When involved in a fire, evolve toxic gases. React violently with water, evolving hydrogen chloride, an irritating and corrosive gas. In the presence of moisture, highly corrosive to most metals. Cause burns to skin, eyes and mucous membranes.	2985
–	T14	TP2 TP7 TP13 TP27	F-E, S-C	Category C SW2	–	Colourless, flammable liquids with a pungent odour. Immiscible with water. React violently with water or steam, evolving hydrogen chloride, an irritating and corrosive gas apparent as white fumes. When involved in a fire, evolve toxic gas. In the presence of moisture, highly corrosive to most metals. Cause burns to skin, eyes and mucous membranes.	2986
–	T14	TP2 TP7 TP13 TP27	F-A, S-B	Category C SW2	–	Colourless liquids with a pungent odour. Immiscible with water. React violently with water or steam, evolving hydrogen chloride, an irritating and corrosive gas apparent as white fumes. When involved in a fire, evolve toxic gases. In the presence of moisture, highly corrosive to most metals. Cause burns to skin, eyes and mucous membranes.	2987
–	T14	TP2 TP7 TP13	F-G, S-N	Category D SW2 H1	SG5 SG8 SG13 SG25 SG26	Colourless, very volatile liquids, flammable and corrosive, with a pungent odour. Immiscible with water. React violently with water or steam to produce heat which may lead to self-ignition; toxic and corrosive fumes will be evolved. May react vigorously in contact with oxidizing substances. Cause burns to skin, eyes and mucous membranes.	2988
–	T3	TP33	F-A, S-G	Category B	SG29	Fine white crystals or powder. Insoluble in water. Combustion can be sustained, even in the absence of air. Harmful if swallowed.	2989
–	T1	TP33	F-A, S-G	Category B	SG29	See entry above.	2989
–	–	–	F-A, S-V	Category A	SG18 SG71	These articles may contain: .1 class 2.2 compressed gases; .2 signal devices (class 1) which may include smoke and illumination signal flares; signal devices must be packed in plastic or fibreboard inner packagings; .3 electric storage batteries; .4 first aid kit; or .5 “strike anywhere” matches.	2990
–	T14	TP2 TP13 TP27	F-E, S-D	Category B SW2	–	Liquid flammable pesticides having a flashpoint between 23°C and 60°C c.c., presenting a very wide range of toxic hazard. They frequently contain petroleum or coal tar distillates, or other flammable liquids. Flashpoint and miscibility with water depend upon the composition. Toxic if swallowed, by skin contact or by inhalation.	2991
–	T11	TP2 TP13 TP27	F-E, S-D	Category B SW2	–	See entry above.	2991
–	T7	TP2 TP28	F-E, S-D	Category A SW2	–	Liquid flammable pesticides having a flashpoint between 23°C and 60°C c.c., presenting a very wide range of toxic hazard. They frequently contain petroleum or coal tar distillates, or other flammable liquids. Flashpoint and miscibility with water depend upon the composition. Toxic if swallowed, by skin contact or by inhalation.	2991

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						Limited quantities	Excepted quantities	Instructions	Provisions	Instructions	Provisions
(1)	(2) 3.1.2	(3) 2.0	(4) 2.0	(5) 2.0.1.3	(6) 3.3	(7a) 3.4	(7b) 3.5	(8) 4.1.4	(9) 4.1.4	(10) 4.1.4	(11) 4.1.4
2992	CARBAMATE PESTICIDE, LIQUID, TOXIC	6.1	-	I	61 274	0	E5	P001	-	-	-
2992	CARBAMATE PESTICIDE, LIQUID, TOXIC	6.1	-	II	61 274	100 mL	E4	P001	-	IBC02	-
2992	CARBAMATE PESTICIDE, LIQUID, TOXIC	6.1	-	III	61 223 274	5 L	E1	P001 LP01	-	IBC03	-
2993	ARSENICAL PESTICIDE, LIQUID, TOXIC, FLAMMABLE, flashpoint not less than 23°C	6.1	3	I	61 274	0	E5	P001	-	-	-
2993	ARSENICAL PESTICIDE, LIQUID, TOXIC, FLAMMABLE, flashpoint not less than 23°C	6.1	3	II	61 274	100 mL	E4	P001	-	IBC02	-
2993	ARSENICAL PESTICIDE, LIQUID, TOXIC, FLAMMABLE, flashpoint not less than 23°C	6.1	3	III	61 223 274	5 L	E1	P001	-	IBC03	-
2994	ARSENICAL PESTICIDE, LIQUID, TOXIC	6.1	-	I	61 274	0	E5	P001	-	-	-
2994	ARSENICAL PESTICIDE, LIQUID, TOXIC	6.1	-	II	61 274	100 mL	E4	P001	-	IBC02	-
2994	ARSENICAL PESTICIDE, LIQUID, TOXIC	6.1	-	III	61 223 274	5 L	E1	P001 LP01	-	IBC03	-
2995	ORGANOCHLORINE PESTICIDE, LIQUID, TOXIC, FLAMMABLE, flashpoint not less than 23°C	6.1	3	I	61 274	0	E5	P001	-	-	-
2995	ORGANOCHLORINE PESTICIDE, LIQUID, TOXIC, FLAMMABLE, flashpoint not less than 23°C	6.1	3	II	61 274	100 mL	E4	P001	-	IBC02	-
2995	ORGANOCHLORINE PESTICIDE, LIQUID, TOXIC, FLAMMABLE, flashpoint not less than 23°C	6.1	3	III	61 223 274	5 L	E1	P001	-	IBC03	-
2996	ORGANOCHLORINE PESTICIDE, LIQUID, TOXIC	6.1	-	I	61 274	0	E5	P001	-	-	-
2996	ORGANOCHLORINE PESTICIDE, LIQUID, TOXIC	6.1	-	II	61 274	100 mL	E4	P001	-	IBC02	-
2996	ORGANOCHLORINE PESTICIDE, LIQUID, TOXIC	6.1	-	III	61 223 274	5 L	E1	P001 LP01	-	IBC03	-
2997	TRIAZINE PESTICIDE, LIQUID, TOXIC, FLAMMABLE, flashpoint not less than 23°C	6.1	3	I	61 274	0	E5	P001	-	-	-
2997	TRIAZINE PESTICIDE, LIQUID, TOXIC, FLAMMABLE, flashpoint not less than 23°C	6.1	3	II	61 274	100 mL	E4	P001	-	IBC02	-
2997	TRIAZINE PESTICIDE, LIQUID, TOXIC, FLAMMABLE, flashpoint not less than 23°C	6.1	3	III	61 223 274	5 L	E1	P001	-	IBC03	-

UN No.	Portable tanks and bulk containers		EmS	Stowage and handling	Segregation	Properties and observations	UN No.
	Tank instructions	Provisions					
(12)	(13) 4.2.5 4.3	(14) 4.2.5	(15) 5.4.3.2 7.8	(16a) 7.1 7.3-7.7	(16b) 7.2-7.7	(17)	(18)
-	T14	TP2 TP13 TP27	F-A, S-A	Category B SW2	-	Miscibility with water depends upon the composition. Toxic if swallowed, by skin contact or by inhalation.	2992
-	T11	TP2 TP13 TP27	F-A, S-A	Category B SW2	-	See entry above.	2992
-	T7	TP2 TP28	F-A, S-A	Category A SW2	-	See entry above.	2992
-	T14	TP2 TP13 TP27	F-E, S-D	Category B SW2	-	Liquid flammable pesticides having a flashpoint between 23°C and 60°C c.c., presenting a very wide range of toxic hazard. They frequently contain petroleum or coal tar distillates, or other flammable liquids. Flashpoint and miscibility with water depend upon the composition. Toxic if swallowed, by skin contact or by inhalation.	2993
-	T11	TP2 TP13 TP27	F-E, S-D	Category B SW2	-	See entry above.	2993
-	T7	TP2 TP28	F-E, S-D	Category A SW2	-	See entry above.	2993
-	T14	TP2 TP13 TP27	F-A, S-A	Category B SW2	-	Liquid pesticides which present a very wide range of toxic hazard. Miscibility with water depends upon the composition. Toxic if swallowed, by skin contact or by inhalation.	2994
-	T11	TP2 TP13 TP27	F-A, S-A	Category B SW2	-	See entry above.	2994
-	T7	TP2 TP28	F-A, S-A	Category A SW2	-	See entry above.	2994
-	T14	TP2 TP13 TP27	F-E, S-D	Category B SW2	-	It frequently contains petroleum or coal tar distillates, or other flammable liquids. Flashpoint and miscibility with water depend upon the composition. Toxic if swallowed, by skin contact or by inhalation.	2995
-	T11	TP2 TP13 TP27	F-E, S-D	Category B SW2	-	See entry above.	2995
-	T7	TP2 TP28	F-E, S-D	Category A SW2	-	See entry above.	2995
-	T14	TP2 TP13 TP27	F-A, S-A	Category B SW2	-	Miscibility with water depends upon the composition. Toxic if swallowed, by skin contact or by inhalation.	2996
-	T11	TP2 TP13 TP27	F-A, S-A	Category B SW2	-	See entry above.	2996
-	T7	TP2 TP28	F-A, S-A	Category A SW2	-	See entry above.	2996
-	T14	TP2 TP13 TP27	F-E, S-D	Category B SW2	-	It frequently contains petroleum or coal tar distillates, or other flammable liquids. Flashpoint and miscibility with water depend upon the composition. Toxic if swallowed, by skin contact or by inhalation.	2997
-	T11	TP2 TP13 TP27	F-E, S-D	Category B SW2	-	It frequently contains petroleum or coal tar distillates, or other flammable liquids. Flashpoint and miscibility with water depend upon the composition. Toxic if swallowed, by skin contact or by inhalation.	2997
-	T7	TP2 TP28	F-E, S-D	Category A SW2	-	See entry above.	2997

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DANGEROUS GOODS (IMDG) CODE

UN No.	Proper shipping name (PSN)	Class or division	Subsidiary risk(s)	Packing group	Special provisions	Limited and excepted quantity provisions		Packing		IBC	
						Limited quantities	Excepted quantities	Instructions	Provisions	Instructions	Provisions
(1)	(2) 3.1.2	(3) 2.0	(4) 2.0	(5) 2.0.1.3	(6) 3.3	(7a) 3.4	(7b) 3.5	(8) 4.1.4	(9) 4.1.4	(10) 4.1.4	(11) 4.1.4
2998	TRIAZINE PESTICIDE, LIQUID, TOXIC	6.1	-	I	61 274	0	E5	P001	-	-	-
2998	TRIAZINE PESTICIDE, LIQUID, TOXIC	6.1	-	II	61 274	100 mL	E4	P001	-	IBC02	-
2998	TRIAZINE PESTICIDE, LIQUID, TOXIC	6.1	-	III	61 223 274	5 L	E1	P001 LP01	-	IBC03	-
3005	THIOCARBAMATE PESTICIDE, LIQUID, TOXIC, FLAMMABLE, flashpoint not less than 23°C	6.1	3	I	61 274	0	E5	P001	-	-	-
3005	THIOCARBAMATE PESTICIDE, LIQUID, TOXIC, FLAMMABLE, flashpoint not less than 23°C	6.1	3	II	61 274	100 mL	E4	P001	-	IBC02	-
3005	THIOCARBAMATE PESTICIDE, LIQUID, TOXIC, FLAMMABLE, flashpoint not less than 23°C	6.1	3	III	61 223 274	5 L	E1	P001	-	IBC03	-
3006	THIOCARBAMATE PESTICIDE, LIQUID, TOXIC	6.1	-	I	61 274	0	E5	P001	-	-	-
3006	THIOCARBAMATE PESTICIDE, LIQUID, TOXIC	6.1	-	II	61 274	100 mL	E4	P001	-	IBC02	-
3006	THIOCARBAMATE PESTICIDE, LIQUID, TOXIC	6.1	-	III	61 223 274	5 L	E1	P001 LP01	-	IBC03	-
3009	COPPER BASED PESTICIDE, LIQUID, TOXIC, FLAMMABLE, flashpoint not less than 23°C	6.1	3	I	61 274	0	E5	P001	-	-	-
3009	COPPER BASED PESTICIDE, LIQUID, TOXIC, FLAMMABLE, flashpoint not less than 23°C	6.1	3	II	61 274	100 mL	E4	P001	-	IBC02	-
3009	COPPER BASED PESTICIDE, LIQUID, TOXIC, FLAMMABLE, flashpoint not less than 23°C	6.1	3	III	61 223 274	5 L	E1	P001	-	IBC03	-
3010	COPPER BASED PESTICIDE, LIQUID, TOXIC	6.1	-	I	61 274	0	E5	P001	-	-	-
3010	COPPER BASED PESTICIDE, LIQUID, TOXIC	6.1	-	II	61 274	100 mL	E4	P001	-	IBC02	-
3010	COPPER BASED PESTICIDE, LIQUID, TOXIC	6.1	-	III	61 223 274	5 L	E1	P001 LP01	-	IBC03	-
3011	MERCURY BASED PESTICIDE, LIQUID, TOXIC, FLAMMABLE, flashpoint not less than 23°C	6.1	3 P	I	61 274	0	E5	P001	-	-	-

UN No.	Portable tanks and bulk containers		EmS	Stowage and handling	Segregation	Properties and observations	UN No.
	Tank instructions	Provisions					
(12)	(13) 4.2.5 4.3	(14) 4.2.5	(15) 5.4.3.2 7.8	(16a) 7.1 7.3-7.7	(16b) 7.2-7.7	(17)	(18)
-	T14	TP2 TP13 TP27	F-A, S-A	Category B SW2	-	See alphabetical index to identify those pesticides which are marine pollutants. Liquid pesticides which present a very wide range of toxic hazard. Miscibility with water depends upon the composition. Toxic if swallowed, by skin contact or by inhalation.	2998
-	T11	TP2 TP13 TP27	F-A, S-A	Category B SW2	-	See entry above.	2998
-	T7	TP2 TP28	F-A, S-A	Category A SW2	-	See entry above.	2998
-	T14	TP2 TP13	F-E, S-D	Category B SW2	-	Liquid flammable pesticides having a flashpoint between 23°C and 60°C c.c., presenting a very wide range of toxic hazard. They frequently contain petroleum or coal tar distillates, or other flammable liquids. Flashpoint and miscibility with water depend upon the composition. Toxic if swallowed, by skin contact or by inhalation.	3005
-	T11	TP2 TP13 TP27	F-E, S-D	Category B SW2	-	See entry above.	3005
-	T7	TP2 TP28	F-E, S-D	Category A SW2	-	See entry above.	3005
-	T14	TP2 TP13	F-A, S-A	Category B SW2	-	Liquid pesticides which present a very wide range of toxic hazard. Miscibility with water depends upon the composition. Toxic if swallowed, by skin contact or by inhalation.	3006
-	T11	TP2 TP13 TP27	F-A, S-A	Category B SW2	-	See entry above.	3006
-	T7	TP2 TP28	F-A, S-A	Category A SW2	-	See entry above.	3006
-	T14	TP2 TP13 TP27	F-E, S-D	Category B SW2	-	Liquid flammable pesticides having a flashpoint between 23°C and 60°C c.c., presenting a very wide range of toxic hazard. They frequently contain petroleum or coal tar distillates, or other flammable liquids. Flashpoint and miscibility with water depend upon the composition. Toxic if swallowed, by skin contact or by inhalation.	3009
-	T11	TP2 TP13 TP27	F-E, S-D	Category B SW2	-	See entry above.	3009
-	T7	TP2 TP28	F-E, S-D	Category A SW2	-	See entry above.	3009
-	T14	TP2 TP13 TP27	F-A, S-A	Category B SW2	-	Liquid pesticides which present a very wide range of toxic hazard. Miscibility with water depends upon the composition. Toxic if swallowed, by skin contact or by inhalation.	3010
-	T11	TP2 TP13 TP27	F-A, S-A	Category B SW2	-	See entry above.	3010
-	T7	TP2 TP28	F-A, S-A	Category A SW2	-	See entry above.	3010
-	T14	TP2 TP13 TP27	F-E, S-D	Category B SW2	-	Liquid flammable pesticides having a flashpoint between 23°C and 60°C c.c., presenting a very wide range of toxic hazard. They frequently contain petroleum or coal tar distillates, or other flammable liquids. Flashpoint and miscibility with water depend upon the composition. Toxic if swallowed, by skin contact or by inhalation.	3011

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						Limited quantities	Excepted quantities	Instructions	Provisions	Instructions	Provisions
(1)	(2) 3.1.2	(3) 2.0	(4) 2.0	(5) 2.0.1.3	(6) 3.3	(7a) 3.4	(7b) 3.5	(8) 4.1.4	(9) 4.1.4	(10) 4.1.4	(11) 4.1.4
3011	MERCURY BASED PESTICIDE, LIQUID, TOXIC, FLAMMABLE, flashpoint not less than 23°C	6.1	3 P	II	61 274	100 mL	E4	P001	-	IBC02	-
3011	MERCURY BASED PESTICIDE, LIQUID, TOXIC, FLAMMABLE, flashpoint not less than 23°C	6.1	3 P	III	61 223 274	5 L	E1	P001	-	IBC03	-
3012	MERCURY BASED PESTICIDE, LIQUID, TOXIC	6.1	- P	I	61 274	0	E5	P001	-	-	-
3012	MERCURY BASED PESTICIDE, LIQUID, TOXIC	6.1	- P	II	61 274	100 mL	E4	P001	-	IBC02	-
3012	MERCURY BASED PESTICIDE, LIQUID, TOXIC	6.1	- P	III	61 223 274	5 L	E1	P001 LP01	-	IBC03	-
3013	SUBSTITUTED NITROPHENOL PESTICIDE, LIQUID, TOXIC, FLAMMABLE, flashpoint not less than 23°C	6.1	3	I	61 274	0	E5	P001	-	-	-
3013	SUBSTITUTED NITROPHENOL PESTICIDE, LIQUID, TOXIC, FLAMMABLE, flashpoint not less than 23°C	6.1	3	II	61 274	100 mL	E4	P001	-	IBC02	-
3013	SUBSTITUTED NITROPHENOL PESTICIDE, LIQUID, TOXIC, FLAMMABLE, flashpoint not less than 23°C	6.1	3	III	61 223 274	5 L	E1	P001	-	IBC03	-
3014	SUBSTITUTED NITROPHENOL PESTICIDE, LIQUID, TOXIC	6.1	-	I	61 274	0	E5	P001	-	-	-
3014	SUBSTITUTED NITROPHENOL PESTICIDE, LIQUID, TOXIC	6.1	-	II	61 274	100 mL	E4	P001	-	IBC02	-
3014	SUBSTITUTED NITROPHENOL PESTICIDE, LIQUID, TOXIC	6.1	-	III	61 223 274	5 L	E1	P001 LP01	-	IBC03	-
3015	BIPYRIDILIUM PESTICIDE, LIQUID, TOXIC, FLAMMABLE, flashpoint not less than 23°C	6.1	3	I	61 274	0	E5	P001	-	-	-
3015	BIPYRIDILIUM PESTICIDE, LIQUID, TOXIC, FLAMMABLE, flashpoint not less than 23°C	6.1	3	II	61 274	100 mL	E4	P001	-	IBC02	-
3015	BIPYRIDILIUM PESTICIDE, LIQUID, TOXIC, FLAMMABLE, flashpoint not less than 23°C	6.1	3	III	61 223 274	5 L	E1	P001	-	IBC03	-
3016	BIPYRIDILIUM PESTICIDE, LIQUID, TOXIC	6.1	-	I	61 274	0	E5	P001	-	-	-
3016	BIPYRIDILIUM PESTICIDE, LIQUID, TOXIC	6.1	-	II	61 274	100 mL	E4	P001	-	IBC02	-

UN No.	Portable tanks and bulk containers		EmS	Stowage and handling	Segregation	Properties and observations	UN No.
	Tank instructions	Provisions					
(12)	(13) 4.2.5 4.3	(14) 4.2.5	(15) 5.4.3.2 7.8	(16a) 7.1 7.3-7.7	(16b) 7.2-7.7	(17)	(18)
-	T11	TP2 TP13 TP27	F-E, S-D	Category B SW2	-	Liquid flammable pesticides having a flashpoint between 23°C and 60°C c.c., presenting a very wide range of toxic hazard. They frequently contain petroleum or coal tar distillates, or other flammable liquids. Flashpoint and miscibility with water depend upon the composition. Toxic if swallowed, by skin contact or by inhalation.	3011
-	T7	TP2 TP28	F-E, S-D	Category A SW2	-	See entry above.	3011
-	T14	TP2 TP13 TP27	F-A, S-A	Category B SW2	-	Liquid pesticides which present a very wide range of toxic hazard. Miscibility with water depends upon the composition. Toxic if swallowed, by skin contact or by inhalation.	3012
-	T11	TP2 TP13 TP27	F-A, S-A	Category B SW2	-	See entry above.	3012
-	T7	TP2 TP28	F-A, S-A	Category A SW2	-	See entry above.	3012
-	T14	TP2 TP13 TP27	F-E, S-D	Category B SW2	-	Liquid flammable pesticides having a flashpoint between 23°C and 60°C c.c., presenting a very wide range of toxic hazard. They frequently contain petroleum or coal tar distillates, or other flammable liquids. Flashpoint and miscibility with water depend upon the composition. Toxic if swallowed, by skin contact or by inhalation.	3013
-	T11	TP2 TP13 TP27	F-E, S-D	Category B SW2	-	See entry above.	3013
-	T7	TP2 TP28	F-E, S-D	Category A SW2	-	See entry above.	3013
-	T14	TP2 TP13 TP27	F-A, S-A	Category B SW2	-	Liquid pesticides which present a very wide range of toxic hazard. Miscibility with water depends upon the composition. Toxic if swallowed, by skin contact or by inhalation.	3014
-	T11	TP2 TP13 TP27	F-A, S-A	Category B SW2	-	See entry above.	3014
-	T7	TP2 TP28	F-A, S-A	Category A SW2	-	See entry above.	3014
-	T14	TP2 TP13 TP27	F-E, S-D	Category B SW2	-	Liquid flammable pesticides having a flashpoint between 23°C and 60°C c.c., presenting a very wide range of toxic hazard. They frequently contain petroleum or coal tar distillates, or other flammable liquids. Flashpoint and miscibility with water depend upon the composition. Toxic if swallowed, by skin contact or by inhalation.	3015
-	T11	TP2 TP13 TP27	F-E, S-D	Category B SW2	-	See entry above.	3015
-	T7	TP2 TP28	F-E, S-D	Category A SW2	-	See entry above.	3015
-	T14	TP2 TP13 TP27	F-A, S-A	Category B SW2	-	Liquid pesticides which present a very wide range of toxic hazard. Miscibility with water depends upon the composition. Toxic if swallowed, by skin contact or by inhalation.	3016
-	T11	TP2 TP13 TP27	F-A, S-A	Category B SW2	-	See entry above.	3016

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						Limited quantities	Excepted quantities	Instructions	Provisions	Instructions	Provisions
(1)	(2) 3.1.2	(3) 2.0	(4) 2.0	(5) 2.0.1.3	(6) 3.3	(7a) 3.4	(7b) 3.5	(8) 4.1.4	(9) 4.1.4	(10) 4.1.4	(11) 4.1.4
3016	BIPYRIDILIUM PESTICIDE, LIQUID, TOXIC	6.1	–	III	61 223 274	5 L	E1	P001 LP01	–	IBC03	–
3017	ORGANOPHOSPHORUS PESTICIDE, LIQUID, TOXIC, FLAMMABLE, flashpoint not less than 23°C	6.1	3	I	61 274	0	E5	P001	–	–	–
3017	ORGANOPHOSPHORUS PESTICIDE, LIQUID, TOXIC, FLAMMABLE, flashpoint not less than 23°C	6.1	3	II	61 274	100 mL	E4	P001	–	IBC02	–
3017	ORGANOPHOSPHORUS PESTICIDE, LIQUID, TOXIC, FLAMMABLE, flashpoint not less than 23°C	6.1	3	III	61 223 274	5 L	E1	P001	–	IBC03	–
3018	ORGANOPHOSPHORUS PESTICIDE, LIQUID, TOXIC	6.1	–	I	61 274	0	E5	P001	–	–	–
3018	ORGANOPHOSPHORUS PESTICIDE, LIQUID, TOXIC	6.1	–	II	61 274	100 mL	E4	P001	–	IBC02	–
3018	ORGANOPHOSPHORUS PESTICIDE, LIQUID, TOXIC	6.1	–	III	61 223 274	5 L	E1	P001 LP01	–	IBC03	–
3019	ORGANOTIN PESTICIDE, LIQUID, TOXIC, FLAMMABLE, flashpoint not less than 23°C	6.1	3 P	I	61 274	0	E5	P001	–	–	–
3019	ORGANOTIN PESTICIDE, LIQUID, TOXIC, FLAMMABLE, flashpoint not less than 23°C	6.1	3 P	II	61 274	100 mL	E4	P001	–	IBC02	–
3019	ORGANOTIN PESTICIDE, LIQUID, TOXIC, FLAMMABLE, flashpoint not less than 23°C	6.1	3 P	III	61 223 274	5 L	E1	P001	–	IBC03	–
3020	ORGANOTIN PESTICIDE, LIQUID, TOXIC	6.1	– P	I	61 274	0	E5	P001	–	–	–
3020	ORGANOTIN PESTICIDE, LIQUID, TOXIC	6.1	– P	II	61 274	100 mL	E4	P001	–	IBC02	–
3020	ORGANOTIN PESTICIDE, LIQUID, TOXIC	6.1	– P	III	61 223 274	5 L	E1	P001 LP01	–	IBC03	–
3021	PESTICIDE, LIQUID, FLAMMABLE, TOXIC, N.O.S., flashpoint less than 23°C	3	6.1	I	61 274	0	E0	P001	–	–	–
3021	PESTICIDE, LIQUID, FLAMMABLE, TOXIC, N.O.S., flashpoint less than 23°C	3	6.1	II	61 274	1 L	E2	P001	–	IBC02	–
3022	1,2-BUTYLENE OXIDE, STABILIZED	3	–	II	386	1 L	E2	P001	–	IBC02	–

(12)	Portable tanks and bulk containers		EmS	Stowage and handling	Segregation	Properties and observations	UN No.
	Tank instructions	Provisions					
(13) 4.2.5 4.3	(14) 4.2.5	(15) 5.4.3.2 7.8	(16a) 7.1 7.3–7.7	(16b) 7.2–7.7	(17)	(18)	
–	T7	TP2 TP28	F-A, S-A	Category A SW2	–	Liquid pesticides which present a very wide range of toxic hazard. Miscibility with water depends upon the composition. Toxic if swallowed, by skin contact or by inhalation.	3016
–	T14	TP2 TP13 TP27	F-E, S-D	Category B SW2	–	Liquid flammable pesticides having a flashpoint between 23°C and 60°C c.c., presenting a very wide range of toxic hazard. They frequently contain petroleum or coal tar distillates, or other flammable liquids. Flashpoint and miscibility with water depend upon the composition. Toxic if swallowed, by skin contact or by inhalation.	3017
–	T11	TP2 TP13 TP27	F-E, S-D	Category B SW2	–	See entry above.	3017
–	T7	TP2 TP28	F-E, S-D	Category A SW2	–	See entry above.	3017
–	T14	TP2 TP13 TP27	F-A, S-A	Category B SW2	–	Liquid pesticides which present a very wide range of toxic hazard. Miscibility with water depends upon the composition. Toxic if swallowed, by skin contact or by inhalation.	3018
–	T11	TP2 TP13 TP27	F-A, S-A	Category B SW2	–	See entry above.	3018
–	T7	TP2 TP28	F-A, S-A	Category A SW2	–	See entry above.	3018
–	T14	TP2 TP13 TP27	F-E, S-D	Category B SW2	–	Liquid flammable pesticides having a flashpoint between 23°C and 60°C c.c., presenting a very wide range of toxic hazard. They frequently contain petroleum or coal tar distillates, or other flammable liquids. Flashpoint and miscibility with water depend upon the composition. Toxic if swallowed, by skin contact or by inhalation.	3019
–	T11	TP2 TP13 TP27	F-E, S-D	Category B SW2	–	See entry above.	3019
–	T7	TP2 TP28	F-E, S-D	Category A SW2	–	See entry above.	3019
–	T14	TP2 TP13 TP27	F-A, S-A	Category B SW2	–	Liquid pesticides which present a very wide range of toxic hazard. Miscibility with water depends upon the composition. Toxic if swallowed, by skin contact or by inhalation.	3020
–	T11	TP2 TP13 TP27	F-A, S-A	Category B SW2	–	See entry above.	3020
–	T7	TP2 TP28	F-A, S-A	Category A SW2	–	See entry above.	3020
–	T14	TP2 TP13 TP27	F-E, S-D	Category B SW2	–	Pesticides frequently contain petroleum or coal tar distillates, or other flammable liquids. Miscibility with water depends upon the composition. Toxic if swallowed, by skin contact or by inhalation.	3021
–	T11	TP2 TP13 TP27	F-E, S-D	Category B SW2	–	See entry above.	3021
–	T4	TP1	F-E, S-D	Category C SW1	SG20 SG21	Colourless liquid. Flashpoint: –15°C c.c. Explosive limits: 1.5% to 18.3%. Reacts violently with acids, alkalis and oxidizers. Miscible with water. Harmful if swallowed or by inhalation. Irritating to skin, eyes and mucous membranes.	3022

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						Limited quantities	Excepted quantities	Instructions	Provisions	Instructions	Provisions
(1)	(2) 3.1.2	(3) 2.0	(4) 2.0	(5) 2.0.1.3	(6) 3.3	(7a) 3.4	(7b) 3.5	(8) 4.1.4	(9) 4.1.4	(10) 4.1.4	(11) 4.1.4
3023	2-METHYL-2-HEPTANETHIOL	6.1	3	I	354	0	E0	P602	-	-	-
3024	COUMARIN DERIVATIVE PESTICIDE, LIQUID, FLAMMABLE, TOXIC, flashpoint less than 23°C	3	6.1	I	61 274	0	E0	P001	-	-	-
3024	COUMARIN DERIVATIVE PESTICIDE, LIQUID, FLAMMABLE, TOXIC, flashpoint less than 23°C	3	6.1	II	61 274	1 L	E2	P001	-	IBC02	-
3025	COUMARIN DERIVATIVE PESTICIDE, LIQUID, TOXIC, FLAMMABLE, flashpoint not less than 23°C	6.1	3	I	61 274	0	E5	P001	-	-	-
3025	COUMARIN DERIVATIVE PESTICIDE, LIQUID, TOXIC, FLAMMABLE, flashpoint not less than 23°C	6.1	3	II	61 274	100 mL	E4	P001	-	IBC02	-
3025	COUMARIN DERIVATIVE PESTICIDE, LIQUID, TOXIC, FLAMMABLE, flashpoint not less than 23°C	6.1	3	III	61 223 274	5 L	E1	P001	-	IBC03	-
3026	COUMARIN DERIVATIVE PESTICIDE, LIQUID, TOXIC	6.1	-	I	61 274	0	E5	P001	-	-	-
3026	COUMARIN DERIVATIVE PESTICIDE, LIQUID, TOXIC	6.1	-	II	61 274	100 mL	E4	P001	-	IBC02	-
3026	COUMARIN DERIVATIVE PESTICIDE, LIQUID, TOXIC	6.1	-	III	61 223 274	5 L	E1	P001 LP01	-	IBC03	-
3027	COUMARIN DERIVATIVE PESTICIDE, SOLID, TOXIC	6.1	-	I	61 274	0	E5	P002	-	IBC07	B1
3027	COUMARIN DERIVATIVE PESTICIDE, SOLID, TOXIC	6.1	-	II	61 274	500 g	E4	P002	-	IBC08	B4 B21
3027	COUMARIN DERIVATIVE PESTICIDE, SOLID, TOXIC	6.1	-	III	61 223 274	5 kg	E1	P002 LP02	-	IBC08	B3
3028	BATTERIES, DRY, CONTAINING POTASSIUM HYDROXIDE, SOLID electric storage	8	-	III	295 304	5 kg	E0	P801	-	-	-
3048	ALUMINIUM PHOSPHIDE PESTICIDE	6.1	-	I	153 930	0	E0	P002	PP31	IBC07	B1
3054	CYCLOHEXYL MERCAPTAN	3	-	III	-	5 L	E1	P001 LP01	-	IBC03	-
3055	2-(2-AMINOETHOXY)ETHANOL	8	-	III	-	5 L	E1	P001 LP01	-	IBC03	-

UN No.	Portable tanks and bulk containers		EmS	Stowage and handling	Segregation	Properties and observations	UN No.
	Tank instructions	Provisions					
(12)	(13) 4.2.5 4.3	(14) 4.2.5	(15) 5.4.3.2 7.8	(16a) 7.1 7.3-7.7	(16b) 7.2-7.7	(17)	(18)
-	T20	TP2 TP13 TP35	F-E, S-D	Category D SW2	SG57	Colourless flammable liquid with a foul odour. Flashpoint: 31°C c.c. Miscible with water. Highly toxic if swallowed, by skin contact or by inhalation.	3023
-	T14	TP2 TP13 TP27	F-E, S-D	Category B SW2	-	Pesticides frequently contain petroleum or coal tar distillates, or other flammable liquids. Miscibility with water depends upon the composition. Toxic if swallowed, by skin contact or by inhalation.	3024
-	T11	TP2 TP13 TP27	F-E, S-D	Category B SW2	-	See entry above.	3024
-	T14	TP2 TP13 TP27	F-E, S-D	Category B SW2	-	Liquid flammable pesticides having a flashpoint between 23°C and 60°C c.c., presenting a very wide range of toxic hazard. They frequently contain petroleum or coal tar distillates, or other flammable liquids. Flashpoint and miscibility with water depend upon the composition. Toxic if swallowed, by skin contact or by inhalation.	3025
-	T11	TP2 TP13 TP27	F-E, S-D	Category B SW2	-	See entry above.	3025
-	T7	TP1 TP28	F-E, S-D	Category A SW2	-	See entry above.	3025
-	T14	TP2 TP13 TP27	F-A, S-A	Category B SW2	-	Liquid pesticides which present a very wide range of toxic hazard. Miscibility with water depends upon the composition. Toxic if swallowed, by skin contact or by inhalation.	3026
-	T11	TP2 TP27	F-A, S-A	Category B SW2	-	See entry above.	3026
-	T7	TP1 TP28	F-A, S-A	Category A SW2	-	See entry above.	3026
-	T6	TP33	F-A, S-A	Category A SW2	-	Solid pesticides present a very wide range of toxic hazard. Toxic if swallowed, by skin contact or by inhalation.	3027
-	T3	TP33	F-A, S-A	Category A SW2	-	See entry above.	3027
-	T1	TP33	F-A, S-A	Category A SW2	-	See entry above.	3027
-	-	-	F-A, S-B	Category A	SG35	Series of metal plates immersed in dry potassium hydroxide in a closed receptacle. When electrically charged, may cause fire through short-circuiting of terminals. Batteries need not be individually marked and labelled if the pallet bears the appropriate mark and label. Used batteries being transported for disposal or reclamation should be carefully checked prior to shipment to ensure the integrity of each battery and its suitability for transport. React violently with acids.	3028
-	T6	TP33	F-A, S-A	Category E SW2 SW5	-	Waxed pellets, adequately stabilized powder, tablets or crystals. Highly toxic if swallowed, by skin contact or by inhalation.	3048
-	T2	TP1	F-E, S-D	Category A SW2	SG50 SG57	Colourless liquid with a garlic-like odour. Flashpoint: 49°C c.c. Immiscible with water. Harmful by inhalation. Irritating to skin, eyes and mucous membranes.	3054
-	T4	TP1	F-A, S-B	Category A	-	Colourless, slightly viscous liquid with a mild odour. Miscible with water. Harmful if swallowed or by inhalation. Corrosive to skin, eyes and mucous membranes.	3055

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UN No.	Proper shipping name (PSN)	Class or division	Subsidiary risk(s)	Packing group	Special provisions	Limited and excepted quantity provisions		Packing		IBC	
						Limited quantities	Excepted quantities	Instructions	Provisions	Instructions	Provisions
(1)	(2) 3.1.2	(3) 2.0	(4) 2.0	(5) 2.0.1.3	(6) 3.3	(7a) 3.4	(7b) 3.5	(8) 4.1.4	(9) 4.1.4	(10) 4.1.4	(11) 4.1.4
3056	<i>n</i> -HEPTALDEHYDE	3	–	III	–	5 L	E1	P001 LP01	–	IBC03	–
3057	TRIFLUOROACETYL CHLORIDE	2.3	8	–	–	0	E0	P200	–	–	–
3064	NITROGLYCERIN SOLUTION IN ALCOHOL with more than 1% but not more than 5% nitroglycerin	3	–	II	359	0	E0	P300	–	–	–
3065	ALCOHOLIC BEVERAGES, with more than 70% alcohol by volume	3	–	II	–	5 L	E2	P001	PP2	IBC02	–
3065	ALCOHOLIC BEVERAGES, with more than 24% but not more than 70% alcohol by volume	3	–	III	144 145 247	5 L	E1	P001	PP2	IBC03	–
3066	PAINT (including paint, lacquer, enamel, stain, shellac, varnish, polish, liquid filler and liquid lacquer base) or PAINT RELATED MATERIAL (including paint thinning or reducing compound)	8	–	II	163 367	1 L	E2	P001	–	IBC02	–
3066	PAINT (including paint, lacquer, enamel, stain, shellac, varnish, polish, liquid filler and liquid lacquer base) or PAINT RELATED MATERIAL (including paint thinning or reducing compound)	8	–	III	163 223 367	5 L	E1	P001	–	IBC03	–
3070	ETHYLENE OXIDE AND DICHLORODIFLUORO-METHANE MIXTURE with not more than 12.5% ethylene oxide	2.2	–	–	–	120 mL	E1	P200	–	–	–
3071	MERCAPTANS, LIQUID, TOXIC, FLAMMABLE, N.O.S. or MERCAPTAN MIXTURE, LIQUID, TOXIC, FLAMMABLE, N.O.S.	6.1	3	II	274	100 mL	E4	P001	–	IBC02	–

UN No.	Portable tanks and bulk containers		EmS	Stowage and handling	Segregation	Properties and observations	UN No.
	Tank instructions	Provisions					
(12)	(13) 4.2.5 4.3	(14) 4.2.5	(15) 5.4.3.2 7.8	(16a) 7.1 7.3–7.7	(16b) 7.2–7.7	(17)	(18)
–	T2	TP1	F-E, S-D	Category A	–	Colourless or pale yellow, oily liquid with a pungent odour. Flashpoint: 35°C to 45°C c.c. Explosive limits: 1.1% to 5.2%. Slightly soluble in water. Irritating to skin, eyes and mucous membranes.	3056
–	T50	TP21	F-C, S-U	Category D SW2	–	Liquefied, non-flammable, toxic and corrosive gas. Reacts with water. Corrosive to glass and to most metals, including steel. Heavier than air (1.4 at 20°C). Highly irritating to skin, eyes and mucous membranes.	3057
–	–	–	F-E, S-D	Category E	–	Immiscible with water. Ignites readily. When involved in a fire, evolves toxic nitrous fumes. Not explosive in this state but damage to, or leakage from, a package may allow solvent to evaporate and thus leave the nitroglycerin in an explosive state.	3064
–	T4	TP1	F-E, S-D	Category A	–	Aqueous solutions of ethanol produced and supplied as alcoholic beverages. Miscible with water. Flashpoint: –13°C c.c. or greater.	3065
–	T2	TP1	F-E, S-D	Category A	–	Alcoholic beverages containing more than 24% alcohol but not more than 70% by volume, when transported as part of the manufacturing process, may be transported in wooden barrels with a capacity of more than 250 L and not more than 500 L meeting the general requirements of 4.1.1, as appropriate, on the following conditions: .1 the wooden barrels should be checked and tightened before filling; .2 sufficient ullage (not less than 3%) should be left to allow for the expansion of the liquid; .3 the wooden barrels should be transported with the bungholes pointing upwards; .4 the wooden barrels should be transported in containers meeting the requirements of the International Convention for Safe Containers (CSC), as amended. Each wooden barrel should be secured in custom-made cradles and should be wedged by appropriate means to prevent them from being displaced in any way during transport; and .5 when carried on board ships, the containers should be stowed in open cargo spaces or in enclosed cargo spaces complying with the requirements for class 3 flammable liquids with a flashpoint of 23°C c.c. or less in regulation II-2/19 of SOLAS, 74, as amended.	3065
–	T7	TP2 TP28	F-A, S-B	Category B SW2	–	Corrosive content. Causes burns to skin, eyes and mucous membranes.	3066
–	T4	TP1 TP29	F-A, S-B	Category A SW2	–	See entry above.	3066
–	T50	–	F-C, S-V	Category A	–	Liquefied, non-flammable gas. Much heavier than air.	3070
–	T11	TP2 TP13 TP27	F-E, S-D	Category C SW2	SG57	Colourless to yellow flammable liquids with a garlic odour. Immiscible with water. Toxic if swallowed, by skin contact or by inhalation.	3071

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						Limited quantities	Excepted quantities	Instructions	Provisions	Instructions	Provisions
(1)	(2) 3.1.2	(3) 2.0	(4) 2.0	(5) 2.0.1.3	(6) 3.3	(7a) 3.4	(7b) 3.5	(8) 4.1.4	(9) 4.1.4	(10) 4.1.4	(11) 4.1.4
3072	LIFE-SAVING APPLIANCES, NOT SELF-INFLATING containing dangerous goods as equipment	9	-	-	296	0	E0	P905	-	-	-
3073	VINYLPYRIDINES, STABILIZED	6.1	3/8	II	386	100 mL	E4	P001	-	IBC01	-
3077	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S.	9	-	III	274 335 966 967 969	5 kg	E1	P002 LP02	PP12	IBC08	B3
3078	CERIUM turnings or gritty powder	4.3	-	II	-	500 g	E2	P410	PP31 PP40	IBC07	B4 B21
3079	METHACRYLONITRILE, STABILIZED	6.1	3	I	354 386	0	E0	P602	-	-	-
3080	ISOCYANATES, TOXIC, FLAMMABLE, N.O.S or ISOCYANATE SOLUTION, TOXIC, FLAMMABLE, N.O.S.	6.1	3	II	274	100 mL	E4	P001	-	IBC02	-
3082	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.	9	-	III	274 335 969	5 L	E1	P001 LP01	PP1	IBC03	-
3083	PERCHLORYL FLUORIDE	2.3	5.1	-	-	0	E0	P200	-	-	-
3084	CORROSIVE SOLID, OXIDIZING, N.O.S.	8	5.1	I	274	0	E0	P002	-	-	-
3084	CORROSIVE SOLID, OXIDIZING, N.O.S.	8	5.1	II	274	1 kg	E2	P002	-	IBC06	B21
3085	OXIDIZING SOLID, CORROSIVE, N.O.S.	5.1	8	I	274	0	E0	P503	-	-	-
3085	OXIDIZING SOLID, CORROSIVE, N.O.S.	5.1	8	II	274	1 kg	E2	P002	-	IBC06	B21
3085	OXIDIZING SOLID, CORROSIVE, N.O.S.	5.1	8	III	223 274	5 kg	E1	P002	-	IBC08	B3
3086	TOXIC SOLID, OXIDIZING, N.O.S.	6.1	5.1	I	274	0	E5	P002	-	-	-
3086	TOXIC SOLID, OXIDIZING, N.O.S.	6.1	5.1	II	274	500 g	E4	P002	-	IBC06	B21
3087	OXIDIZING SOLID, TOXIC, N.O.S.	5.1	6.1	I	274 900	0	E0	P503	-	-	-

UN No.	Portable tanks and bulk containers		EmS	Stowage and handling	Segregation	Properties and observations	UN No.
	Tank instructions	Provisions					
(12)	(13) 4.2.5 4.3	(14) 4.2.5	(15) 5.4.3.2 7.8	(16a) 7.1 7.3-7.7	(16b) 7.2-7.7	(17)	(18)
-	-	-	F-A, S-V	Category A	SG18 SG71	These articles may contain: .1 class 2.2 compressed gases; .2 signal devices (class 1) which may include smoke and illumination signal flares; signal devices must be packed in plastic or fibreboard inner packagings; .3 electric storage batteries; .4 first aid kit; or .5 "strike anywhere" matches.	3072
-	T7	TP2 TP13	F-E, S-C	Category C SW1 SW2	SG5 SG8 SG35	Colourless to straw-coloured flammable liquids. Flashpoint: 42°C to 51°C c.c. Toxic if swallowed, by skin contact or by inhalation. Cause burns to skin, eyes and mucous membranes. React violently with acids.	3073
-	T1 BK1 BK2 BK3	TP33	F-A, S-F	Category A SW23	-	-	3077
-	T3	TP33	F-G, S-O	Category E H1	SG26 SG35	Grey, ductile metal or powder. Decomposes in water and reacts violently with acids, evolving hydrogen, which may be ignited by the heat of the reaction.	3078
-	T20	TP2 TP13 TP37	F-E, S-D	Category D SW1 SW2	-	Colourless, mobile liquid with a pungent odour. Flashpoint: 4°C c.c. Explosive limits: 3% to 17%. Partially miscible with water. Highly toxic if swallowed, by skin contact or by inhalation. Practice has shown that this substance may leak from packagings that ordinarily are leakproof to other chemicals.	3079
-	T11	TP2 TP13 TP27	F-E, S-D	Category D SW1 SW2	-	Flammable liquids or solutions with a pungent odour. Immiscible with or insoluble in water, but react with it to form carbon dioxide. Toxic if swallowed, by skin contact or by inhalation. Irritating to skin, eyes and mucous membranes.	3080
-	T4	TP1 TP29	F-A, S-F	Category A	-	-	3082
-	-	-	F-C, S-W	Category D SW2	-	Non-flammable, toxic, colourless gas with a characteristic sweet odour. Strong oxidizing agent; may cause fire in contact with organic materials. Reacts with water or moist air to produce toxic and corrosive fumes. Mixtures with oils or combustible materials may explode. Much heavier than air (3.6). Irritating to skin, eyes and mucous membranes.	3083
-	T6	TP33	F-A, S-Q	Category C	-	Causes burns to skin, eyes and mucous membranes.	3084
-	T3	TP33	F-A, S-Q	Category C	-	See entry above.	3084
-	-	-	F-A, S-Q	Category D H1	SG38 SG49 SG60	Causes burns to skin, eyes and mucous membranes. Particular care in handling should be exercised if packages have become wetted.	3085
-	T3	TP33	F-A, S-Q	Category B H1	SG38 SG49 SG60	See entry above.	3085
-	T1	TP33	F-A, S-Q	Category B H1	SG38 SG49 SG60	See entry above.	3085
-	T6	TP33	F-A, S-Q	Category C	-	Toxic if swallowed, by skin contact or by inhalation.	3086
-	T3	TP33	F-A, S-Q	Category C	-	See entry above.	3086
-	-	-	F-A, S-Q	Category D	SG38 SG49 SG60	Toxic if swallowed, by skin contact or by dust inhalation. Should be handled with care to minimize exposure, particularly to dust.	3087

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						Limited quantities	Excepted quantities	Instructions	Provisions	Instructions	Provisions
(1)	(2) 3.1.2	(3) 2.0	(4) 2.0	(5) 2.0.1.3	(6) 3.3	(7a) 3.4	(7b) 3.5	(8) 4.1.4	(9) 4.1.4	(10) 4.1.4	(11) 4.1.4
3087	OXIDIZING SOLID, TOXIC, N.O.S.	5.1	6.1	II	274 900	1 kg	E2	P002	-	IBC06	B21
3087	OXIDIZING SOLID, TOXIC, N.O.S.	5.1	6.1	III	223 274 900	5 kg	E1	P002	-	IBC08	B3
3088	SELF-HEATING SOLID, ORGANIC, N.O.S.	4.2	-	II	274	0	E2	P410	PP31	IBC06	B21
3088	SELF-HEATING SOLID, ORGANIC, N.O.S.	4.2	-	III	223 274	0	E1	P002 LP02	PP31	IBC08	B3
3089	METAL POWDER, FLAMMABLE, N.O.S.	4.1	-	II	-	1 kg	E2	P002	PP100	IBC08	B4 B21
3089	METAL POWDER, FLAMMABLE, N.O.S.	4.1	-	III	223	5 kg	E1	P002	PP100	IBC08	B4 B21
3090	LITHIUM METAL BATTERIES (including lithium alloy batteries)	9	-	-	188 230 310 376 377 384	0	E0	P903 P908 P909 P910 LP903 LP904	-	-	-
3091	LITHIUM METAL BATTERIES CONTAINED IN EQUIPMENT or LITHIUM METAL BATTERIES PACKED WITH EQUIPMENT (including lithium alloy batteries)	9	-	-	188 230 310 360 376 377 384	0	E0	P903 P908 P909 P910 LP903 LP904	-	-	-
3092	1-METHOXY-2-PROPANOL	3	-	III	-	5 L	E1	P001 LP01	-	IBC03	-
3093	CORROSIVE LIQUID, OXIDIZING, N.O.S.	8	5.1	I	274	0	E0	P001	-	-	-
3093	CORROSIVE LIQUID, OXIDIZING, N.O.S.	8	5.1	II	274	1 L	E2	P001	-	IBC02	-
3094	CORROSIVE LIQUID, WATER-REACTIVE, N.O.S.	8	4.3	I	274	0	E0	P001	-	-	-
3094	CORROSIVE LIQUID, WATER-REACTIVE, N.O.S.	8	4.3	II	274	500 mL	E2	P001	-	-	-
3095	CORROSIVE SOLID, SELF-HEATING, N.O.S.	8	4.2	I	274	0	E0	P002	-	-	-
3095	CORROSIVE SOLID, SELF-HEATING, N.O.S.	8	4.2	II	274	1 kg	E2	P002	-	IBC06	B21
3096	CORROSIVE SOLID, WATER-REACTIVE, N.O.S.	8	4.3	I	274	0	E0	P002	-	-	-
3096	CORROSIVE SOLID, WATER-REACTIVE, N.O.S.	8	4.3	II	274	1 kg	E2	P002	PP100	IBC06	B21
3097	FLAMMABLE SOLID, OXIDIZING, N.O.S.	4.1	5.1	II	76 274	0	E0	P099	-	-	-
3097	FLAMMABLE SOLID, OXIDIZING, N.O.S.	4.1	5.1	III	76 274	0	E0	P099	-	-	-
3098	OXIDIZING LIQUID, CORROSIVE, N.O.S.	5.1	8	I	274	0	E0	P502	-	-	-

UN No.	Portable tanks and bulk containers		EmS	Stowage and handling	Segregation	Properties and observations	UN No.
	Tank instructions	Provisions					
(12)	(13) 4.2.5 4.3	(14) 4.2.5	(15) 5.4.3.2 7.8	(16a) 7.1 7.3-7.7	(16b) 7.2-7.7	(17)	(18)
-	T3	TP33	F-A, S-Q	Category B	SG38 SG49 SG60	Toxic if swallowed, by skin contact or by dust inhalation. Should be handled with care to minimize exposure, particularly to dust.	3087
-	T1	TP33	F-A, S-Q	Category B	SG38 SG49 SG60	See entry above.	3087
-	T3	TP33	F-A, S-J	Category C	-	Liable to self-heating or spontaneous combustion.	3088
-	T1	TP33	F-A, S-J	Category C	-	See entry above.	3088
-	T3	TP33	F-G, S-G	Category B H1	SG17 SG25 SG26	-	3089
-	T1	TP33	F-G, S-G	Category A H1	SG17 SG25 SG26	-	3089
-	-	-	F-A, S-I	Category A SW19	-	Electrical batteries containing lithium encased in a rigid metallic body. Lithium batteries may also be shipped in, or packed with, equipment. Electrical lithium batteries may cause fire due to an explosive rupture of the body caused by improper construction or reaction with contaminants.	3090
-	-	-	F-A, S-I	Category A SW19	-	See above.	3091
-	T2	TP1	F-E, S-D	Category A	-	Colourless liquid. Flashpoint: 29°C to 35°C c.c. Explosive limits: 1.7% to 11.5%. Miscible with water. Reacts with strong oxidizing substances. Irritating to skin, eyes and mucous membranes.	3092
-	-	-	F-A, S-Q	Category C	-	Causes burns to skin, eyes and mucous membranes.	3093
-	-	-	F-A, S-Q	Category C	-	See entry above.	3093
-	-	-	F-G, S-L	Category D H1	SG26	Causes burns to skin, eyes and mucous membranes.	3094
-	-	-	F-G, S-L	Category D H1	SG26	See entry above.	3094
-	T6	TP33	F-A, S-N	Category D	-	Causes burns to skin, eyes and mucous membranes.	3095
-	T3	TP33	F-A, S-N	Category D	-	See entry above.	3095
-	T6	TP33	F-G, S-L	Category D H1	SG26	Causes burns to skin, eyes and mucous membranes.	3096
-	T3	TP33	F-G, S-L	Category D H1	SG26	See entry above.	3096
-	-	-	F-A, S-Q	-	-	-	3097
-	T1	TP33	F-A, S-Q	-	-	-	3097
-	-	-	F-A, S-Q	Category D H1	SG38 SG49 SG60	Causes burns to skin, eyes and mucous membranes. Particular care in handling should be exercised if packages have become wetted.	3098

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						Limited quantities	Excepted quantities	Instructions	Provisions	Instructions	Provisions
(1)	(2) 3.1.2	(3) 2.0	(4) 2.0	(5) 2.0.1.3	(6) 3.3	(7a) 3.4	(7b) 3.5	(8) 4.1.4	(9) 4.1.4	(10) 4.1.4	(11) 4.1.4
3098	OXIDIZING LIQUID, CORROSIVE, N.O.S.	5.1	8	II	274	1 L	E2	P504	-	IBC01	-
3098	OXIDIZING LIQUID, CORROSIVE, N.O.S.	5.1	8	III	223 274	5 L	E1	P504	-	IBC02	-
3099	OXIDIZING LIQUID, TOXIC, N.O.S.	5.1	6.1	I	274	0	E0	P502	-	-	-
3099	OXIDIZING LIQUID, TOXIC, N.O.S.	5.1	6.1	II	274	1 L	E2	P504	-	IBC01	-
3099	OXIDIZING LIQUID, TOXIC, N.O.S.	5.1	6.1	III	223 274	5 L	E1	P504	-	IBC02	-
3100	OXIDIZING SOLID, SELF-HEATING, N.O.S.	5.1	4.2	I	76 274	0	E0	P099	-	-	-
3100	OXIDIZING SOLID, SELF-HEATING, N.O.S.	5.1	4.2	II	76 274	0	E0	P099	-	-	-
3101	ORGANIC PEROXIDE TYPE B, LIQUID	5.2	See SP181	-	122 181 195 274	25 mL	E0	P520	-	-	-
3102	ORGANIC PEROXIDE TYPE B, SOLID	5.2	See SP181	-	122 181 195 274	100 g	E0	P520	-	-	-
3103	ORGANIC PEROXIDE TYPE C, LIQUID	5.2	-	-	122 195 274	25 mL	E0	P520	-	-	-
3104	ORGANIC PEROXIDE TYPE C, SOLID	5.2	-	-	122 195 274	100 g	E0	P520	-	-	-
3105	ORGANIC PEROXIDE TYPE D, LIQUID	5.2	-	-	122 274	125 mL	E0	P520	-	-	-
3106	ORGANIC PEROXIDE TYPE D, SOLID	5.2	-	-	122 274	500 g	E0	P520	-	-	-
3107	ORGANIC PEROXIDE TYPE E, LIQUID	5.2	-	-	122 274	125 mL	E0	P520	-	-	-
3108	ORGANIC PEROXIDE TYPE E, SOLID	5.2	-	-	122 274	500 g	E0	P520	-	-	-
3109	ORGANIC PEROXIDE TYPE F, LIQUID	5.2	-	-	122 274	125 mL	E0	P520	-	IBC520	-

UN No.	Portable tanks and bulk containers		EmS	Stowage and handling	Segregation	Properties and observations	UN No.
	Tank instructions	Provisions					
(12)	(13) 4.2.5 4.3	(14) 4.2.5	(15) 5.4.3.2 7.8	(16a) 7.1 7.3-7.7	(16b) 7.2-7.7	(17)	(18)
-	-	-	F-A, S-Q	Category B H1	SG38 SG49 SG60	Causes burns to skin, eyes and mucous membranes. Particular care in handling should be exercised if packages have become wetted.	3098
-	-	-	F-A, S-Q	Category B H1	SG38 SG49 SG60	See entry above.	3098
-	-	-	F-A, S-Q	Category D	SG38 SG49 SG60	Toxic if swallowed, by skin contact or by dust inhalation. Should be handled with care to minimize exposure, particularly to dust.	3099
-	-	-	F-A, S-Q	Category B	SG38 SG49 SG60	See entry above.	3099
-	-	-	F-A, S-Q	Category B	SG38 SG49 SG60	See entry above.	3099
-	-	-	F-A, S-Q	-	-	-	3100
-	-	-	F-A, S-Q	-	-	-	3100
-	-	-	F-J, S-R	Category D SW1	SG1 SG35 SG36	May explode at elevated temperatures or in a fire. Burns vigorously. Immiscible with water. Contact with the eyes and skin should be avoided. May evolve irritant or toxic fumes.	3101
-	-	-	F-J, S-R	Category D SW1	SG1 SG35 SG36	May explode at elevated temperatures or in a fire. Burns vigorously. Insoluble in water. Contact with the eyes and skin should be avoided. Addition of water to disuccinic acid peroxide will decrease its thermal stability. May evolve irritant or toxic fumes.	3102
-	-	-	F-J, S-R	Category D SW1	SG35 SG36	May decompose violently at elevated temperatures or in a fire. Burns vigorously. Immiscible with water except for <i>tert</i> -butyl hydroperoxide. Contact with the eyes and skin should be avoided. May evolve irritant or toxic fumes.	3103
-	-	-	F-J, S-R	Category D SW1	SG35 SG36	May decompose violently at elevated temperatures or in a fire. Burns vigorously. Insoluble in water. Contact with the eyes and skin should be avoided. May evolve irritant or toxic fumes.	3104
-	-	-	F-J, S-R	Category D SW1	SG35 SG36 SG72	Decomposes at elevated temperatures or in a fire. Burns vigorously. Immiscible with water except for acetylacetone peroxide, <i>tert</i> -butyl hydroperoxide and peroxyacetic acid, type D, stabilized. Contact with the eyes and skin should be avoided. May evolve irritant or toxic fumes.	3105
-	-	-	F-J, S-R	Category D SW1	SG35 SG36	Decomposes at elevated temperatures or in a fire. Burns vigorously. Insoluble in water except for 3-chloroperoxybenzoic acid. Contact with the eyes and skin should be avoided. May evolve irritant or toxic fumes.	3106
-	-	-	F-J, S-R	Category D SW1	SG35 SG36 SG72	Decomposes at elevated temperatures or in a fire. Burns vigorously. Immiscible with water except for <i>tert</i> -amyl hydroperoxide, and <i>tert</i> -butyl hydroperoxide and peroxyacetic acid, type E, stabilized. Contact with the eyes and skin should be avoided. May evolve irritant or toxic fumes.	3107
-	-	-	F-J, S-R	Category D SW1	SG35 SG36	Decomposes at elevated temperatures or in a fire. Burns vigorously. Insoluble in water. Contact with the eyes and skin should be avoided. May evolve irritant or toxic fumes.	3108
-	T23	-	F-J, S-R	Category D SW1	SG35 SG36 SG72	Decomposes at elevated temperatures or in a fire. Burns vigorously. Immiscible with water except for <i>tert</i> -butyl hydroperoxide; dibenzoyl peroxide; dilauroyl peroxide and peroxyacetic acid, type F, stabilized. Contact with the eyes and skin should be avoided. May evolve irritant or toxic fumes.	3109

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						Limited quantities	Excepted quantities	Instructions	Provisions	Instructions	Provisions
(1)	(2) 3.1.2	(3) 2.0	(4) 2.0	(5) 2.0.1.3	(6) 3.3	(7a) 3.4	(7b) 3.5	(8) 4.1.4	(9) 4.1.4	(10) 4.1.4	(11) 4.1.4
3110	ORGANIC PEROXIDE TYPE F, SOLID	5.2	–	–	122 274	500 g	E0	P520	–	IBC520	–
3111	ORGANIC PEROXIDE TYPE B, LIQUID, TEMPERATURE CONTROLLED	5.2	See SP181	–	122 181 195 274 923	0	E0	P520	–	–	–
3112	ORGANIC PEROXIDE TYPE B, SOLID, TEMPERATURE CONTROLLED	5.2	See SP181	–	122 181 195 274 923	0	E0	P520	–	–	–
3113	ORGANIC PEROXIDE TYPE C, LIQUID, TEMPERATURE CONTROLLED	5.2	–	–	122 195 274 923	0	E0	P520	–	–	–
3114	ORGANIC PEROXIDE TYPE C, SOLID, TEMPERATURE CONTROLLED	5.2	–	–	122 195 274 923	0	E0	P520	–	–	–
3115	ORGANIC PEROXIDE TYPE D, LIQUID, TEMPERATURE CONTROLLED	5.2	–	–	122 274 923	0	E0	P520	–	–	–
3116	ORGANIC PEROXIDE TYPE D, SOLID, TEMPERATURE CONTROLLED	5.2	–	–	122 274 923	0	E0	P520	–	–	–
3117	ORGANIC PEROXIDE TYPE E, LIQUID, TEMPERATURE CONTROLLED	5.2	–	–	122 274 923	0	E0	P520	–	–	–
3118	ORGANIC PEROXIDE TYPE E, SOLID, TEMPERATURE CONTROLLED	5.2	–	–	122 274 923	0	E0	P520	–	–	–
3119	ORGANIC PEROXIDE TYPE F, LIQUID, TEMPERATURE CONTROLLED	5.2	–	–	122 274 923	0	E0	P520	–	IBC520	–

(12)	Portable tanks and bulk containers		EmS	Stowage and handling	Segregation	Properties and observations	UN No.
	Tank instructions	Provisions					
(13) 4.2.5 4.3	(14) 4.2.5	(15) 5.4.3.2 7.8	(16a) 7.1 7.3–7.7	(16b) 7.2–7.7	(17)	(18)	
–	T23	TP33	F-J, S-R	Category D SW1	SG35 SG36	Decomposes at elevated temperatures or in a fire. Burns vigorously. Insoluble in water. Contact with the eyes and skin should be avoided. May evolve irritant or toxic fumes.	3110
–	–	–	F-F, S-R	Category D SW1 SW3	SG1 SG35 SG36	May explode at temperatures higher than the emergency temperature or in a fire. Burns vigorously. Immiscible with water. Contact with the eyes and skin should be avoided. Control and emergency temperatures for each formulation are given in table 2.5.3.2.4. The temperature should be checked regularly. May evolve irritant or toxic fumes.	3111
–	–	–	F-F, S-R	Category D SW1 SW3	SG1 SG35 SG36	May explode at temperatures higher than the emergency temperature or in a fire. Burns vigorously. Immiscible with water. Contact with the eyes and skin should be avoided. Control and emergency temperatures for each formulation are given in table 2.5.3.2.4. The temperature should be checked regularly. May evolve irritant or toxic fumes.	3112
–	–	–	F-F, S-R	Category D SW1 SW3	SG35 SG36	May decompose violently at temperatures higher than the emergency temperature or in a fire. Burns vigorously. Immiscible with water. Contact with the eyes and skin should be avoided. Control and emergency temperatures for each formulation are given in table 2.5.3.2.4. The temperature should be checked regularly. May evolve irritant or toxic fumes.	3113
–	–	–	F-F, S-R	Category D SW1 SW3	SG35 SG36	May decompose violently at temperatures higher than the emergency temperature or in a fire. Burns vigorously. Insoluble in water. Contact with the eyes and skin should be avoided. Control and emergency temperatures for each formulation are given in table 2.5.3.2.4. The temperature should be checked regularly. May evolve irritant or toxic fumes.	3114
–	–	–	F-F, S-R	Category D SW1 SW3	SG35 SG36	Decomposes at temperatures higher than the emergency temperature or in a fire. Burns vigorously. Immiscible with water. Contact with the eyes and skin should be avoided. Control and emergency temperatures for each formulation are given in table 2.5.3.2.4. The temperature should be checked regularly. May evolve irritant or toxic fumes.	3115
–	–	–	F-F, S-R	Category D SW1 SW3	SG35 SG36	Decomposes at temperatures higher than the emergency temperature or in a fire. Burns vigorously. Insoluble in water except for diperoxyazelaic acid. Contact with the eyes and skin should be avoided. Control and emergency temperatures for each formulation are given in table 2.5.3.2.4. The temperature should be checked regularly. May evolve irritant or toxic fumes.	3116
–	–	–	F-F, S-R	Category D SW1 SW3	SG35 SG36	Decomposes at temperatures higher than the emergency temperature or in a fire. Burns vigorously. Immiscible with water. Contact with the eyes and skin should be avoided. Control and emergency temperatures for each formulation are given in table 2.5.3.2.4. The temperature should be checked regularly. May evolve irritant or toxic fumes.	3117
–	–	–	F-F, S-R	Category D SW1 SW3	SG35 SG36	Decomposes at temperatures higher than the emergency temperature or in a fire. Burns vigorously. Insoluble in water except for di-(2-ethylhexyl) peroxydicarbonate. Contact with the eyes and skin should be avoided. Control and emergency temperatures for each formulation are given in table 2.5.3.2.4. The temperature should be checked regularly. May evolve irritant or toxic fumes.	3118
–	T23	–	F-F, S-R	Category D SW1 SW3	SG35 SG36	Decomposes at temperatures higher than the emergency temperature or in a fire. Burns vigorously. Immiscible with water except for di-(4-tert-butylcyclohexyl) peroxydicarbonate, dicetyl peroxydicarbonate and dimyristyl peroxydicarbonate. Contact with the eyes and skin should be avoided. Control and emergency temperatures for each formulation are given in table 2.5.3.2.4. The temperature should be checked regularly. May evolve irritant or toxic fumes.	3119

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						Limited quantities	Excepted quantities	Instructions	Provisions	Instructions	Provisions
(1)	(2) 3.1.2	(3) 2.0	(4) 2.0	(5) 2.0.1.3	(6) 3.3	(7a) 3.4	(7b) 3.5	(8) 4.1.4	(9) 4.1.4	(10) 4.1.4	(11) 4.1.4
3120	ORGANIC PEROXIDE TYPE F, SOLID, TEMPERATURE CONTROLLED	5.2	–	–	122 274 923	0	E0	P520	–	IBC520	–
3121	OXIDIZING SOLID, WATER-REACTIVE, N.O.S.	5.1	4.3	I	76 274	0	E0	P099	–	–	–
3121	OXIDIZING SOLID, WATER-REACTIVE, N.O.S.	5.1	4.3	II	76 274	0	E0	P099	–	–	–
3122	TOXIC LIQUID, OXIDIZING, N.O.S.	6.1	5.1	I	274 315	0	E0	P001	–	–	–
3122	TOXIC LIQUID, OXIDIZING, N.O.S.	6.1	5.1	II	274	100 mL	E4	P001	–	IBC02	–
3123	TOXIC LIQUID, WATER-REACTIVE, N.O.S.	6.1	4.3	I	274 315	0	E0	P099	–	–	–
3123	TOXIC LIQUID, WATER-REACTIVE, N.O.S.	6.1	4.3	II	274	100 mL	E4	P001	–	IBC02	–
3124	TOXIC SOLID, SELF-HEATING, N.O.S.	6.1	4.2	I	274	0	E5	P002	–	–	–
3124	TOXIC SOLID, SELF-HEATING, N.O.S.	6.1	4.2	II	274	0	E4	P002	–	IBC06	B21
3125	TOXIC SOLID, WATER-REACTIVE, N.O.S.	6.1	4.3	I	274	0	E5	P099	–	–	–
3125	TOXIC SOLID, WATER-REACTIVE, N.O.S.	6.1	4.3	II	274	500 g	E4	P002	PP100	IBC06	B21
3126	SELF-HEATING SOLID, CORROSIVE, ORGANIC, N.O.S.	4.2	8	II	76 274	0	E2	P410	–	IBC05	B21
3126	SELF-HEATING SOLID, CORROSIVE, ORGANIC, N.O.S.	4.2	8	III	76 223 274	0	E1	P002	–	IBC08	B3
3127	SELF-HEATING SOLID, OXIDIZING, N.O.S.	4.2	5.1	II	76 274	0	E0	P099	–	–	–
3127	SELF-HEATING SOLID, OXIDIZING, N.O.S.	4.2	5.1	III	76 223 274	0	E0	P099	–	–	–
3128	SELF-HEATING SOLID, TOXIC, ORGANIC, N.O.S.	4.2	6.1	II	76 274	0	E2	P410	–	IBC05	B21
3128	SELF-HEATING SOLID, TOXIC, ORGANIC, N.O.S.	4.2	6.1	III	76 223 274	0	E1	P002	–	IBC08	B3
3129	WATER-REACTIVE LIQUID, CORROSIVE, N.O.S.	4.3	8	I	76 274	0	E0	P402	–	–	–
3129	WATER-REACTIVE LIQUID, CORROSIVE, N.O.S.	4.3	8	II	76 274	0	E0	P402	–	IBC01	–
3129	WATER-REACTIVE LIQUID, CORROSIVE, N.O.S.	4.3	8	III	76 223 274	0	E1	P001	–	IBC02	–
3130	WATER-REACTIVE LIQUID, TOXIC, N.O.S.	4.3	6.1	I	76 274	0	E0	P402	–	–	–

UN No.	Portable tanks and bulk containers		EmS	Stowage and handling	Segregation	Properties and observations	UN No.
	Tank instructions	Provisions					
(12)	(13) 4.2.5 4.3	(14) 4.2.5	(15) 5.4.3.2 7.8	(16a) 7.1 7.3–7.7	(16b) 7.2–7.7	(17)	(18)
–	T23	TP33	F-F, S-R	Category D SW1 SW3	SG35 SG36	Decomposes at temperatures higher than the emergency temperature or in a fire. Burns vigorously. Insoluble in water. Contact with the eyes and skin should be avoided. Control and emergency temperatures for each formulation are given in the table 2.5.3.2.4. The temperature should be checked regularly. May evolve irritant or toxic fumes.	3120
–	–	–	F-G, S-L	H1	SG26	–	3121
–	–	–	F-G, S-L	H1	SG26	–	3121
–	–	–	F-A, S-Q	Category C	–	Toxic if swallowed, by skin contact or by inhalation.	3122
–	–	–	F-A, S-Q	Category C	–	See entry above.	3122
–	–	–	F-G, S-N	Category D SW2 H1	SG26	Toxic if swallowed, by skin contact or by inhalation.	3123
–	–	–	F-G, S-N	Category D SW2 H1	SG26	See entry above.	3123
–	T6	TP33	F-A, S-J	Category D SW2	–	Highly toxic if swallowed, by skin contact or by inhalation.	3124
–	T3	TP33	F-A, S-J	Category D SW2	–	See entry above.	3124
–	T6	TP33	F-G, S-N	Category D SW2 H1	SG26	Toxic if swallowed, by skin contact or by inhalation.	3125
–	T3	TP33	F-G, S-N	Category D SW2 H1	SG26	See entry above.	3125
–	T3	TP33	F-A, S-J	Category C	–	–	3126
–	T1	TP33	F-A, S-J	Category C	–	–	3126
–	T3	TP33	F-A, S-J	–	–	–	3127
–	T1	TP33	F-A, S-J	–	–	–	3127
–	T3	TP33	F-A, S-J	Category C	–	–	3128
–	T1	TP33	F-A, S-J	Category C	–	–	3128
–	T14	TP2 TP7 TP13	F-G, S-N	Category D H1	SG26	–	3129
–	T11	TP2 TP7	F-G, S-N	Category E SW5 H1	SG26	–	3129
–	T7	TP2 TP7	F-G, S-N	Category E H1	SG26	–	3129
–	–	–	F-G, S-N	Category D H1	SG26	–	3130

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						Limited quantities	Excepted quantities	Instructions	Provisions	Instructions	Provisions
(1)	(2) 3.1.2	(3) 2.0	(4) 2.0	(5) 2.0.1.3	(6) 3.3	(7a) 3.4	(7b) 3.5	(8) 4.1.4	(9) 4.1.4	(10) 4.1.4	(11) 4.1.4
3130	WATER-REACTIVE LIQUID, TOXIC, N.O.S.	4.3	6.1	II	76 274	0	E0	P402	-	IBC01	-
3130	WATER-REACTIVE LIQUID, TOXIC, N.O.S.	4.3	6.1	III	76 223 274	0	E1	P001	-	IBC02	-
3131	WATER-REACTIVE SOLID, CORROSIVE, N.O.S.	4.3	8	I	76 274	0	E0	P403	PP31	-	-
3131	WATER-REACTIVE SOLID, CORROSIVE, N.O.S.	4.3	8	II	76 274	0	E2	P410	PP31 PP40	IBC06	B21
3131	WATER-REACTIVE SOLID, CORROSIVE, N.O.S.	4.3	8	III	76 223 274	0	E1	P410	PP31	IBC08	B4
3132	WATER-REACTIVE SOLID, FLAMMABLE, N.O.S.	4.3	4.1	I	76 274	0	E0	P403	PP31	IBC99	-
3132	WATER-REACTIVE SOLID, FLAMMABLE, N.O.S.	4.3	4.1	II	76 274	0	E2	P410	PP31 PP40	IBC04	-
3132	WATER-REACTIVE SOLID, FLAMMABLE, N.O.S.	4.3	4.1	III	76 223 274	0	E1	P410	PP31 PP40	IBC06	-
3133	WATER-REACTIVE SOLID, OXIDIZING, N.O.S.	4.3	5.1	II	76 274	0	E0	P099	-	-	-
3133	WATER-REACTIVE SOLID, OXIDIZING, N.O.S.	4.3	5.1	III	76 223 274	0	E0	P099	-	-	-
3134	WATER-REACTIVE SOLID, TOXIC, N.O.S.	4.3	6.1	I	274	0	E0	P403	PP31	-	-
3134	WATER-REACTIVE SOLID, TOXIC, N.O.S.	4.3	6.1	II	274	500 g	E2	P410	PP31 PP40	IBC05	B21
3134	WATER-REACTIVE SOLID, TOXIC, N.O.S.	4.3	6.1	III	223 274	1 kg	E1	P410	PP31	IBC08	B4
3135	WATER-REACTIVE SOLID, SELF-HEATING, N.O.S.	4.3	4.2	I	76 274	0	E0	P403	PP31	-	-
3135	WATER-REACTIVE SOLID, SELF-HEATING, N.O.S.	4.3	4.2	II	76 274	0	E2	P410	PP31	IBC05	B21
3135	WATER-REACTIVE SOLID, SELF-HEATING, N.O.S.	4.3	4.2	III	76 223 274	0	E1	P410	PP31	IBC08	B4
3136	TRIFLUOROMETHANE, REFRIGERATED LIQUID	2.2	-	-	-	120 mL	E1	P203	-	-	-
3137	OXIDIZING SOLID, FLAMMABLE, N.O.S.	5.1	4.1	I	76 274	0	E0	P099	-	-	-
3138	ETHYLENE, ACETYLENE AND PROPYLENE MIXTURE, REFRIGERATED LIQUID containing at least 71.5% ethylene, with not more than 22.5% acetylene and not more than 6% propylene	2.1	-	-	-	0	E0	P203	-	-	-
3139	OXIDIZING LIQUID, N.O.S.	5.1	-	I	274	0	E0	P502	-	-	-

UN No.	Portable tanks and bulk containers		EmS	Stowage and handling	Segregation	Properties and observations	UN No.
	Tank instructions	Provisions					
(12)	(13) 4.2.5 4.3	(14) 4.2.5	(15) 5.4.3.2 7.8	(16a) 7.1 7.3-7.7	(16b) 7.2-7.7	(17)	(18)
-	-	-	F-G, S-N	Category E SW5 H1	SG26	-	3130
-	-	-	F-G, S-N	Category E SW5 H1	SG26	-	3130
-	T9	TP7 TP33	F-G, S-L	Category D H1	SG26	-	3131
-	T3	TP33	F-G, S-L	Category E SW5 H1	SG26	-	3131
-	T1	TP33	F-G, S-L	Category E SW5 H1	SG26	-	3131
-	-	-	F-G, S-N	H1	SG26	-	3132
-	T3	TP33	F-G, S-N	H1	SG26	-	3132
-	T1	TP33	F-G, S-N	H1	SG26	-	3132
-	-	-	F-G, S-L	H1	SG26	-	3133
-	-	-	F-G, S-L	H1	SG26	-	3133
-	-	-	F-G, S-N	Category D H1	SG26	-	3134
-	T3	TP33	F-G, S-N	Category E SW5 H1	SG26	-	3134
-	T1	TP33	F-G, S-N	Category E SW5 H1	SG26	-	3134
-	-	-	F-G, S-N	H1	SG26	-	3135
-	T3	TP33	F-G, S-N	H1	SG26	-	3135
-	T1	TP33	F-G, S-N	H1	SG26	-	3135
-	T75	TP5	F-C, S-V	Category D	-	Liquefied, non-flammable gas. Much heavier than air (2.4).	3136
-	-	-	F-G, S-Q	H1	SG25 SG26	-	3137
-	T75	TP5	F-D, S-U	Category D SW2	SG46	Liquefied, flammable, colourless mixture of gases with a garlic odour. Explosive limits: 2.7% to 36%. Lighter than air (0.96).	3138
-	-	-	F-A, S-Q	Category D	SG38 SG49 SG60	-	3139

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						Limited quantities	Excepted quantities	Instructions	Provisions	Instructions	Provisions
(1)	(2) 3.1.2	(3) 2.0	(4) 2.0	(5) 2.0.1.3	(6) 3.3	(7a) 3.4	(7b) 3.5	(8) 4.1.4	(9) 4.1.4	(10) 4.1.4	(11) 4.1.4
3139	OXIDIZING LIQUID, N.O.S.	5.1	–	II	274	1 L	E2	P504	–	IBC02	–
3139	OXIDIZING LIQUID, N.O.S.	5.1	–	III	223 274	5 L	E1	P504	–	IBC02	–
3140	ALKALOIDS, LIQUID, N.O.S. or ALKALOIDS SALTS, LIQUID, N.O.S.	6.1	–	I	43 274	0	E5	P001	–	–	–
3140	ALKALOIDS, LIQUID, N.O.S. or ALKALOIDS SALTS, LIQUID, N.O.S.	6.1	–	II	43 274	100 mL	E4	P001	–	IBC02	–
3140	ALKALOIDS, LIQUID, N.O.S. or ALKALOIDS SALTS, LIQUID, N.O.S.	6.1	–	III	43 223 274	5 L	E1	P001 LP01	–	IBC03	–
3141	ANTIMONY COMPOUND, INORGANIC, LIQUID, N.O.S.	6.1	–	III	45 274	5 L	E1	P001 LP01	–	IBC03	–
3142	DISINFECTANT, LIQUID, TOXIC, N.O.S.	6.1	–	I	274	0	E5	P001	–	–	–
3142	DISINFECTANT, LIQUID, TOXIC, N.O.S.	6.1	–	II	274	100 mL	E4	P001	–	IBC02	–
3142	DISINFECTANT, LIQUID, TOXIC, N.O.S.	6.1	–	III	223 274	5 L	E1	P001 LP01	–	IBC03	–
3143	DYE, SOLID, TOXIC, N.O.S. or DYE INTERMEDIATE, SOLID, TOXIC, N.O.S.	6.1	–	I	274	0	E5	P002	–	IBC07	B1
3143	DYE, SOLID, TOXIC, N.O.S. or DYE INTERMEDIATE, SOLID, TOXIC, N.O.S.	6.1	–	II	274	500 g	E4	P002	–	IBC08	B4 B21
3143	DYE, SOLID, TOXIC, N.O.S. or DYE INTERMEDIATE, SOLID, TOXIC, N.O.S.	6.1	–	III	223 274	5 kg	E1	P002 LP02	–	IBC08	B3
3144	NICOTINE COMPOUND, LIQUID, N.O.S. or NICOTINE PREPARATION, LIQUID, N.O.S.	6.1	–	I	43 274	0	E5	P001	–	–	–
3144	NICOTINE COMPOUND, LIQUID, N.O.S. or NICOTINE PREPARATION, LIQUID, N.O.S.	6.1	–	II	43 274	100 mL	E4	P001	–	IBC02	–
3144	NICOTINE COMPOUND, LIQUID, N.O.S. or NICOTINE PREPARATION, LIQUID, N.O.S.	6.1	–	III	43 223 274	5 L	E1	P001 LP01	–	IBC03	–
3145	ALKYLPHENOLS, LIQUID, N.O.S. (including C ₂ –C ₁₂ homologues)	8	–	I	–	0	E0	P001	–	–	–
3145	ALKYLPHENOLS, LIQUID, N.O.S. (including C ₂ –C ₁₂ homologues)	8	–	II	–	1 L	E2	P001	–	IBC02	–
3145	ALKYLPHENOLS, LIQUID, N.O.S. (including C ₂ –C ₁₂ homologues)	8	–	III	223	5 L	E1	P001 LP01	–	IBC03	–
3146	ORGANOTIN COMPOUND, SOLID, N.O.S.	6.1	– P	I	43 274	0	E5	P002	–	IBC07	B1
3146	ORGANOTIN COMPOUND, SOLID, N.O.S.	6.1	– P	II	43 274	500 g	E4	P002	–	IBC08	B4 B21
3146	ORGANOTIN COMPOUND, SOLID, N.O.S.	6.1	– P	III	43 223 274	5 kg	E1	P002 LP02	–	IBC08	B3

UN No.	Portable tanks and bulk containers		EmS	Stowage and handling	Segregation	Properties and observations	UN No.
	Tank instructions	Provisions					
(12)	(13) 4.2.5 4.3	(14) 4.2.5	(15) 5.4.3.2 7.8	(16a) 7.1 7.3–7.7	(16b) 7.2–7.7	(17)	(18)
–	–	–	F-A, S-Q	Category B	SG38 SG49 SG60	–	3139
–	–	–	F-A, S-Q	Category B	SG38 SG49 SG60	–	3139
–	–	–	F-A, S-A	Category A	–	A wide range of toxic liquids, generally of vegetable origin. Toxic if swallowed, by skin contact or by inhalation.	3140
–	–	–	F-A, S-A	Category A	–	See entry above.	3140
–	–	–	F-A, S-A	Category A	–	See entry above.	3140
–	–	–	F-A, S-A	Category A	–	A wide range of toxic liquids. Toxic if swallowed, by skin contact or by inhalation.	3141
–	–	–	F-A, S-A	Category A SW2	–	A wide range of toxic liquids. Toxic if swallowed, by skin contact or by inhalation.	3142
–	–	–	F-A, S-A	Category A SW2	–	See entry above.	3142
–	–	–	F-A, S-A	Category A SW2	–	See entry above.	3142
–	T6	TP33	F-A, S-A	Category A	–	A wide range of toxic solids. Toxic if swallowed, by skin contact or by inhalation.	3143
–	T3	TP33	F-A, S-A	Category A	–	See entry above.	3143
–	T1	TP33	F-A, S-A	Category A	–	See entry above.	3143
–	–	–	F-A, S-A	Category B SW2	–	A wide variety of toxic liquids. Toxic if swallowed, by skin contact or by inhalation.	3144
–	–	–	F-A, S-A	Category B SW2	–	See entry above.	3144
–	–	–	F-A, S-A	Category B SW2	–	See entry above.	3144
–	T14	TP2	F-A, S-B	Category B	–	A wide range of colourless to pale straw-coloured liquids with penetrating odours (sometimes camphor-like). Liquids slightly miscible with water. Cause burns to skin, eyes and mucous membranes.	3145
–	T11	TP2 TP27	F-A, S-B	Category B	–	See entry above.	3145
–	T7	TP1 TP28	F-A, S-B	Category A	–	See entry above.	3145
–	T6	TP33	F-A, S-A	Category B SW2	–	A wide variety of toxic solids. Toxic if swallowed, by skin contact or by inhalation.	3146
–	T3	TP33	F-A, S-A	Category A SW2	–	See entry above.	3146
–	T1	TP33	F-A, S-A	Category A SW2	–	See entry above.	3146

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UN No.	Proper shipping name (PSN)	Class or division	Subsidiary risk(s)	Packing group	Special provisions	Limited and excepted quantity provisions		Packing		IBC	
						Limited quantities	Excepted quantities	Instructions	Provisions	Instructions	Provisions
(1)	(2) 3.1.2	(3) 2.0	(4) 2.0	(5) 2.0.1.3	(6) 3.3	(7a) 3.4	(7b) 3.5	(8) 4.1.4	(9) 4.1.4	(10) 4.1.4	(11) 4.1.4
3147	DYE, SOLID, CORROSIVE, N.O.S. or DYE INTERMEDIATE, SOLID, CORROSIVE, N.O.S.	8	–	I	274	0	E0	P002	–	IBC07	B1
3147	DYE, SOLID, CORROSIVE, N.O.S. or DYE INTERMEDIATE, SOLID, CORROSIVE, N.O.S.	8	–	II	274	1 kg	E2	P002	–	IBC08	B4 B21
3147	DYE, SOLID, CORROSIVE, N.O.S. or DYE INTERMEDIATE, SOLID, CORROSIVE, N.O.S.	8	–	III	223 274	5 kg	E1	P002 LP02	–	IBC08	B3
3148	WATER-REACTIVE LIQUID, N.O.S.	4.3	–	I	274	0	E0	P402	PP31	–	–
3148	WATER-REACTIVE LIQUID, N.O.S.	4.3	–	II	274	500 mL	E2	P402	PP31	IBC01	–
3148	WATER-REACTIVE LIQUID, N.O.S.	4.3	–	III	223 274	1 L	E1	P001	PP31	IBC02	–
3149	HYDROGEN PEROXIDE AND PEROXYACETIC ACID MIXTURE with acid(s), water and not more than 5% peroxyacetic acid, STABILIZED	5.1	8	II	196	1 L	E2	P504	PP10	IBC02	B5
3150	DEVICES, SMALL, HYDROCARBON GAS POWERED or HYDROCARBON GAS REFILLS FOR SMALL DEVICES with release device	2.1	–	–	–	0	E0	P003	–	–	–
3151	POLYHALOGENATED BIPHENYLS, LIQUID or HALOGENATED MONOMETHYL-DIPHENYLMETHANES, LIQUID or POLYHALOGENATED TERPHENYLS, LIQUID	9	– P	II	203 305	1 L	E2	P906	–	IBC02	–
3152	POLYHALOGENATED BIPHENYLS, SOLID or HALOGENATED MONOMETHYL-DIPHENYLMETHANES, SOLID or POLYHALOGENATED TERPHENYLS, SOLID	9	– P	II	203 305 958	1 kg	E2	P906	–	IBC08	B4 B21
3153	PERFLUORO(METHYL VINYL ETHER)	2.1	–	–	–	0	E0	P200	–	–	–
3154	PERFLUORO(ETHYL VINYL ETHER)	2.1	–	–	–	0	E0	P200	–	–	–
3155	PENTACHLOROPHENOL	6.1	– P	II	43	500 g	E4	P002	–	IBC08	B4 B21
3156	COMPRESSED GAS, OXIDIZING, N.O.S.	2.2	5.1	–	274	0	E0	P200	–	–	–
3157	LIQUEFIED GAS, OXIDIZING, N.O.S.	2.2	5.1	–	274	0	E0	P200	–	–	–
3158	GAS, REFRIGERATED LIQUID, N.O.S.	2.2	–	–	274	120 mL	E1	P203	–	–	–
3159	1,1,1,2-TETRAFLUOROETHANE (REFRIGERANT GAS R 134a)	2.2	–	–	–	120 mL	E1	P200	–	–	–
3160	LIQUEFIED GAS, TOXIC, FLAMMABLE, N.O.S.	2.3	2.1	–	274	0	E0	P200	–	–	–

UN No.	Portable tanks and bulk containers		EmS	Stowage and handling	Segregation	Properties and observations	UN No.
	Tank instructions	Provisions					
(12)	(13) 4.2.5 4.3	(14) 4.2.5	(15) 5.4.3.2 7.8	(16a) 7.1 7.3–7.7	(16b) 7.2–7.7	(17)	(18)
–	T6	TP33	F-A, S-B	Category A	–	A wide range of corrosive solids or pastes. Cause burns to skin, eyes and mucous membranes.	3147
–	T3	TP33	F-A, S-B	Category A	–	See entry above.	3147
–	T1	TP33	F-A, S-B	Category A	–	See entry above.	3147
–	T13	TP2 TP7 TP38	F-G, S-N	Category E SW2 H1	SG26	–	3148
–	T7	TP2 TP7	F-G, S-N	Category E SW2 H1	SG26	–	3148
–	T7	TP2 TP7	F-G, S-N	Category E SW2 H1	SG26	–	3148
–	T7	TP2 TP6 TP24	F-H, S-Q	Category D SW1	SG16 SG59 SG72	Colourless liquid. Carried as an aqueous solution. Slowly decomposes, evolving oxygen; the rate of decomposition increases on contact with most metals. In contact with combustible material, may cause fire. Causes burns to skin, eyes and mucous membranes. Even though stabilized, these solutions may evolve oxygen.	3149
–	–	–	F-D, S-U	Category B SW2	–	Various small devices used for cosmetic and other purposes, and their refills.	3150
–	–	–	F-A, S-A	Category A	SG50	Viscous liquids with a perceptible odour. Harmful by ingestion or by skin contact. This entry also covers articles, such as transformers and condensers, containing free liquid polyhalogenated biphenyls or polyhalogenated terphenyls.	3151
–	T3	TP33	F-A, S-A	Category A	SG50	Solid with a perceptible odour. Melting point of solids varies from 2°C to 164°C. Harmful by ingestion or by skin contact. This entry also covers articles, such as rags, cotton waste, clothing or sawdust, containing polyhalogenated biphenyls or polyhalogenated terphenyls where no free visible liquid is present.	3152
–	T50	–	F-D, S-U	Category E SW2	–	Explosive limits: 7% to 73%. Much heavier than air (4.8). Boiling point: –27°C.	3153
–	–	–	F-D, S-U	Category E SW2	–	Explosive limits: 7% to 73%. Much heavier than air (6.4). Boiling point: 12°C.	3154
–	T3	TP33	F-A, S-A	Category A	–	Toxic if swallowed, by skin contact or by dust inhalation.	3155
–	–	–	F-C, S-W	Category D	–	–	3156
–	–	–	F-C, S-W	Category D	–	–	3157
–	T75	TP5	F-C, S-V	Category D	–	–	3158
–	T50	–	F-C, S-V	Category A	–	Non-flammable gas with a mild ether-like odour. Much heavier than air (3.5).	3159
–	–	–	F-D, S-U	Category D SW2	–	–	3160

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						Limited quantities	Excepted quantities	Instructions	Provisions	Instructions	Provisions
(1)	(2) 3.1.2	(3) 2.0	(4) 2.0	(5) 2.0.1.3	(6) 3.3	(7a) 3.4	(7b) 3.5	(8) 4.1.4	(9) 4.1.4	(10) 4.1.4	(11) 4.1.4
3161	LIQUEFIED GAS, FLAMMABLE, N.O.S.	2.1	-	-	274	0	E0	P200	-	-	-
3162	LIQUEFIED GAS, TOXIC, N.O.S.	2.3	-	-	274	0	E0	P200	-	-	-
3163	LIQUEFIED GAS, N.O.S.	2.2	-	-	274	120 mL	E1	P200	-	-	-
3164	ARTICLES, PRESSURIZED, PNEUMATIC or HYDRAULIC (containing non-flammable gas)	2.2	-	-	283 371	120 mL	E0	P003	-	-	-
3165	AIRCRAFT HYDRAULIC POWER UNIT FUEL TANK (containing a mixture of anhydrous hydrazine and methylhydrazine) (M86 fuel)	3	6.1/8	I	-	0	E0	P301	-	-	-
3166	VEHICLE, FLAMMABLE GAS POWERED or VEHICLE, FLAMMABLE LIQUID POWERED or VEHICLE, FUEL CELL, FLAMMABLE GAS POWERED or VEHICLE, FUEL CELL, FLAMMABLE LIQUID POWERED	9	-	-	312 356 380 385 961 962	-	-	-	-	-	-
3167	GAS SAMPLE, NON-PRESSURIZED, FLAMMABLE, N.O.S., not refrigerated liquid	2.1	-	-	209	0	E0	P201	-	-	-
3168	GAS SAMPLE, NON-PRESSURIZED, TOXIC, FLAMMABLE, N.O.S., not refrigerated liquid	2.3	2.1	-	209	0	E0	P201	-	-	-
3169	GAS SAMPLE, NON-PRESSURIZED, TOXIC, N.O.S., not refrigerated liquid	2.3	-	-	209	0	E0	P201	-	-	-
3170	ALUMINIUM SMELTING BY-PRODUCTS or ALUMINIUM REMELTING BY-PRODUCTS	4.3	-	II	244	500 g	E2	P410	PP31 PP40	IBC07	B4 B21
3170	ALUMINIUM SMELTING BY-PRODUCTS or ALUMINIUM REMELTING BY-PRODUCTS	4.3	-	III	223 244	1 kg	E1	P002	PP31	IBC08	B4
3171	BATTERY-POWERED VEHICLE or BATTERY-POWERED EQUIPMENT	9	-	-	240 961 962 971	-	-	-	-	-	-
3172	TOXINS, EXTRACTED FROM LIVING SOURCES, LIQUID, N.O.S.	6.1	-	I	210 274	0	E5	P001	-	-	-
3172	TOXINS, EXTRACTED FROM LIVING SOURCES, LIQUID, N.O.S.	6.1	-	II	210 274	100 mL	E4	P001	-	IBC02	-
3172	TOXINS, EXTRACTED FROM LIVING SOURCES, LIQUID, N.O.S.	6.1	-	III	210 223 274	5 L	E1	P001 LP01	-	IBC03	-
3174	TITANIUM DISULPHIDE	4.2	-	III	-	0	E1	P002 LP02	PP31	IBC08	B3
3175	SOLIDS CONTAINING FLAMMABLE LIQUID, N.O.S.	4.1	-	II	216 274	1 kg	E2	P002	PP9	IBC06	B21

UN No.	Portable tanks and bulk containers		EmS	Stowage and handling	Segregation	Properties and observations	UN No.
	Tank instructions	Provisions					
(12)	(13) 4.2.5 4.3	(14) 4.2.5	(15) 5.4.3.2 7.8	(16a) 7.1 7.3-7.7	(16b) 7.2-7.7	(17)	(18)
-	T50	-	F-D, S-U	Category D SW2	-	-	3161
-	-	-	F-C, S-U	Category D SW2	-	-	3162
-	T50	-	F-C, S-V	Category A	-	-	3163
-	-	-	F-C, S-V	Category A	-	Articles containing non-flammable, non-toxic gas necessary for their operation.	3164
-	-	-	F-E, S-C	Category D SW2	SG5 SG8 SG13	The mixture is miscible with water and may react dangerously with oxidizing substances. The mixture is highly toxic if swallowed, by skin contact or by inhalation. Causes burns to skin, eyes and mucous membranes.	3165
-	-	-	*	Category A	-	Types of articles transported under this entry include, but are not limited to motor vehicles, hybrid vehicles, fuel cell powered vehicles, motorcycles and boats. *F-D, S-U for gases or F-E, S-E for liquids.	3166
-	-	-	F-D, S-U	Category D	-	-	3167
-	-	-	F-D, S-U	Category D	-	-	3168
-	-	-	F-C, S-U	Category D	-	-	3169
-	T3 BK2	TP33	F-G, S-P	Category B SW5 H1	SG26	Grey powder or lumps with some metallic inclusions. Contact with water may cause heating with possible evolution of flammable and toxic gases such as hydrogen and ammonia. This entry includes e.g. aluminium dross, aluminium skimmings, spent cathodes, spent potliner and aluminium salt slags.	3170
-	T1 BK2	TP33	F-G, S-P	Category B SW5 H1	SG26	See entry above.	3170
-	-	-	F-A, S-I	Category A	-	Types of articles transported under this entry include vehicles or equipment powered by wet batteries, sodium batteries or lithium batteries with the batteries installed, such as electrically-powered cars, lawnmowers, wheelchairs and other mobility aids.	3171
-	-	-	F-A, S-A	Category B	-	Toxins from plant, animal or bacterial sources which contain infectious substances or toxins that are contained in infectious substances should be classified in class 6.2. Toxic if swallowed, by skin contact or by inhalation.	3172
-	-	-	F-A, S-A	Category B	-	See entry above.	3172
-	-	-	F-A, S-A	Category A	-	See entry above.	3172
-	T1	TP33	F-A, S-J	Category A	-	Yellow or grey powder with an unpleasant odour. In contact with water slowly evolves hydrogen sulphide gas.	3174
-	T3 BK2	TP33	F-A, S-I	Category B	-	Mixtures of non-dangerous solids (such as soil, sand, production materials, etc.) and flammable liquids.	3175

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						Limited quantities	Excepted quantities	Instructions	Provisions	Instructions	Provisions
(1)	(2) 3.1.2	(3) 2.0	(4) 2.0	(5) 2.0.1.3	(6) 3.3	(7a) 3.4	(7b) 3.5	(8) 4.1.4	(9) 4.1.4	(10) 4.1.4	(11) 4.1.4
3176	FLAMMABLE SOLID, ORGANIC, MOLTEN, N.O.S.	4.1	–	II	274	0	E0	–	–	–	–
3176	FLAMMABLE SOLID, ORGANIC, MOLTEN, N.O.S.	4.1	–	III	223 274	0	E0	–	–	–	–
3178	FLAMMABLE SOLID, INORGANIC, N.O.S.	4.1	–	II	274	1 kg	E2	P002	–	IBC08	B4 B21
3178	FLAMMABLE SOLID, INORGANIC, N.O.S.	4.1	–	III	223 274	5 kg	E1	P002 LP02	–	IBC08	B3
3179	FLAMMABLE SOLID, TOXIC, INORGANIC, N.O.S.	4.1	6.1	II	274	1 kg	E2	P002	–	IBC06	B21
3179	FLAMMABLE SOLID, TOXIC, INORGANIC, N.O.S.	4.1	6.1	III	223 274	5 kg	E1	P002	–	IBC06	–
3180	FLAMMABLE SOLID, CORROSIVE, INORGANIC, N.O.S.	4.1	8	II	274	1 kg	E2	P002	–	IBC06	B21
3180	FLAMMABLE SOLID, CORROSIVE, INORGANIC, N.O.S.	4.1	8	III	223 274	5 kg	E1	P002	–	IBC06	–
3181	METAL SALTS OF ORGANIC COMPOUNDS, FLAMMABLE, N.O.S.	4.1	–	II	274	1 kg	E2	P002	PP31	IBC08	B4 B21
3181	METAL SALTS OF ORGANIC COMPOUNDS, FLAMMABLE, N.O.S.	4.1	–	III	223 274	5 kg	E1	P002 LP02	PP31	IBC08	B3
3182	METAL HYDRIDES, FLAMMABLE, N.O.S.	4.1	–	II	274	1 kg	E2	P410	PP31 PP40	IBC04	–
3182	METAL HYDRIDES, FLAMMABLE, N.O.S.	4.1	–	III	223 274	5 kg	E1	P002	PP31	IBC04	–
3183	SELF-HEATING LIQUID, ORGANIC, N.O.S.	4.2	–	II	274	0	E2	P001	PP31	IBC02	–
3183	SELF-HEATING LIQUID, ORGANIC, N.O.S.	4.2	–	III	223 274	0	E1	P001	PP31	IBC02	–
3184	SELF-HEATING LIQUID, TOXIC, ORGANIC, N.O.S.	4.2	6.1	II	274	0	E2	P402	PP31	IBC02	–
3184	SELF-HEATING LIQUID, TOXIC, ORGANIC, N.O.S.	4.2	6.1	III	223 274	0	E1	P001	PP31	IBC02	–
3185	SELF-HEATING LIQUID, CORROSIVE, ORGANIC, N.O.S.	4.2	8	II	274	0	E2	P402	PP31	IBC02	–
3185	SELF-HEATING LIQUID, CORROSIVE, ORGANIC, N.O.S.	4.2	8	III	223 274	0	E1	P001	PP31	IBC02	–
3186	SELF-HEATING LIQUID, INORGANIC, N.O.S.	4.2	–	II	274	0	E2	P001	PP31	IBC02	–
3186	SELF-HEATING LIQUID, INORGANIC, N.O.S.	4.2	–	III	223 274	0	E1	P001	PP31	IBC02	–
3187	SELF-HEATING LIQUID, TOXIC, INORGANIC, N.O.S.	4.2	6.1	II	274	0	E2	P402	PP31	IBC02	–
3187	SELF-HEATING LIQUID, TOXIC, INORGANIC, N.O.S.	4.2	6.1	III	223 274	0	E1	P001	PP31	IBC02	–
3188	SELF-HEATING LIQUID, CORROSIVE, INORGANIC, N.O.S.	4.2	8	II	274	0	E2	P402	PP31	IBC02	–
3188	SELF-HEATING LIQUID, CORROSIVE, INORGANIC, N.O.S.	4.2	8	III	223 274	0	E1	P001	PP31	IBC02	–

UN No.	Portable tanks and bulk containers		EmS	Stowage and handling	Segregation	Properties and observations	UN No.
	Tank instructions	Provisions					
(12)	(13) 4.2.5 4.3	(14) 4.2.5	(15) 5.4.3.2 7.8	(16a) 7.1 7.3–7.7	(16b) 7.2–7.7	(17)	(18)
–	T3	TP3 TP26	F-A, S-H	Category C	–	Shipped molten above its melting point.	3176
–	T1	TP3 TP26	F-A, S-H	Category C	–	See entry above.	3176
–	T3	TP33	F-A, S-G	Category B	–	–	3178
–	T1	TP33	F-A, S-G	Category B	–	–	3178
–	T3	TP33	F-A, S-G	Category B	–	Toxic if swallowed, by skin contact or by dust inhalation. Should be handled with care to minimize exposure, particularly to dust.	3179
–	T1	TP33	F-A, S-G	Category B	–	See entry above.	3179
–	T3	TP33	F-A, S-G	Category D	–	Causes burns to skin, eyes and mucous membranes.	3180
–	T1	TP33	F-A, S-G	Category D	–	See entry above.	3180
–	T3	TP33	F-A, S-I	Category B	–	Decomposes in water. Liable to spontaneous heating. Irritating to skin and mucous membranes.	3181
–	T1	TP33	F-A, S-I	Category B	–	See entry above.	3181
–	T3	TP33	F-A, S-G	Category E	–	–	3182
–	T1	TP33	F-A, S-G	Category E	–	–	3182
–	–	–	F-A, S-J	Category C	–	–	3183
–	–	–	F-A, S-J	Category C	–	–	3183
–	–	–	F-A, S-J	Category C	–	–	3184
–	–	–	F-A, S-J	Category C	–	–	3184
–	–	–	F-A, S-J	Category C	–	–	3185
–	–	–	F-A, S-J	Category C	–	–	3185
–	–	–	F-A, S-J	Category C	–	–	3186
–	–	–	F-A, S-J	Category C	–	–	3186
–	–	–	F-A, S-J	Category C	–	–	3187
–	–	–	F-A, S-J	Category C	–	–	3187
–	–	–	F-A, S-J	Category C	–	–	3188
–	–	–	F-A, S-J	Category C	–	–	3188

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UN No.	Proper shipping name (PSN)	Class or division	Subsidiary risk(s)	Packing group	Special provisions	Limited and excepted quantity provisions		Packing		IBC	
						Limited quantities	Excepted quantities	Instructions	Provisions	Instructions	Provisions
(1)	(2) 3.1.2	(3) 2.0	(4) 2.0	(5) 2.0.1.3	(6) 3.3	(7a) 3.4	(7b) 3.5	(8) 4.1.4	(9) 4.1.4	(10) 4.1.4	(11) 4.1.4
3189	METAL POWDER, SELF-HEATING, N.O.S.	4.2	–	II	274	0	E2	P410	PP31	IBC06	B21
3189	METAL POWDER, SELF-HEATING, N.O.S.	4.2	–	III	223 274	0	E1	P002 LP02	PP31 L4	IBC08	B4
3190	SELF-HEATING SOLID, INORGANIC, N.O.S.	4.2	–	II	274	0	E2	P410	PP31	IBC06	B21
3190	SELF-HEATING SOLID, INORGANIC, N.O.S.	4.2	–	III	223 274	0	E1	P002 LP02	PP31	IBC08	B3
3191	SELF-HEATING SOLID, TOXIC, INORGANIC, N.O.S.	4.2	6.1	II	274	0	E2	P410	–	IBC05	B21
3191	SELF-HEATING SOLID, TOXIC, INORGANIC, N.O.S.	4.2	6.1	III	223 274	0	E1	P002	–	IBC08	B3
3192	SELF-HEATING SOLID, CORROSIVE, INORGANIC, N.O.S.	4.2	8	II	274	0	E2	P410	–	IBC05	B21
3192	SELF-HEATING SOLID, CORROSIVE, INORGANIC, N.O.S.	4.2	8	III	274	0	E1	P002	–	IBC08	B3
3194	PYROPHORIC LIQUID, INORGANIC, N.O.S.	4.2	–	I	274	0	E0	P400	–	–	–
3200	PYROPHORIC SOLID, INORGANIC, N.O.S.	4.2	–	I	274	0	E0	P404	PP31	–	–
3205	ALKALINE EARTH METAL ALCOHOLATES, N.O.S.	4.2	–	II	183 274	0	E2	P410	PP31	IBC06	B21
3205	ALKALINE EARTH METAL ALCOHOLATES, N.O.S.	4.2	–	III	183 223 274	0	E1	P002 LP02	PP31	IBC08	B3
3206	ALKALI METAL ALCOHOLATES, SELF-HEATING, CORROSIVE, N.O.S.	4.2	8	II	182 274	0	E2	P410	PP31	IBC05	B21
3206	ALKALI METAL ALCOHOLATES, SELF-HEATING, CORROSIVE, N.O.S.	4.2	8	III	182 223 274	0	E1	P002	PP31	IBC08	B3
3208	METALLIC SUBSTANCE, WATER-REACTIVE, N.O.S.	4.3	–	I	274	0	E0	P403	PP31	IBC99	–
3208	METALLIC SUBSTANCE, WATER-REACTIVE, N.O.S.	4.3	–	II	274	500 g	E0	P410	PP31 PP40	IBC07	B4 B21
3208	METALLIC SUBSTANCE, WATER-REACTIVE, N.O.S.	4.3	–	III	223 274	1 kg	E1	P410	PP31 PP40	IBC08	B4
3209	METALLIC SUBSTANCE, WATER-REACTIVE, SELF-HEATING, N.O.S.	4.3	4.2	I	274	0	E0	P403	PP31	–	–
3209	METALLIC SUBSTANCE, WATER-REACTIVE, SELF-HEATING, N.O.S.	4.3	4.2	II	274	0	E2	P410	PP31 PP40	IBC05	B21
3209	METALLIC SUBSTANCE, WATER-REACTIVE, SELF-HEATING, N.O.S.	4.3	4.2	III	223 274	0	E1	P410	PP31	IBC08	B4

(12)	Portable tanks and bulk containers		EmS	Stowage and handling	Segregation	Properties and observations	UN No.
	Tank instructions	Provisions					
(13) 4.2.5 4.3	(14) 4.2.5	(15) 5.4.3.2 7.8	(16a) 7.1 7.3–7.7	(16b) 7.2–7.7	(17)	(18)	
–	T3	TP33	F-G, S-J	Category C H1	SG26	Forms explosive mixtures with oxidizing substances.	3189
–	T1	TP33	F-G, S-J	Category C H1	SG26	See entry above.	3189
–	T3	TP33	F-A, S-J	Category C	–	Liable to self-heating or spontaneous combustion.	3190
–	T1	TP33	F-A, S-J	Category C	–	See entry above.	3190
–	T3	TP33	F-A, S-J	Category C	–	–	3191
–	T1	TP33	F-A, S-J	Category C	–	–	3191
–	T3	TP33	F-A, S-J	Category C	–	–	3192
–	T1	TP33	F-A, S-J	Category C	–	–	3192
–	–	–	F-G, S-M	Category D H1	SG26 SG63	Highly flammable liquids, may ignite spontaneously in moist air. In contact with air, evolve irritating and slightly toxic fumes.	3194
–	T21	TP7 TP33	F-G, S-M	Category D H1	SG26	Liable to ignite spontaneously in air. If shaken, may produce sparks. In contact with water, evolve hydrogen, a flammable gas.	3200
–	T3	TP33	F-A, S-J	Category B	–	Free-flowing hygroscopic powders. Irritating to skin, eyes and mucous membranes.	3205
–	T1	TP33	F-A, S-J	Category B	–	See entry above.	3205
–	T3	TP33	F-A, S-J	Category B	–	Free-flowing hygroscopic powder. Cause burns to skin, eyes and mucous membranes.	3206
–	T1	TP33	F-A, S-J	Category B	–	See entry above.	3206
–	–	–	F-G, S-N	Category E SW2 H1	SG26	–	3208
–	T3	TP33	F-G, S-N	Category E SW2 H1	SG26	–	3208
–	T1	TP33	F-G, S-N	Category E SW2 H1	SG26	–	3208
–	–	–	F-G, S-N	Category E SW2 H1	SG26	–	3209
–	T3	TP33	F-G, S-N	Category E SW2 H1	SG26	–	3209
–	T1	TP33	F-G, S-N	Category E SW2 H1	SG26	–	3209

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UN No.	Proper shipping name (PSN)	Class or division	Subsidiary risk(s)	Packing group	Special provisions	Limited and excepted quantity provisions		Packing		IBC	
						Limited quantities	Excepted quantities	Instructions	Provisions	Instructions	Provisions
(1)	(2) 3.1.2	(3) 2.0	(4) 2.0	(5) 2.0.1.3	(6) 3.3	(7a) 3.4	(7b) 3.5	(8) 4.1.4	(9) 4.1.4	(10) 4.1.4	(11) 4.1.4
3210	CHLORATES, INORGANIC, AQUEOUS SOLUTION, N.O.S.	5.1	–	II	274 351	1 L	E2	P504	–	IBC02	–
3210	CHLORATES, INORGANIC, AQUEOUS SOLUTION, N.O.S.	5.1	–	III	223 274 351	5 L	E1	P504	–	IBC02	–
3211	PERCHLORATES, INORGANIC, AQUEOUS SOLUTION, N.O.S.	5.1	–	II	–	1 L	E2	P504	–	IBC02	–
3211	PERCHLORATES, INORGANIC, AQUEOUS SOLUTION, N.O.S.	5.1	–	III	223	5 L	E1	P504	–	IBC02	–
3212	HYPOCHLORITES, INORGANIC, N.O.S.	5.1	–	II	274 349 900 903	1 kg	E2	P002	–	IBC08	B4 B21
3213	BROMATES, INORGANIC, AQUEOUS SOLUTION, N.O.S.	5.1	–	II	274 350	1 L	E2	P504	–	IBC02	–
3213	BROMATES, INORGANIC, AQUEOUS SOLUTION, N.O.S.	5.1	–	III	223 274 350	5 L	E1	P504	–	IBC02	–
3214	PERMANGANATES, INORGANIC, AQUEOUS SOLUTION, N.O.S.	5.1	–	II	274 353	1 L	E2	P504	–	IBC02	–
3215	PERSULPHATES, INORGANIC, N.O.S.	5.1	–	III	–	5 kg	E1	P002 LP02	–	IBC08	B3

(12)	Portable tanks and bulk containers		EmS	Stowage and handling	Segregation	Properties and observations	UN No.
	Tank instructions	Provisions					
(13) 4.2.5 4.3	(14) 4.2.5	(15) 5.4.3.2 7.8	(16a) 7.1 7.3–7.7	(16b) 7.2–7.7	(17)	(18)	
–	T4	TP1	F-H, S-Q	Category B	SG38 SG49 SG62	When involved in a fire, may cause an explosion. Leakage and subsequent evaporation of the water of the solutions may present increased dangers as follows: .1 in contact with combustible material (particularly with fibrous material such as jute, cotton or sisal) or sulphur, danger of spontaneous combustion; .2 in contact with ammonium compounds, powdered metals or oils, danger of explosion. Transport of ammonium chlorate, aqueous solution is prohibited .	3210
–	T4	TP1	F-H, S-Q	Category B	SG38 SG49 SG62	See entry above.	3210
–	T4	TP1	F-H, S-Q	Category B	SG38 SG49 SG62	When involved in a fire, may cause an explosion. Leakage and subsequent evaporation of the water of the solutions may present increased dangers as follows: .1 in contact with combustible material (particularly with fibrous material such as jute, cotton or sisal) or sulphur, danger of spontaneous combustion; .2 in contact with ammonium compounds, powdered metals or oils, danger of explosion.	3211
–	T4	TP1	F-H, S-Q	Category B	SG38 SG49 SG62	See entry above.	3211
–	T3	TP33	F-H, S-Q	Category D SW1 SW17	SG35 SG38 SG49 SG53 SG60	Solids. Critical ambient temperature of decomposition may be as low as 60°C. May cause fire in contact with organic material or ammonium compounds. React with acids, evolving chlorine, an irritating, corrosive and toxic gas. In the presence of moisture, corrosive to most metals. Dust irritates mucous membranes. Transport of ammonium hypochlorite and mixtures of a hypochlorite with an ammonium salt is prohibited .	3212
–	T4	TP1	F-H, S-Q	Category B	SG38 SG49 SG62	When involved in a fire, may cause an explosion. Leakage and subsequent evaporation of the water of the solutions may present increased dangers as follows: .1 in contact with combustible material (particularly with fibrous material such as jute, cotton or sisal) or sulphur, danger of spontaneous combustion; .2 in contact with ammonium compounds, powdered metals or oils, danger of explosion. Transport of ammonium bromate, aqueous solution is prohibited .	3213
–	T4	TP1	F-H, S-Q	Category B	SG38 SG49 SG62	See entry above.	3213
–	T4	TP1	F-H, S-Q	Category D	SG38 SG49 SG60 SG62	When involved in a fire, may cause an explosion. Leakage and subsequent evaporation of the water of the solutions may present increased dangers as follows: .1 in contact with combustible material (particularly with fibrous material such as jute, cotton or sisal) or sulphur, danger of spontaneous combustion; .2 in contact with ammonium compounds, powdered metals or oils, danger of explosion. Transport of ammonium permanganate, aqueous solution is prohibited .	3214
–	T1	TP33	F-A, S-Q	Category A	SG40 SG49	Solids. Solid mixtures with combustible material are sensitive to friction and are liable to ignite. React fiercely with cyanides when heated or by friction. May form explosive mixture with powdered metals or ammonium compounds.	3215

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						Limited quantities	Excepted quantities	Instructions	Provisions	Instructions	Provisions
(1)	(2) 3.1.2	(3) 2.0	(4) 2.0	(5) 2.0.1.3	(6) 3.3	(7a) 3.4	(7b) 3.5	(8) 4.1.4	(9) 4.1.4	(10) 4.1.4	(11) 4.1.4
3216	PERSULPHATES, INORGANIC, AQUEOUS SOLUTION, N.O.S.	5.1	–	III	–	5 L	E1	P504	–	IBC02	–
3218	NITRATES, INORGANIC, AQUEOUS SOLUTION, N.O.S.	5.1	–	II	270	1 L	E2	P504	–	IBC02	–
3218	NITRATES, INORGANIC, AQUEOUS SOLUTION, N.O.S.	5.1	–	III	223 270	5 L	E1	P504	–	IBC02	–
3219	NITRITES, INORGANIC, AQUEOUS SOLUTION, N.O.S.	5.1	–	II	274	1 L	E2	P504	–	IBC01	–
3219	NITRITES, INORGANIC, AQUEOUS SOLUTION, N.O.S.	5.1	–	III	223 274 900	5 L	E1	P504	–	IBC02	–
3220	PENTAFLUOROETHANE (REFRIGERANT GAS R 125)	2.2	–	–	–	120 mL	E1	P200	–	–	–
3221	SELF-REACTIVE LIQUID TYPE B	4.1	See SP181	–	181 274	25 mL	E0	P520	PP21	–	–
3222	SELF-REACTIVE SOLID TYPE B	4.1	See SP181	–	181 274	100 g	E0	P520	PP21	–	–
3223	SELF-REACTIVE LIQUID TYPE C	4.1	–	–	274	25 mL	E0	P520	PP21	–	–
3224	SELF-REACTIVE SOLID TYPE C	4.1	–	–	274	100 g	E0	P520	PP21	–	–
3225	SELF-REACTIVE LIQUID TYPE D	4.1	–	–	274	125 mL	E0	P520	–	–	–

(12)	Portable tanks and bulk containers		EmS	Stowage and handling	Segregation	Properties and observations	UN No.
	Tank instructions	Provisions					
(13) 4.2.5 4.3	(14) 4.2.5	(15) 5.4.3.2 7.8	(16a) 7.1 7.3–7.7	(16b) 7.2–7.7	(17)	(18)	
–	T4	TP1 TP29	F-A, S-Q	Category A	SG38 SG49 SG62	When involved in a fire, may cause an explosion. Leakage and subsequent evaporation of the water of the solutions may present increased dangers as follows: .1 in contact with combustible material (particularly with fibrous material such as jute, cotton or sisal) or sulphur, danger of spontaneous combustion; .2 in contact with ammonium compounds, powdered metals or oils, danger of explosion.	3216
–	T4	TP1	F-A, S-Q	Category B	SG38 SG49 SG62	When involved in a fire, may cause an explosion. Leakage and subsequent evaporation of the water of the solutions may present increased dangers as follows: .1 in contact with combustible material (particularly with fibrous material such as jute, cotton or sisal) or sulphur, danger of spontaneous combustion; .2 in contact with ammonium compounds, powdered metals or oils, danger of explosion.	3218
–	T4	TP1	F-A, S-Q	Category B	SG38 SG49 SG62	See entry above.	3218
–	T4	TP1	F-A, S-Q	Category B	SG38 SG49 SG62	When involved in a fire, may cause an explosion. Leakage and subsequent evaporation of the water of the solutions may present increased dangers as follows: .1 in contact with combustible material (particularly with fibrous material such as jute, cotton or sisal) or sulphur, danger of spontaneous combustion; .2 in contact with ammonium compounds, powdered metals or oils, danger of explosion. Transport of ammonium nitrites, aqueous solution is prohibited .	3219
–	T4	TP1	F-A, S-Q	Category B	SG38 SG49 SG62	See entry above.	3219
–	T50	–	F-C, S-V	Category A	–	Liquefied, non-flammable gas with a mild ether-like odour. Much heavier than air (4.2).	3220
–	–	–	F-J, S-G	Category D SW1	SG1 SG35 SG36	May explode at elevated temperatures or in a fire. Burns vigorously. Immiscible with water. Contact with alkalis or acids may cause dangerous decomposition. The products of combustion or self-accelerating decomposition may be toxic by inhalation.	3221
–	–	–	F-J, S-G	Category D SW1	SG1 SG35 SG36	May explode at elevated temperatures or in a fire. Burns vigorously. Insoluble in water. Contact with alkalis or acids may cause dangerous decomposition. The products of combustion or self-accelerating decomposition may be toxic by inhalation.	3222
–	–	–	F-J, S-G	Category D SW1	SG35 SG36	May decompose violently at elevated temperatures or in a fire. Burns vigorously. Immiscible with water. Contact with alkalis or acids may cause dangerous decomposition. The products of combustion or self-accelerating decomposition may be toxic by inhalation.	3223
–	–	–	F-J, S-G	Category D SW1	SG35 SG36	May decompose violently at elevated temperatures or in a fire. Burns vigorously. Insoluble in water. Contact with alkalis or acids may cause dangerous decomposition. The products of combustion or self-accelerating decomposition may be toxic by inhalation.	3224
–	–	–	F-J, S-G	Category D SW1	SG35 SG36	Decomposes at elevated temperatures or in a fire. Burns vigorously. Immiscible with water. Contact with alkalis or acids may cause dangerous decomposition. The products of combustion or self-accelerating decomposition may be toxic by inhalation.	3225

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UN No.	Proper shipping name (PSN)	Class or division	Subsidiary risk(s)	Packing group	Special provisions	Limited and excepted quantity provisions		Packing		IBC	
						Limited quantities	Excepted quantities	Instructions	Provisions	Instructions	Provisions
(1)	(2) 3.1.2	(3) 2.0	(4) 2.0	(5) 2.0.1.3	(6) 3.3	(7a) 3.4	(7b) 3.5	(8) 4.1.4	(9) 4.1.4	(10) 4.1.4	(11) 4.1.4
3226	SELF-REACTIVE SOLID TYPE D	4.1	-	-	274	500 g	E0	P520	-	-	-
3227	SELF-REACTIVE LIQUID TYPE E	4.1	-	-	274	125 mL	E0	P520	-	-	-
3228	SELF-REACTIVE SOLID TYPE E	4.1	-	-	274	500 g	E0	P520	-	-	-
3229	SELF-REACTIVE LIQUID TYPE F	4.1	-	-	274	125 mL	E0	P520	-	IBC99	-
3230	SELF-REACTIVE SOLID TYPE F	4.1	-	-	274	500 g	E0	P520	-	IBC99	-
3231	SELF-REACTIVE LIQUID TYPE B, TEMPERATURE CONTROLLED	4.1	See SP181	-	181 194 274 923	0	E0	P520	PP21	-	-
3232	SELF-REACTIVE SOLID TYPE B, TEMPERATURE CONTROLLED	4.1	See SP181	-	181 194 274 923	0	E0	P520	PP21	-	-
3233	SELF-REACTIVE LIQUID TYPE C, TEMPERATURE CONTROLLED	4.1	-	-	194 274 923	0	E0	P520	PP21	-	-
3234	SELF-REACTIVE SOLID TYPE C, TEMPERATURE CONTROLLED	4.1	-	-	194 274 923	0	E0	P520	PP21	-	-

UN No.	Portable tanks and bulk containers		EmS	Stowage and handling	Segregation	Properties and observations	UN No.
	Tank instructions	Provisions					
(12)	(13) 4.2.5 4.3	(14) 4.2.5	(15) 5.4.3.2 7.8	(16a) 7.1 7.3-7.7	(16b) 7.2-7.7	(17)	(18)
-	-	-	F-J, S-G	Category D SW1	SG35 SG36	Decomposes at elevated temperatures or in a fire. Burns vigorously. Contact with alkalis or acids may cause dangerous decomposition. The products of combustion or self-accelerating decomposition may be toxic by inhalation. Insoluble in water except: 4-(BENZYL(ETHYL)AMINO)-3-ETHOXYBENZENEDIAZONIUM ZINC CHLORIDE 3-CHLORO-4-DIETHYLAMINOBENZENEDIAZONIUM ZINC CHLORIDE 4-DIPROPYLAMINOBENZENEDIAZONIUM ZINC CHLORIDE SODIUM 2-DIAZO-1-NAPHTHOL-4-SULPHONATE SODIUM 2-DIAZO-1-NAPHTHOL-5-SULPHONATE	3226
-	-	-	F-J, S-G	Category D SW1	SG35 SG36	Decomposes at elevated temperatures or in a fire. Burns vigorously. Immiscible with water. Contact with alkalis or acids may cause dangerous decomposition. The products of combustion or self-accelerating decomposition may be toxic by inhalation.	3227
-	-	-	F-J, S-G	Category D SW1	SG35 SG36	Decomposes at elevated temperatures or in a fire. Burns vigorously. Insoluble in water. Contact with alkalis or acids may cause dangerous decomposition. The products of combustion or self-accelerating decomposition may be toxic by inhalation.	3228
-	T23	-	F-J, S-G	Category D SW1	SG35 SG36	Decomposes at elevated temperatures or in a fire. Burns vigorously. Immiscible with water. Contact with alkalis or acids may cause dangerous decomposition. The products of combustion or self-accelerating decomposition may be toxic by inhalation.	3229
-	T23	-	F-J, S-G	Category D SW1	SG35 SG36	Decomposes at elevated temperatures or in a fire. Burns vigorously. Insoluble in water. Contact with alkalis or acids may cause dangerous decomposition. The products of combustion or self-accelerating decomposition may be toxic by inhalation.	3230
-	-	-	F-F, S-K	Category D SW1 SW3	SG1 SG35 SG36	May explode at temperatures higher than the emergency temperature or in a fire. Burns vigorously. Immiscible with water. Contact with alkalis or acids may cause dangerous decomposition. The products of combustion or self-accelerating decomposition may be toxic by inhalation. Control and emergency temperatures for each formulation can be found in 2.4.2.3.2.3. The temperature should be checked regularly.	3231
-	-	-	F-F, S-K	Category D SW1 SW3	SG1 SG35 SG36	May explode at temperatures higher than the emergency temperature or in a fire. Burns vigorously. Insoluble in water. Contact with alkalis or acids may cause dangerous decomposition. The products of combustion or self-accelerating decomposition may be toxic by inhalation. Control and emergency temperatures for each formulation can be found in 2.4.2.3.2.3. The temperature should be checked regularly.	3232
-	-	-	F-F, S-K	Category D SW1 SW3	SG35 SG36	May explode at temperatures higher than the emergency temperature or in a fire. Burns vigorously. Immiscible with water. Contact with alkalis or acids may cause dangerous decomposition. The products of combustion or self-accelerating decomposition may be toxic by inhalation. Control and emergency temperatures for each formulation can be found in 2.4.2.3.2.3. The temperature should be checked regularly.	3233
-	-	-	F-F, S-K	Category D SW1 SW3	SG35 SG36	May explode at temperatures higher than the emergency temperature or in a fire. Burns vigorously. Insoluble in water except: 3-METHYL-4-(PYRROLIDIN-1-YL)BENZENEDIAZONIUM TETRAFLUOROBORATE TETRAMINEPALLADIUM(II) NITRATE Contact with alkalis or acids may cause dangerous decomposition. The products of combustion or self-accelerating decomposition may be toxic by inhalation. Control and emergency temperatures for each formulation can be found in 2.4.2.3.2.3. The temperature should be checked regularly.	3234

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UN No.	Proper shipping name (PSN)	Class or division	Subsidiary risk(s)	Packing group	Special provisions	Limited and excepted quantity provisions		Packing		IBC	
						Limited quantities	Excepted quantities	Instructions	Provisions	Instructions	Provisions
(1)	(2) 3.1.2	(3) 2.0	(4) 2.0	(5) 2.0.1.3	(6) 3.3	(7a) 3.4	(7b) 3.5	(8) 4.1.4	(9) 4.1.4	(10) 4.1.4	(11) 4.1.4
3235	SELF-REACTIVE LIQUID TYPE D, TEMPERATURE CONTROLLED	4.1	–	–	194 274 923	0	E0	P520	–	–	–
3236	SELF-REACTIVE SOLID TYPE D, TEMPERATURE CONTROLLED	4.1	–	–	194 274 923	0	E0	P520	–	–	–
3237	SELF-REACTIVE LIQUID TYPE E, TEMPERATURE CONTROLLED	4.1	–	–	194 274 923	0	E0	P520	–	–	–
3238	SELF-REACTIVE SOLID TYPE E, TEMPERATURE CONTROLLED	4.1	–	–	194 274 923	0	E0	P520	–	–	–
3239	SELF-REACTIVE LIQUID TYPE F, TEMPERATURE CONTROLLED	4.1	–	–	194 274 923	0	E0	P520	–	–	–
3240	SELF-REACTIVE SOLID TYPE F, TEMPERATURE CONTROLLED	4.1	–	–	194 274 923	0	E0	P520	–	–	–
3241	2-BROMO-2-NITROPROPANE-1,3-DIOL	4.1	–	III	–	5 kg	E1	P520	PP22	IBC08	B3
3242	AZODICARBONAMIDE	4.1	–	II	215	500 g	E0	P409	–	–	–
3243	SOLIDS CONTAINING TOXIC LIQUID, N.O.S.	6.1	–	II	217 274	500 g	E4	P002	PP9	IBC02	–

UN No.	Portable tanks and bulk containers		EmS	Stowage and handling	Segregation	Properties and observations	UN No.
	Tank instructions	Provisions					
(12)	(13) 4.2.5 4.3	(14) 4.2.5	(15) 5.4.3.2 7.8	(16a) 7.1 7.3–7.7	(16b) 7.2–7.7	(17)	(18)
–	–	–	F-F, S-K	Category D SW1 SW3	SG35 SG36	Decomposes at temperatures higher than the emergency temperature or in a fire. Burns vigorously. Immiscible with water. Contact with alkalis or acids may cause dangerous decomposition. The products of combustion or self-accelerating decomposition may be toxic by inhalation.	3235
–	–	–	F-F, S-K	Category D SW1 SW3	SG35 SG36	Decomposes at temperatures higher than the emergency temperature or in a fire. Burns vigorously. Soluble in water except: AZODICARBONAMIDE FORMULATION TYPE D 2,2'-AZODI(2,4-DIMETHYL-4-METHOXYVALERONITRILE) 2,2'-AZODI(2,4-DIMETHYLVALERONITRILE) 2,2'-AZODI(2-METHYLBUTYRONITRILE) N-FORMYL-2-(NITROMETHYLENE)-1,3-PERHYDROTHIAZINE 4-NITROSOPHENOL Contact with alkalis or acids may cause dangerous decomposition. The products of combustion or self-accelerating decomposition may be toxic by inhalation.	3236
–	–	–	F-F, S-K	Category D SW1 SW3	SG35 SG36	Decomposes at temperatures higher than the emergency temperature or in a fire. Burns vigorously. Immiscible with water. Contact with alkalis or acids may cause dangerous decomposition. The products of combustion or self-accelerating decomposition may be toxic by inhalation. Control and emergency temperatures for each formulation can be found in 2.4.2.3.2.3. The temperature should be checked regularly.	3237
–	–	–	F-F, S-K	Category D SW1 SW3	SG35 SG36	Decomposes at temperatures higher than the emergency temperature or in a fire. Burns vigorously. Insoluble in water. Contact with alkalis or acids may cause dangerous decomposition. The products of combustion or self-accelerating decomposition may be toxic by inhalation. Control and emergency temperatures for each formulation can be found in 2.4.2.3.2.3. The temperature should be checked regularly.	3238
–	T23	–	F-F, S-K	Category D SW1 SW3	SG35 SG36	Decomposes at temperatures higher than the emergency temperature or in a fire. Burns vigorously. Immiscible with water. Contact with alkalis or acids may cause dangerous decomposition. The products of combustion or self-accelerating decomposition may be toxic by inhalation. Control and emergency temperatures for each formulation can be found in 2.4.2.3.2.3. The temperature must be checked regularly.	3239
–	T23	–	F-F, S-K	Category D SW1 SW3	SG35 SG36	Decomposes at temperatures higher than the emergency temperature or in a fire. Burns vigorously. Insoluble in water. Contact with alkalis or acids may cause dangerous decomposition. The products of combustion or self-accelerating decomposition may be toxic by inhalation. Control and emergency temperatures for each formulation can be found in 2.4.2.3.2.3. The temperature must be checked regularly.	3240
–	–	–	F-J, S-G	Category C SW1 SW2 H2 H3	–	White crystals. Soluble in water. Decomposes when heated, evolving toxic gases. Sensitive to strong detonation shock. This substance shall be packed in accordance with packing method OP6 (see applicable packing instruction).	3241
–	T3	TP33	F-J, S-G	Category D	SG17 SG35 SG36	Yellow or orange powder. Insoluble in water. Heat may cause exothermic decomposition, producing carbon monoxide (a toxic and flammable gas) and nitrogen. May explode if involved in a fire under confined conditions. Addition of activators (e.g. zinc compounds) may result in a decrease of thermal stability and/or a change in explosive properties.	3242
–	T3 BK2	TP33	F-A, S-A	Category B SW2	–	Mixtures of non-dangerous solids (such as soil, sand, production materials, etc.) and toxic liquids. Toxic if swallowed, by skin contact or by inhalation.	3243

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UN No.	Proper shipping name (PSN)	Class or division	Subsidiary risk(s)	Packing group	Special provisions	Limited and excepted quantity provisions		Packing		IBC	
						Limited quantities	Excepted quantities	Instructions	Provisions	Instructions	Provisions
(1)	(2) 3.1.2	(3) 2.0	(4) 2.0	(5) 2.0.1.3	(6) 3.3	(7a) 3.4	(7b) 3.5	(8) 4.1.4	(9) 4.1.4	(10) 4.1.4	(11) 4.1.4
3244	SOLIDS CONTAINING CORROSIVE LIQUID, N.O.S.	8	–	II	218 274	1 kg	E2	P002	PP9	IBC05	–
3245	GENETICALLY MODIFIED MICROORGANISMS or GENETICALLY MODIFIED ORGANISMS	9	–	–	219	0	E0	P904	–	IBC99	–
3246	METHANESULPHONYL CHLORIDE	6.1	8	I	354	0	E0	P602	–	–	–
3247	SODIUM PEROXOBORATE, ANHYDROUS	5.1	–	II	–	1 kg	E2	P002	–	IBC08	B4 B21
3248	MEDICINE, LIQUID, FLAMMABLE, TOXIC, N.O.S.	3	6.1	II	220 221	1 L	E2	P001	–	–	–
3248	MEDICINE, LIQUID, FLAMMABLE, TOXIC, N.O.S.	3	6.1	III	220 221 223	5 L	E1	P001	–	–	–
3249	MEDICINE, SOLID, TOXIC, N.O.S.	6.1	–	II	221	500 g	E4	P002	–	–	–
3249	MEDICINE, SOLID, TOXIC, N.O.S.	6.1	–	III	221 223	5 kg	E1	P002 LP02	–	–	–
3250	CHLOROACETIC ACID, MOLTEN	6.1	8	II	–	0	E0	–	–	–	–
3251	ISOSORBIDE-5-MONONITRATE	4.1	–	III	226	5 kg	E0	P409	–	–	–
3252	DIFLUOROMETHANE (REFRIGERANT GAS R 32)	2.1	–	–	–	0	E0	P200	–	–	–
3253	DISODIUM TRIOXOSILICATE	8	–	III	–	5 kg	E1	P002 LP02	–	IBC08	B3
3254	TRIBUTYLPHOSPHANE	4.2	–	I	–	0	E0	P400	–	–	–
3255	tert-BUTYL HYPOCHLORITE	4.2	8	I	76	0	E0	P099	–	–	–
3256	ELEVATED TEMPERATURE LIQUID, FLAMMABLE, N.O.S. with flashpoint above 60°C, at or above its flashpoint	3	–	III	274	0	E0	P099	–	IBC01	–
3257	ELEVATED TEMPERATURE LIQUID, N.O.S. at or above 100°C and below its flashpoint (including molten metals, molten salts, etc.)	9	–	III	232 274	0	E0	P099	–	IBC01	–

UN No.	Portable tanks and bulk containers		EmS	Stowage and handling	Segregation	Properties and observations	UN No.
	Tank instructions	Provisions					
(12)	(13) 4.2.5 4.3	(14) 4.2.5	(15) 5.4.3.2 7.8	(16a) 7.1 7.3–7.7	(16b) 7.2–7.7	(17)	(18)
–	T3 BK2	TP33	F-A, S-B	Category B SW2	–	Mixtures of non-dangerous solids (such as soil, sand, production materials, etc.) and corrosive liquids. Cause burns to skin, eyes and mucous membranes.	3244
–	–	–	F-A, S-T	SW7	SG50	–	3245
–	T20	TP2 TP13 TP37	F-A, S-B	Category D SW2	–	Pale yellow liquid. Highly toxic if swallowed, by skin contact or by inhalation. Causes burns to skin, eyes and mucous membranes.	3246
–	T3	TP33	F-A, S-Q	Category A SW1 H1	–	Yellowish, odourless crystals. Soluble in water. Mixtures with combustible material are readily ignited and may burn fiercely. Harmful if swallowed.	3247
–	–	–	F-E, S-D	Category B SW2	–	Toxic if swallowed, by skin contact or by inhalation.	3248
–	–	–	F-E, S-D	Category A	–	Toxic if swallowed, by skin contact or by inhalation.	3248
–	T3	TP33	F-A, S-A	Category C SW2	–	Toxic if swallowed, by skin contact or by dust inhalation.	3249
–	T1	TP33	F-A, S-A	Category C SW2	–	See entry above.	3249
–	T7	TP3 TP28	F-A, S-B	Category C SW2	–	Molten liquid. Melting point may be as low as 50°C. Toxic if swallowed, by skin contact or by inhalation. Causes burns to skin, eyes and mucous membranes.	3250
–	–	–	F-F, S-G	Category D SW1 SW2 H2 H3	–	May explode if involved in a fire under confined conditions. Sensitive to strong detonation shock.	3251
–	T50	–	F-D, S-U	Category D SW2	–	Flammable colourless gas. Heavier than air (1.8).	3252
–	T1	TP33	F-A, S-B	Category A	SG35	Colourless hygroscopic solid. Dangerous reaction with oxidizers. In the presence of moisture, reacts with aluminium, zinc, tin and their compounds, evolving hydrogen, a flammable gas. Causes burns to skin, eyes and mucous membranes. Reacts violently with acids.	3253
–	T21	TP2 TP7	F-A, S-M	Category D	SG44	Colourless yellowish liquid. Insoluble in water. Strong garlic odour (phosphine). Liable to heat and ignite spontaneously in air. If involved in a fire, evolves phosphine, a flammable and highly toxic gas. Reacts violently with oxidizing substances (peroxides, halogens, nitric oxides and carbon tetrachloride). Irritating to mucous membranes.	3254
–	–	–	F-A, S-M	Category D	–	Volatile flammable slightly yellow liquid with a pungent odour. Immiscible with water. Boiling point: 77°C to 79°C. Flashpoint between –15°C and –10°C. Exposure to light causes immediate dangerous decomposition. Causes burns to skin, eyes and mucous membranes.	3255
–	T3	TP3 TP29	F-E, S-D	Category A	–	–	3256
–	T3	TP3 TP29	F-A, S-P	Category A SW5	–	Any liquid which is transported at or above 100°C but below its flashpoint. May cause fire if in contact with combustible material due to extreme temperature.	3257

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						Limited quantities	Excepted quantities	Instructions	Provisions	Instructions	Provisions
(1)	(2) 3.1.2	(3) 2.0	(4) 2.0	(5) 2.0.1.3	(6) 3.3	(7a) 3.4	(7b) 3.5	(8) 4.1.4	(9) 4.1.4	(10) 4.1.4	(11) 4.1.4
3258	ELEVATED TEMPERATURE SOLID, N.O.S. at or above 240°C	9	–	III	232 274	0	E0	P099	–	–	–
3259	AMINES, SOLID, CORROSIVE, N.O.S. or POLYAMINES, SOLID, CORROSIVE, N.O.S.	8	–	I	274	0	E0	P002	–	IBC07	B1
3259	AMINES, SOLID, CORROSIVE, N.O.S. or POLYAMINES, SOLID, CORROSIVE, N.O.S.	8	–	II	274	1 kg	E2	P002	–	IBC08	B4 B21
3259	AMINES, SOLID, CORROSIVE, N.O.S. or POLYAMINES, SOLID, CORROSIVE, N.O.S.	8	–	III	223 274	5 kg	E1	P002 LP02	–	IBC08	B3
3260	CORROSIVE SOLID, ACIDIC, INORGANIC, N.O.S.	8	–	I	274	0	E0	P002	–	IBC07	B1
3260	CORROSIVE SOLID, ACIDIC, INORGANIC, N.O.S.	8	–	II	274	1 kg	E2	P002	–	IBC08	B4 B21
3260	CORROSIVE SOLID, ACIDIC, INORGANIC, N.O.S.	8	–	III	223 274	5 kg	E1	P002 LP02	–	IBC08	B3
3261	CORROSIVE SOLID, ACIDIC, ORGANIC, N.O.S.	8	–	I	274	0	E0	P002	–	IBC07	B1
3261	CORROSIVE SOLID, ACIDIC, ORGANIC, N.O.S.	8	–	II	274	1 kg	E2	P002	–	IBC08	B4 B21
3261	CORROSIVE SOLID, ACIDIC, ORGANIC, N.O.S.	8	–	III	223 274	5 kg	E1	P002 LP02	–	IBC08	B3
3262	CORROSIVE SOLID, BASIC, INORGANIC, N.O.S.	8	–	I	274	0	E0	P002	–	IBC07	B1
3262	CORROSIVE SOLID, BASIC, INORGANIC, N.O.S.	8	–	II	274	1 kg	E2	P002	–	IBC08	B4 B21
3262	CORROSIVE SOLID, BASIC, INORGANIC, N.O.S.	8	–	III	223 274	5 kg	E1	P002 LP02	–	IBC08	B3
3263	CORROSIVE SOLID, BASIC, ORGANIC, N.O.S.	8	–	I	274	0	E0	P002	–	IBC07	B1
3263	CORROSIVE SOLID, BASIC, ORGANIC, N.O.S.	8	–	II	274	1 kg	E2	P002	–	IBC08	B4 B21
3263	CORROSIVE SOLID, BASIC, ORGANIC, N.O.S.	8	–	III	223 274	5 kg	E1	P002 LP02	–	IBC08	B3
3264	CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S.	8	–	I	274	0	E0	P001	–	–	–
3264	CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S.	8	–	II	274	1 L	E2	P001	–	IBC02	–
3264	CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S.	8	–	III	223 274	5 L	E1	P001 LP01	–	IBC03	–
3265	CORROSIVE LIQUID, ACIDIC, ORGANIC, N.O.S.	8	–	I	274	0	E0	P001	–	–	–
3265	CORROSIVE LIQUID, ACIDIC, ORGANIC, N.O.S.	8	–	II	274	1 L	E2	P001	–	IBC02	–
3265	CORROSIVE LIQUID, ACIDIC, ORGANIC, N.O.S.	8	–	III	223 274	5 L	E1	P001 LP01	–	IBC03	–
3266	CORROSIVE LIQUID, BASIC, INORGANIC, N.O.S.	8	–	I	274	0	E0	P001	–	–	–
3266	CORROSIVE LIQUID, BASIC, INORGANIC, N.O.S.	8	–	II	274	1 L	E2	P001	–	IBC02	–

(12)	Portable tanks and bulk containers		EmS	Stowage and handling	Segregation	Properties and observations	UN No.
	Tank instructions	Provisions					
(13) 4.2.5 4.3	(14) 4.2.5	(15) 5.4.3.2 7.8	(16a) 7.1 7.3–7.7	(16b) 7.2–7.7	(17)	(18)	
–	–	–	F-A, S-P	Category A SW5	–	Any solid which is transported at or above 240°C. May cause fire if in contact with combustible material due to extreme temperature.	3258
–	T6	TP33	F-A, S-B	Category A	SG35	Colourless to yellowish solids with a pungent odour. Miscible with or soluble in water. When involved in a fire, evolve toxic gases. Corrosive to most metals, especially to copper and its alloys. Cause burns to skin, eyes and mucous membranes. React violently with acids.	3259
–	T3	TP33	F-A, S-B	Category A	SG35	See entry above.	3259
–	T1	TP33	F-A, S-B	Category A	SG35	See entry above.	3259
–	T6	TP33	F-A, S-B	Category B	–	Causes burns to skin, eyes and mucous membranes.	3260
–	T3	TP33	F-A, S-B	Category B	–	See entry above.	3260
–	T1	TP33	F-A, S-B	Category A	–	Causes burns to skin, eyes and mucous membranes.	3260
–	T6	TP33	F-A, S-B	Category B	–	Causes burns to skin, eyes and mucous membranes.	3261
–	T3	TP33	F-A, S-B	Category B	–	See entry above.	3261
–	T1	TP33	F-A, S-B	Category A	–	See entry above.	3261
–	T6	TP33	F-A, S-B	Category B	SG35	Reacts violently with acids. Causes burns to skin, eyes and mucous membranes.	3262
–	T3	TP33	F-A, S-B	Category B	SG35	See entry above.	3262
–	T1	TP33	F-A, S-B	Category A	SG35	See entry above.	3262
–	T6	TP33	F-A, S-B	Category B	SG35	Reacts violently with acids. Causes burns to skin, eyes and mucous membranes.	3263
–	T3	TP33	F-A, S-B	Category B	SG35	See entry above.	3263
–	T1	TP33	F-A, S-B	Category A	SG35	See entry above.	3263
–	T14	TP2 TP27	F-A, S-B	Category B SW2	–	Causes burns to skin, eyes and mucous membranes.	3264
–	T11	TP2 TP27	F-A, S-B	Category B SW2	–	See entry above.	3264
–	T7	TP1 TP28	F-A, S-B	Category A SW2	–	See entry above.	3264
–	T14	TP2 TP27	F-A, S-B	Category B SW2	–	Causes burns to skin, eyes and mucous membranes.	3265
–	T11	TP2 TP27	F-A, S-B	Category B SW2	–	See entry above.	3265
–	T7	TP1 TP28	F-A, S-B	Category A SW2	–	See entry above.	3265
–	T14	TP2 TP27	F-A, S-B	Category B SW2	SG35	Reacts violently with acids. Causes burns to skin, eyes and mucous membranes.	3266
–	T11	TP2 TP27	F-A, S-B	Category B SW2	SG35	See entry above.	3266

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						Limited quantities	Excepted quantities	Instructions	Provisions	Instructions	Provisions
(1)	(2) 3.1.2	(3) 2.0	(4) 2.0	(5) 2.0.1.3	(6) 3.3	(7a) 3.4	(7b) 3.5	(8) 4.1.4	(9) 4.1.4	(10) 4.1.4	(11) 4.1.4
3266	CORROSIVE LIQUID, BASIC, INORGANIC, N.O.S.	8	-	III	223 274	5 L	E1	P001 LP01	-	IBC03	-
3267	CORROSIVE LIQUID, BASIC, ORGANIC, N.O.S.	8	-	I	274	0	E0	P001	-	-	-
3267	CORROSIVE LIQUID, BASIC, ORGANIC, N.O.S.	8	-	II	274	1 L	E2	P001	-	IBC02	-
3267	CORROSIVE LIQUID, BASIC, ORGANIC, N.O.S.	8	-	III	223 274	5 L	E1	P001 LP01	-	IBC03	-
3268	SAFETY DEVICES, electrically initiated	9	-	-	280 289	0	E0	P902 LP902	-	-	-
3269	POLYESTER RESIN KIT, liquid base material	3	-	II	236 340	5 L	See SP340	P302	-	-	-
3269	POLYESTER RESIN KIT, liquid base material	3	-	III	236 340	5 L	See SP340	P302	-	-	-
3270	NITROCELLULOSE MEMBRANE FILTERS with not more than 12.6% nitrogen, by dry mass	4.1	-	II	237 286	1 kg	E2	P411	-	-	-
3271	ETHERS, N.O.S.	3	-	II	274	1 L	E2	P001	-	IBC02	-
3271	ETHERS, N.O.S.	3	-	III	223 274	5 L	E1	P001 LP01	-	IBC03	-
3272	ESTERS, N.O.S.	3	-	II	274	1 L	E2	P001	-	IBC02	-
3272	ESTERS, N.O.S.	3	-	III	223 274	5 L	E1	P001 LP01	-	IBC03	-
3273	NITRILES, FLAMMABLE, TOXIC, N.O.S.	3	6.1	I	274	0	E0	P001	-	-	-
3273	NITRILES, FLAMMABLE, TOXIC, N.O.S.	3	6.1	II	274	1 L	E2	P001	-	IBC02	-
3274	ALCOHOLATES SOLUTION, N.O.S. in alcohol	3	8	II	274	1 L	E2	P001	-	IBC02	-
3275	NITRILES, TOXIC, FLAMMABLE, N.O.S.	6.1	3	I	274 315	0	E5	P001	-	-	-
3275	NITRILES, TOXIC, FLAMMABLE, N.O.S.	6.1	3	II	274	100 mL	E4	P001	-	IBC02	-
3276	NITRILES, LIQUID, TOXIC, N.O.S.	6.1	-	I	274 315	0	E5	P001	-	-	-
3276	NITRILES, LIQUID, TOXIC, N.O.S.	6.1	-	II	274	100 mL	E4	P001	-	IBC02	-
3276	NITRILES, LIQUID, TOXIC, N.O.S.	6.1	-	III	223 274	5 L	E1	P001 LP01	-	IBC03	-

UN No.	Portable tanks and bulk containers		EmS	Stowage and handling	Segregation	Properties and observations	UN No.
	Tank instructions	Provisions					
(12)	(13) 4.2.5 4.3	(14) 4.2.5	(15) 5.4.3.2 7.8	(16a) 7.1 7.3-7.7	(16b) 7.2-7.7	(17)	(18)
-	T7	TP1 TP28	F-A, S-B	Category A SW2	SG35	Reacts violently with acids. Causes burns to skin, eyes and mucous membranes.	3266
-	T14	TP2 TP27	F-A, S-B	Category B SW2	SG35	Reacts violently with acids. Causes burns to skin, eyes and mucous membranes.	3267
-	T11	TP2 TP27	F-A, S-B	Category B SW2	SG35	See entry above.	3267
-	T7	TP1 TP28	F-A, S-B	Category A SW2	SG35	See entry above.	3267
-	-	-	F-B, S-X	Category A	-	-	3268
-	-	-	F-E, S-D	Category B	-	Polyester resin kits consist of two components: a base material (flammable liquid) and an activator (organic peroxide), each separately packed in an inner packaging.	3269
-	-	-	F-E, S-D	Category A	-	See entry above.	3269
-	-	-	F-A, S-I	Category D	-	Filters may be small round pieces or large sheets. When involved in a fire, evolve toxic fumes; in closed compartments, these fumes may form an explosive mixture with air. Burn rapidly with intense heat radiation.	3270
-	T7	TP1 TP8 TP28	F-E, S-D	Category B	-	-	3271
-	T4	TP1 TP29	F-E, S-D	Category A	-	-	3271
-	T7	TP1 TP8 TP28	F-E, S-D	Category B	-	-	3272
-	T4	TP1 TP29	F-E, S-D	Category A	-	-	3272
-	T14	TP2 TP13 TP27	F-E, S-D	Category E SW2	SG35	Liquids evolving toxic vapour. React with acids or acid fumes, evolving hydrogen cyanide, a highly toxic and flammable gas. Toxic if swallowed, by skin contact or by inhalation.	3273
-	T11	TP2 TP13 TP27	F-E, S-D	Category B SW2	SG35	See entry above.	3273
-	-	-	F-E, S-C	Category B	-	Colourless solution. Reacts violently with water. Causes burns to skin, eyes and mucous membranes.	3274
-	T14	TP2 TP13 TP27	F-E, S-D	Category B SW2	SG35	Flammable liquids, evolving toxic vapour. React with acids or acid fumes, evolving hydrogen cyanide, a highly toxic and flammable gas. Miscible with water. Toxic if swallowed, by skin contact or by inhalation.	3275
-	T11	TP2 TP13 TP27	F-E, S-D	Category B SW2	SG35	See entry above.	3275
-	T14	TP2 TP13 TP27	F-A, S-A	Category B	SG35	Liquids, evolving toxic vapour. React with acids or acid fumes, evolving hydrogen cyanide, a highly toxic and flammable gas. Miscible with water. Toxic if swallowed, by skin contact or by inhalation.	3276
-	T11	TP2 TP27	F-A, S-A	Category B	SG35	See entry above.	3276
-	T7	TP1 TP28	F-A, S-A	Category A	SG35	See entry above.	3276

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						Limited quantities	Excepted quantities	Instructions	Provisions	Instructions	Provisions
(1)	(2) 3.1.2	(3) 2.0	(4) 2.0	(5) 2.0.1.3	(6) 3.3	(7a) 3.4	(7b) 3.5	(8) 4.1.4	(9) 4.1.4	(10) 4.1.4	(11) 4.1.4
3277	CHLOROFORMATES, TOXIC, CORROSIVE, N.O.S.	6.1	8	II	274	100 mL	E4	P001	-	IBC02	-
3278	ORGANOPHOSPHORUS COMPOUND, LIQUID, TOXIC, N.O.S.	6.1	-	I	43 274 315	0	E5	P001	-	-	-
3278	ORGANOPHOSPHORUS COMPOUND, LIQUID, TOXIC, N.O.S.	6.1	-	II	43 274	100 mL	E4	P001	-	IBC02	-
3278	ORGANOPHOSPHORUS COMPOUND, LIQUID, TOXIC, N.O.S.	6.1	-	III	43 223 274	5 L	E1	P001 LP01	-	IBC03	-
3279	ORGANOPHOSPHORUS COMPOUND, TOXIC, FLAMMABLE, N.O.S.	6.1	3	I	43 274 315	0	E5	P001	-	-	-
3279	ORGANOPHOSPHORUS COMPOUND, TOXIC, FLAMMABLE, N.O.S.	6.1	3	II	43 274	100 mL	E4	P001	-	-	-
3280	ORGANOARSENIC COMPOUND, LIQUID, N.O.S.	6.1	-	I	274 315	0	E5	P001	-	-	-
3280	ORGANOARSENIC COMPOUND, LIQUID, N.O.S.	6.1	-	II	274	100 mL	E4	P001	-	IBC02	-
3280	ORGANOARSENIC COMPOUND, LIQUID, N.O.S.	6.1	-	III	223 274	5 L	E1	P001 LP01	-	IBC03	-
3281	METAL CARBONYLS, LIQUID, N.O.S.	6.1	-	I	274 315	0	E5	P601	-	-	-
3281	METAL CARBONYLS, LIQUID, N.O.S.	6.1	-	II	274	100 mL	E4	P001	-	IBC02	-
3281	METAL CARBONYLS, LIQUID, N.O.S.	6.1	-	III	223 274	5 L	E1	P001 LP01	-	IBC03	-
3282	ORGANOMETALLIC COMPOUND, LIQUID, TOXIC, N.O.S.	6.1	-	I	274	0	E5	P001	-	-	-
3282	ORGANOMETALLIC COMPOUND, LIQUID, TOXIC, N.O.S.	6.1	-	II	274	100 mL	E4	P001	-	IBC02	-
3282	ORGANOMETALLIC COMPOUND, LIQUID, TOXIC, N.O.S.	6.1	-	III	223 274	5 L	E1	P001 LP01	-	IBC03	-
3283	SELENIUM COMPOUND, SOLID, N.O.S.	6.1	-	I	274	0	E5	P002	-	IBC07	B1
3283	SELENIUM COMPOUND, SOLID, N.O.S.	6.1	-	II	274	500 g	E4	P002	-	IBC08	B4 B21
3283	SELENIUM COMPOUND, SOLID, N.O.S.	6.1	-	III	223 274	5 kg	E1	P002 LP02	-	IBC08	B3
3284	TELLURIUM COMPOUND, N.O.S.	6.1	-	I	274	0	E5	P002	-	IBC07	B1
3284	TELLURIUM COMPOUND, N.O.S.	6.1	-	II	274	500 g	E4	P002	-	IBC08	B4 B21
3284	TELLURIUM COMPOUND, N.O.S.	6.1	-	III	223 274	5 kg	E1	P002 LP02	-	IBC08	B3
3285	VANADIUM COMPOUND, N.O.S.	6.1	-	I	274	0	E5	P002	-	IBC07	B1

UN No.	Portable tanks and bulk containers		EmS	Stowage and handling	Segregation	Properties and observations	UN No.
	Tank instructions	Provisions					
(12)	(13) 4.2.5 4.3	(14) 4.2.5	(15) 5.4.3.2 7.8	(16a) 7.1 7.3-7.7	(16b) 7.2-7.7	(17)	(18)
-	T8	TP2 TP13 TP28	F-A, S-B	Category A SW1 SW2 H1 H2	-	React and decompose with water or heat, evolving hydrogen chloride, an irritating and corrosive gas apparent as white fumes. Toxic if swallowed, by skin contact or by inhalation. Cause burns to skin, eyes and mucous membranes.	3277
-	T14	TP2 TP13 TP27	F-A, S-A	Category B	-	Toxic if swallowed, by skin contact or by inhalation.	3278
-	T11	TP2 TP27	F-A, S-A	Category B	-	See entry above.	3278
-	T7	TP1 TP28	F-A, S-A	Category A	-	See entry above.	3278
-	T14	TP2 TP13 TP27	F-E, S-D	Category B SW2	-	A wide variety of toxic flammable liquids. Toxic if swallowed, by skin contact or by inhalation.	3279
-	T11	TP2 TP13 TP27	F-E, S-D	Category B SW2	-	See entry above.	3279
-	T14	TP2 TP13 TP27	F-A, S-A	Category B	-	Toxic if swallowed, by skin contact or by inhalation.	3280
-	T11	TP2 TP27	F-A, S-A	Category B	-	See entry above.	3280
-	T7	TP1 TP28	F-A, S-A	Category A	-	See entry above.	3280
-	T14	TP2 TP13 TP27	F-A, S-A	Category D SW2	-	A range of metal carbonyls which, when heated, can give off carbon monoxide, a toxic gas. Immiscible with water. Toxic if swallowed, by skin contact or by inhalation.	3281
-	T11	TP2 TP27	F-A, S-A	Category B SW2	-	See entry above.	3281
-	T7	TP1 TP28	F-A, S-A	Category B SW2	-	See entry above.	3281
-	T14	TP2 TP13 TP27	F-A, S-A	Category B	-	Toxic if swallowed, by skin contact or by inhalation.	3282
-	T11	TP2 TP27	F-A, S-A	Category B	-	See entry above.	3282
-	T7	TP1 TP28	F-A, S-A	Category A	-	See entry above.	3282
-	T6	TP33	F-A, S-A	Category B	-	Toxic if swallowed, by skin contact or by inhalation.	3283
-	T3	TP33	F-A, S-A	Category B	-	See entry above.	3283
-	T1	TP33	F-A, S-A	Category A	-	See entry above.	3283
-	T6	TP33	F-A, S-A	Category B	-	Toxic if swallowed, by skin contact or by inhalation.	3284
-	T3	TP33	F-A, S-A	Category B	-	See entry above.	3284
-	T1	TP33	F-A, S-A	Category A	-	See entry above.	3284
-	T6	TP33	F-A, S-A	Category B	-	Toxic if swallowed, by skin contact or by inhalation.	3285

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UN No.	Proper shipping name (PSN)	Class or division	Subsidiary risk(s)	Packing group	Special provisions	Limited and excepted quantity provisions		Packing		IBC	
						Limited quantities	Excepted quantities	Instructions	Provisions	Instructions	Provisions
(1)	(2) 3.1.2	(3) 2.0	(4) 2.0	(5) 2.0.1.3	(6) 3.3	(7a) 3.4	(7b) 3.5	(8) 4.1.4	(9) 4.1.4	(10) 4.1.4	(11) 4.1.4
3285	VANADIUM COMPOUND, N.O.S.	6.1	–	II	274	500 g	E4	P002	–	IBC08	B4 B21
3285	VANADIUM COMPOUND, N.O.S.	6.1	–	III	223 274	5 kg	E1	P002 LP02	–	IBC08	B3
3286	FLAMMABLE LIQUID, TOXIC, CORROSIVE, N.O.S.	3	6.1/8	I	274	0	E0	P001	–	–	–
3286	FLAMMABLE LIQUID, TOXIC, CORROSIVE, N.O.S.	3	6.1/8	II	274	1 L	E2	P001	–	IBC99	–
3287	TOXIC LIQUID, INORGANIC, N.O.S.	6.1	–	I	274 315	0	E5	P001	–	–	–
3287	TOXIC LIQUID, INORGANIC, N.O.S.	6.1	–	II	274	100 mL	E4	P001	–	IBC02	–
3287	TOXIC LIQUID, INORGANIC, N.O.S.	6.1	–	III	223 274	5 L	E1	P001 LP01	–	IBC03	–
3288	TOXIC SOLID, INORGANIC, N.O.S.	6.1	–	I	274	0	E5	P002	–	IBC99	–
3288	TOXIC SOLID, INORGANIC, N.O.S.	6.1	–	II	274	500 g	E4	P002	–	IBC08	B4 B21
3288	TOXIC SOLID, INORGANIC, N.O.S.	6.1	–	III	223 274	5 kg	E1	P002 LP02	–	IBC08	B3
3289	TOXIC LIQUID, CORROSIVE, INORGANIC, N.O.S.	6.1	8	I	274 315	0	E5	P001	–	–	–
3289	TOXIC LIQUID, CORROSIVE, INORGANIC, N.O.S.	6.1	8	II	274	100 mL	E4	P001	–	IBC02	–
3290	TOXIC SOLID, CORROSIVE, INORGANIC, N.O.S.	6.1	8	I	274	0	E5	P002	–	IBC99	–
3290	TOXIC SOLID, CORROSIVE, INORGANIC, N.O.S.	6.1	8	II	274	500 g	E4	P002	–	IBC06	B21
3291	CLINICAL WASTE, UNSPECIFIED, N.O.S. or (BIO) MEDICAL WASTE, N.O.S. or REGULATED MEDICAL WASTE, N.O.S.	6.2	–	II	–	0	E0	P621 LP621	–	IBC620	–
3292	BATTERIES, CONTAINING SODIUM or CELLS, CONTAINING SODIUM	4.3	–	–	239	0	E0	P408	–	–	–
3293	HYDRAZINE, AQUEOUS SOLUTION with not more than 37% hydrazine, by mass	6.1	–	III	223	5 L	E1	P001 LP01	–	IBC03	–
3294	HYDROGEN CYANIDE, SOLUTION IN ALCOHOL with not more than 45% hydrogen cyanide	6.1	3 P	I	900	0	E0	P601	–	–	–

(12)	Portable tanks and bulk containers		EmS	Stowage and handling	Segregation	Properties and observations	UN No.
	Tank instructions	Provisions					
(13) 4.2.5 4.3	(14) 4.2.5	(15) 5.4.3.2 7.8	(16a) 7.1 7.3–7.7	(16b) 7.2–7.7	(17)	(18)	
–	T3	TP33	F-A, S-A	Category B	–	Toxic if swallowed, by skin contact or by inhalation.	3285
–	T1	TP33	F-A, S-A	Category A	–	See entry above.	3285
–	T14	TP2 TP13 TP27	F-E, S-C	Category E SW2	SG5 SG8	Flammable, toxic, corrosive liquid. Toxic if swallowed, by skin contact or by inhalation. Causes burns to skin, eyes and mucous membranes.	3286
–	T11	TP2 TP13 TP27	F-E, S-C	Category B SW2	SG5 SG8	See entry above.	3286
–	T14	TP2 TP13 TP27	F-A, S-A	Category B SW2	–	Toxic if swallowed, by skin contact or by inhalation.	3287
–	T11	TP2 TP27	F-A, S-A	Category B SW2	–	See entry above.	3287
–	T7	TP1 TP28	F-A, S-A	Category A SW2	–	See entry above.	3287
–	T6	TP33	F-A, S-A	Category B	–	Toxic if swallowed, by skin contact or by inhalation.	3288
–	T3	TP33	F-A, S-A	Category B	–	See entry above.	3288
–	T1	TP33	F-A, S-A	Category A	–	See entry above.	3288
–	T14	TP2 TP13 TP27	F-A, S-B	Category B SW2	–	Toxic if swallowed, by skin contact or by inhalation. Causes burns to skin, eyes and mucous membranes.	3289
–	T11	TP2 TP27	F-A, S-B	Category B SW2	–	See entry above.	3289
–	T6	TP33	F-A, S-B	Category B SW2	–	Toxic if swallowed, by skin contact or by inhalation. Causes burns to skin, eyes and mucous membranes.	3290
–	T3	TP33	F-A, S-B	Category B SW2	–	See entry above.	3290
–	BK2	–	F-A, S-T	SW28	–	Derived from the medical treatment of animals, humans or from bio-research.	3291
–	–	–	F-G, S-P	Category A H1	SG26	Series of hermetically sealed metal cells containing sodium, electrically connected and secured within a metal casing. "Cold" batteries (batteries containing elemental sodium only in the solid state) are electrically inert. Batteries are activated by heating to between 300°C and 350°C before operating to produce electricity. Activated batteries (i.e. "hot" batteries containing liquid elemental sodium) may cause fire through short-circuit of the terminals. Batteries or cells should not be offered for transport at a temperature such that liquid elemental sodium is present in the battery or cell unless approved, and under conditions of transport established by the competent authority.	3292
–	T4	TP1	F-A, S-A	Category A	SG35	Colourless liquid. Reacts violently with acids. Toxic if swallowed, by skin contact or by inhalation.	3293
–	T14	TP2 TP13	F-E, S-D	Category D SW2	–	Flammable solution, evolving extremely toxic flammable vapours. Miscible with water. Highly toxic if swallowed, by skin contact or by inhalation. Transport of HYDROGEN CYANIDE, SOLUTION IN ALCOHOL with more than 45% hydrogen cyanide is prohibited.	3294

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UN No.	Proper shipping name (PSN)	Class or division	Subsidiary risk(s)	Packing group	Special provisions	Limited and excepted quantity provisions		Packing		IBC	
						Limited quantities	Excepted quantities	Instructions	Provisions	Instructions	Provisions
(1)	(2) 3.1.2	(3) 2.0	(4) 2.0	(5) 2.0.1.3	(6) 3.3	(7a) 3.4	(7b) 3.5	(8) 4.1.4	(9) 4.1.4	(10) 4.1.4	(11) 4.1.4
3295	HYDROCARBONS, LIQUID, N.O.S.	3	-	I	-	500 mL	E3	P001	-	-	-
3295	HYDROCARBONS, LIQUID, N.O.S.	3	-	II	-	1 L	E2	P001	-	IBC02	-
3295	HYDROCARBONS, LIQUID, N.O.S.	3	-	III	223	5 L	E1	P001 LP01	-	IBC03	-
3296	HEPTAFLUOROPROPANE (REFRIGERANT GAS R 227)	2.2	-	-	-	120 mL	E1	P200	-	-	-
3297	ETHYLENE OXIDE AND CHLOROTETRAFLUOROETHANE MIXTURE with not more than 8.8% ethylene oxide	2.2	-	-	-	120 mL	E1	P200	-	-	-
3298	ETHYLENE OXIDE AND PENTAFLUOROETHANE MIXTURE with not more than 7.9% ethylene oxide	2.2	-	-	-	120 mL	E1	P200	-	-	-
3299	ETHYLENE OXIDE AND TETRAFLUOROETHANE MIXTURE with not more than 5.6% ethylene oxide	2.2	-	-	-	120 mL	E1	P200	-	-	-
3300	ETHYLENE OXIDE AND CARBON DIOXIDE MIXTURE with more than 87% ethylene oxide	2.3	2.1	-	-	0	E0	P200	-	-	-
3301	CORROSIVE LIQUID, SELF-HEATING, N.O.S.	8	4.2	I	274	0	E0	P001	-	-	-
3301	CORROSIVE LIQUID, SELF-HEATING, N.O.S.	8	4.2	II	274	0	E2	P001	-	-	-
3302	2-DIMETHYLAMINOETHYL ACRYLATE	6.1	-	II	-	100 mL	E4	P001	-	IBC02	-
3303	COMPRESSED GAS, TOXIC, OXIDIZING, N.O.S.	2.3	5.1	-	274	0	E0	P200	-	-	-
3304	COMPRESSED GAS, TOXIC, CORROSIVE, N.O.S.	2.3	8	-	274	0	E0	P200	-	-	-
3305	COMPRESSED GAS, TOXIC, FLAMMABLE, CORROSIVE, N.O.S.	2.3	2.1/8	-	274	0	E0	P200	-	-	-
3306	COMPRESSED GAS, TOXIC, OXIDIZING, CORROSIVE, N.O.S.	2.3	5.1/8	-	274	0	E0	P200	-	-	-
3307	LIQUEFIED GAS, TOXIC, OXIDIZING, N.O.S.	2.3	5.1	-	274	0	E0	P200	-	-	-
3308	LIQUEFIED GAS, TOXIC, CORROSIVE, N.O.S.	2.3	8	-	274	0	E0	P200	-	-	-
3309	LIQUEFIED GAS, TOXIC, FLAMMABLE, CORROSIVE, N.O.S.	2.3	2.1/8	-	274	0	E0	P200	-	-	-
3310	LIQUEFIED GAS, TOXIC, OXIDIZING, CORROSIVE, N.O.S.	2.3	5.1/8	-	274	0	E0	P200	-	-	-
3311	GAS, REFRIGERATED LIQUID, OXIDIZING, N.O.S.	2.2	5.1	-	274	0	E0	P203	-	-	-

UN No.	Portable tanks and bulk containers		EmS	Stowage and handling	Segregation	Properties and observations	UN No.
	Tank instructions	Provisions					
(12)	(13) 4.2.5 4.3	(14) 4.2.5	(15) 5.4.3.2 7.8	(16a) 7.1 7.3-7.7	(16b) 7.2-7.7	(17)	(18)
-	T11	TP1 TP8 TP28	F-E, S-D	Category E	-	Immiscible with water.	3295
-	T7	TP1 TP8 TP28	F-E, S-D	Category B	-	See entry above.	3295
-	T4	TP1 TP29	F-E, S-D	Category A	-	Immiscible with water.	3295
-	T50	-	F-C, S-V	Category A	-	Non-flammable compressed gas. Heavier than air (1.4).	3296
-	T50	-	F-C, S-V	Category A	-	Liquefied, non-flammable, colourless gas with an ether-like odour. Much heavier than air.	3297
-	T50	-	F-C, S-V	Category A	-	Liquefied, non-flammable, colourless gas with an ether-like odour. Much heavier than air.	3298
-	T50	-	F-C, S-V	Category A	-	Liquefied, non-flammable, colourless gas with an ether-like odour. Much heavier than air.	3299
-	-	-	F-D, S-U	Category D SW2	-	Liquefied, flammable, toxic colourless gas with an ether-like odour. Heavier than air (1.5).	3300
-	-	-	F-A, S-J	Category D	-	Causes burns to skin, eyes and mucous membranes.	3301
-	-	-	F-A, S-J	Category D	-	See entry above.	3301
-	T7	TP2	F-A, S-A	Category D SW1	-	Colourless to light yellow liquid. Acrid odour. Miscible with water. Causes tears. Stabilized with hydroquinone derivatives. Hydrolyses in water to give off acrylic acid and dimethylaminoethanol. Toxic if swallowed, by skin contact or by inhalation.	3302
-	-	-	F-C, S-W	Category D SW2	-	-	3303
-	-	-	F-C, S-U	Category D SW2	-	-	3304
-	-	-	F-D, S-U	Category D SW2	SG4 SG9	-	3305
-	-	-	F-C, S-W	Category D SW2	SG6 SG19	-	3306
-	-	-	F-C, S-W	Category D SW2	-	-	3307
-	-	-	F-C, S-U	Category D SW2	-	-	3308
-	-	-	F-D, S-U	Category D SW2	SG4 SG9	-	3309
-	-	-	F-C, S-W	Category D SW2	SG6 SG19	-	3310
-	T75	TP5 TP22	F-C, S-W	Category D	-	-	3311

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UN No.	Proper shipping name (PSN)	Class or division	Subsidiary risk(s)	Packing group	Special provisions	Limited and excepted quantity provisions		Packing		IBC	
						Limited quantities	Excepted quantities	Instructions	Provisions	Instructions	Provisions
(1)	(2)	(3)	(4)	(5)	(6)	(7a)	(7b)	(8)	(9)	(10)	(11)
	3.1.2	2.0	2.0	2.0.1.3	3.3	3.4	3.5	4.1.4	4.1.4	4.1.4	4.1.4
3312	GAS, REFRIGERATED LIQUID, FLAMMABLE, N.O.S.	2.1	–	–	274	0	E0	P203	–	–	–
3313	ORGANIC PIGMENTS, SELF-HEATING	4.2	–	II	–	0	E2	P002	–	IBC08	B4 B21
3313	ORGANIC PIGMENTS, SELF-HEATING	4.2	–	III	223	0	E1	P002 LP02	–	IBC08	B3
3314	PLASTICS MOULDING COMPOUND in dough, sheet or extruded rope form, evolving flammable vapour	9	–	III	207 965	5 kg	E1	P002	PP14	IBC08	B3 B6
3315	CHEMICAL SAMPLE, TOXIC	6.1	–	I	250	0	E0	P099	–	–	–
3316	CHEMICAL KIT or FIRST AID KIT	9	–	II	251 340	See SP251	See SP340	P901	–	–	–
3316	CHEMICAL KIT or FIRST AID KIT	9	–	III	251 340	See SP251	See SP340	P901	–	–	–
3317	2-AMINO-4,6-DINITROPHENOL, WETTED with not less than 20% water, by mass	4.1	–	I	28	0	E0	P406	PP26 PP31	–	–
3318	AMMONIA SOLUTION relative density less than 0.880 at 15°C in water, with more than 50% ammonia	2.3	8 P	–	23	0	E0	P200	–	–	–
3319	NITROGLYCERIN MIXTURE, DESENSITIZED, SOLID, N.O.S. with more than 2% but not more than 10% nitroglycerin, by mass	4.1	–	II	272 274	0	E0	P099	–	–	–
3320	SODIUM BOROHYDRIDE AND SODIUM HYDROXIDE SOLUTION with not more than 12% sodium borohydride and not more than 40% sodium hydroxide, by mass	8	–	II	–	1 L	E2	P001	–	IBC02	–
3320	SODIUM BOROHYDRIDE AND SODIUM HYDROXIDE SOLUTION with not more than 12% sodium borohydride and not more than 40% sodium hydroxide, by mass	8	–	III	223	5 L	E1	P001 LP01	–	IBC03	–

UN No.	Portable tanks and bulk containers		EmS	Stowage and handling	Segregation	Properties and observations	UN No.
	Tank instructions	Provisions					
(12)	(13)	(14)	(15)	(16a)	(16b)	(17)	(18)
	4.2.5 4.3	4.2.5	5.4.3.2 7.8	7.1 7.3–7.7	7.2–7.7		
–	T75	TP5	F–D, S–U	Category D SW2	–	–	3312
–	T3	TP33	F–A, S–J	Category C	–	Self-heating coloured powder or granules. Odourless. Liable to self-heating or spontaneous combustion.	3313
–	T1	TP33	F–A, S–J	Category C	–	See entry above.	3313
–	–	–	F–A, S–I	Category E SW1 SW6	SG5 SG14	A moulding material consisting predominantly of polystyrene, poly(methyl methacrylate) or other polymeric material and containing 5% to 8% of a volatile hydrocarbon which is predominantly pentane. During storage, a small proportion of this pentane is released to the atmosphere; this proportion increases at elevated temperatures.	3314
–	–	–	F–A, S–A	Category D SW2	–	This entry may only be used for samples of chemicals taken for analysis in connection with the implementation of the Convention on the Prohibition of the Development, Production, Stockpiling and Use of Chemical Weapons and on their Destruction. The transport of substances under this entry shall be in accordance with the chain of custody and security procedures specified by the Organization for the Prohibition of Chemical Weapons. The chemical sample may only be transported providing prior approval has been granted by the competent authority or the Director General of the Organization for the Prohibition of Chemical Weapons. During transport, the packaging shall be accompanied by a copy of the document of approval for transport, showing the quantity limitations and the packing requirements.	3315
–	–	–	F–A, S–P	Category A	–	–	3316
–	–	–	F–A, S–P	Category A	–	–	3316
–	–	–	F–B, S–J	Category D	SG7 SG30	Desensitized explosive. Red crystals. Insoluble in water. Explosive in the dry state. May form extremely sensitive compounds with heavy metals or their salts. When involved in a fire, evolves toxic fumes; in closed compartments these fumes may form an explosive mixture with air. Harmful if swallowed or by skin contact.	3317
–	T50	–	F–C, S–U	Category D SW2	SG35 SG46	Highly concentrated solution in water of a non-flammable, toxic and corrosive gas with a pungent odour. Even though this substance has a flammability hazard, it only exhibits such hazard under extreme fire conditions in confined areas. Reacts violently with acids. Highly irritating to skin, eyes and mucous membranes. Suffocating in low concentrations.	3318
–	–	–	F–B, S–J	Category E	–	Desensitized explosive with lactose, glucose or cellulose. White solid. Soluble in water. When involved in a fire, the nitroglycerin may accumulate and may produce an explosion. Contact with water may dissolve the desensitizer (lactose or glucose), causing migration and accumulation of the nitroglycerin, which may explode. Nitroglycerin is more dense than water. When involved in a fire, evolves toxic fumes; in closed compartments these fumes may form an explosive mixture with air. Inhalation of vapours may cause headaches, dizziness and fainting.	3319
–	T7	TP2	F–A, S–B	Category A	SG35	Off-white clear liquid with a slight hydrocarbon odour. Reacts violently with acids. In contact with acids or if diluted with large amount of water, evolves hydrogen gas and heat. Causes burns to skin, eyes and mucous membranes.	3320
–	T4	TP2	F–A, S–B	Category A	SG35	See entry above.	3320

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UN No.	Proper shipping name (PSN)	Class or division	Subsidiary risk(s)	Packing group	Special provisions	Limited and excepted quantity provisions		Packing		IBC	
						Limited quantities	Excepted quantities	Instructions	Provisions	Instructions	Provisions
(1)	(2) 3.1.2	(3) 2.0	(4) 2.0	(5) 2.0.1.3	(6) 3.3	(7a) 3.4	(7b) 3.5	(8) 4.1.4	(9) 4.1.4	(10) 4.1.4	(11) 4.1.4
3321	RADIOACTIVE MATERIAL, LOW SPECIFIC ACTIVITY (LSA-II), non fissile or fissile-excepted	7	See SP172	–	172 317 325	0	E0	See 4.1.9	See 4.1.9	See 4.1.9	See 4.1.9
3322	RADIOACTIVE MATERIAL, LOW SPECIFIC ACTIVITY (LSA-III), non fissile or fissile-excepted	7	See SP172	–	172 317 325	0	E0	See 4.1.9	See 4.1.9	See 4.1.9	See 4.1.9
3323	RADIOACTIVE MATERIAL, TYPE C PACKAGE, non fissile or fissile-excepted	7	See SP172	–	172 317 325	0	E0	See 4.1.9	See 4.1.9	See 4.1.9	See 4.1.9
3324	RADIOACTIVE MATERIAL, LOW SPECIFIC ACTIVITY (LSA-II), FISSILE	7	See SP172	–	172 326	0	E0	See 4.1.9	See 4.1.9	See 4.1.9	See 4.1.9
3325	RADIOACTIVE MATERIAL, LOW SPECIFIC ACTIVITY, (LSA-III), FISSILE	7	See SP172	–	172 326	0	E0	See 4.1.9	See 4.1.9	See 4.1.9	See 4.1.9
3326	RADIOACTIVE MATERIAL, SURFACE CONTAMINATED OBJECTS (SCO-I or SCO-II), FISSILE	7	See SP172	–	172	0	E0	See 4.1.9	See 4.1.9	See 4.1.9	See 4.1.9
3327	RADIOACTIVE MATERIAL, TYPE A PACKAGE, FISSILE, non-special form	7	See SP172	–	172 326	0	E0	See 4.1.9	See 4.1.9	See 4.1.9	See 4.1.9
3328	RADIOACTIVE MATERIAL, TYPE B(U) PACKAGE, FISSILE	7	See SP172	–	172 326	0	E0	See 4.1.9	See 4.1.9	See 4.1.9	See 4.1.9
3329	RADIOACTIVE MATERIAL, TYPE B(M) PACKAGE, FISSILE	7	See SP172	–	172 326	0	E0	See 4.1.9	See 4.1.9	See 4.1.9	See 4.1.9
3330	RADIOACTIVE MATERIAL, TYPE C PACKAGE, FISSILE	7	See SP172	–	172 326	0	E0	See 4.1.9	See 4.1.9	See 4.1.9	See 4.1.9
3331	RADIOACTIVE MATERIAL, TRANSPORTED UNDER SPECIAL ARRANGEMENT, FISSILE	7	See SP172	–	172 326	0	E0	See 4.1.9	See 4.1.9	See 4.1.9	See 4.1.9
3332	RADIOACTIVE MATERIAL, TYPE A PACKAGE, SPECIAL FORM, non fissile or fissile-excepted	7	See SP172	–	172 317	0	E0	See 4.1.9	See 4.1.9	See 4.1.9	See 4.1.9
3333	RADIOACTIVE MATERIAL, TYPE A PACKAGE, SPECIAL FORM, FISSILE	7	See SP172	–	172	0	E0	See 4.1.9	See 4.1.9	See 4.1.9	See 4.1.9
3334	AVIATION REGULATED LIQUID, N.O.S.	9	–	–	960	–	–	–	–	–	–
3335	AVIATION REGULATED SOLID, N.O.S.	9	–	–	960	–	–	–	–	–	–
3336	MERCAPTANS, LIQUID, FLAMMABLE, N.O.S. or MERCAPTAN MIXTURE, LIQUID, FLAMMABLE, N.O.S.	3	–	I	274	0	E0	P001	–	–	–

UN No.	Portable tanks and bulk containers		EmS	Stowage and handling	Segregation	Properties and observations	UN No.
	Tank instructions	Provisions					
(12)	(13) 4.2.5 4.3	(14) 4.2.5	(15) 5.4.3.2 7.8	(16a) 7.1 7.3–7.7	(16b) 7.2–7.7	(17)	(18)
–	T5	TP4	F-I, S-S	Category A SW20 SW21	–	See 1.5.1.	3321
–	T5	TP4	F-I, S-S	Category A SW21	–	See 1.5.1.	3322
–	–	–	F-I, S-S	Category A SW12	–	See 1.5.1. For ships transporting an INF cargo as defined in regulation VII/14 of the SOLAS Convention, 1974, as amended, refer also to the INF Code.	3323
–	–	–	F-I, S-S	Category A SW12 SW20 SW21	–	See 1.5.1.	3324
–	–	–	F-I, S-S	Category A SW12 SW21	–	See 1.5.1.	3325
–	–	–	F-I, S-S	Category A SW12	–	See 1.5.1.	3326
–	–	–	F-I, S-S	Category A SW12 SW20 SW21	–	See 1.5.1.	3327
–	–	–	F-I, S-S	Category A SW12	–	See 1.5.1. For ships transporting an INF cargo as defined in regulation VII/14 of the SOLAS Convention, 1974, as amended, refer also to the INF Code.	3328
–	–	–	F-I, S-S	Category A SW12	–	See 1.5.1. For ships transporting an INF cargo as defined in regulation VII/14 of the SOLAS Convention, 1974, as amended, refer also to the INF Code.	3329
–	–	–	F-I, S-S	Category A SW12	–	See 1.5.1. For ships transporting an INF cargo as defined in regulation VII/14 of the SOLAS Convention, 1974, as amended, refer also to the INF Code.	3330
–	–	–	F-I, S-S	Category A SW13	–	See 1.5.1. For ships transporting an INF cargo as defined in regulation VII/14 of the SOLAS Convention, 1974, as amended, refer also to the INF Code.	3331
–	–	–	F-I, S-S	Category A	–	See 1.5.1.	3332
–	–	–	F-I, S-S	Category A SW12	–	See 1.5.1.	3333
–	–	–	–	–	–	Not subject to the provisions of this Code but may be subject to provisions governing the transport of dangerous goods by other modes.	3334
–	–	–	–	–	–	Not subject to the provisions of this Code but may be subject to provisions governing the transport of dangerous goods by other modes.	3335
–	T11	TP2	F-E, S-D	Category E	SG50 SG57	Colourless to yellow liquids with a garlic odour. Immiscible with water.	3336

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UN No.	Proper shipping name (PSN)	Class or division	Subsidiary risk(s)	Packing group	Special provisions	Limited and excepted quantity provisions		Packing		IBC	
						Limited quantities	Excepted quantities	Instructions	Provisions	Instructions	Provisions
(1)	(2) 3.1.2	(3) 2.0	(4) 2.0	(5) 2.0.1.3	(6) 3.3	(7a) 3.4	(7b) 3.5	(8) 4.1.4	(9) 4.1.4	(10) 4.1.4	(11) 4.1.4
3336	MERCAPTANS, LIQUID, FLAMMABLE, N.O.S. or MERCAPTAN MIXTURE, LIQUID, FLAMMABLE, N.O.S.	3	–	II	274	1 L	E2	P001	–	IBC02	–
3336	MERCAPTANS, LIQUID, FLAMMABLE, N.O.S. or MERCAPTAN MIXTURE, LIQUID, FLAMMABLE, N.O.S.	3	–	III	223 274	5 L	E1	P001 LP01	–	IBC03	–
3337	REFRIGERANT GAS R 404A	2.2	–	–	–	120 mL	E1	P200	–	–	–
3338	REFRIGERANT GAS R 407A	2.2	–	–	–	120 mL	E1	P200	–	–	–
3339	REFRIGERANT GAS R 407B	2.2	–	–	–	120 mL	E1	P200	–	–	–
3340	REFRIGERANT GAS R 407C	2.2	–	–	–	120 mL	E1	P200	–	–	–
3341	THIOUREA DIOXIDE	4.2	–	II	–	0	E2	P002	PP31	IBC06	B21
3341	THIOUREA DIOXIDE	4.2	–	III	223	0	E1	P002 LP02	PP31	IBC08	B3
3342	XANTHATES	4.2	–	II	–	0	E2	P002	PP31	IBC06	B21
3342	XANTHATES	4.2	–	III	223	0	E1	P002 LP02	PP31	IBC08	B3
3343	NITROGLYCERIN MIXTURE, DESENSITIZED, LIQUID, FLAMMABLE, N.O.S. with not more than 30% nitroglycerin, by mass	3	–	–	274 278	0	E0	P099	–	–	–
3344	PENTAERYTHRITATE TETRANITRATE (PENTAERYTHRITOL TETRANITRATE; PETN) MIXTURE, DESENSITIZED, SOLID, N.O.S. with more than 10% but not more than 20% PETN, by mass	4.1	–	II	272 274	0	E0	P406	PP26 PP80	–	–
3345	PHENOXYACETIC ACID DERIVATIVE PESTICIDE, SOLID, TOXIC	6.1	–	I	61 274	0	E5	P002	–	IBC07	B1
3345	PHENOXYACETIC ACID DERIVATIVE PESTICIDE, SOLID, TOXIC	6.1	–	II	61 274	500 g	E4	P002	–	IBC08	B4 B21

UN No.	Portable tanks and bulk containers		EmS	Stowage and handling	Segregation	Properties and observations	UN No.
	Tank instructions	Provisions					
(12)	(13) 4.2.5 4.3	(14) 4.2.5	(15) 5.4.3.2 7.8	(16a) 7.1 7.3–7.7	(16b) 7.2–7.7	(17)	(18)
–	T7	TP1 TP8 TP28	F-E, S-D	Category B	SG50 SG57	Colourless to yellow liquids with a garlic odour. Immiscible with water.	3336
–	T4	TP1 TP29	F-E, S-D	Category B	SG50 SG57	See entry above.	3336
–	T50	–	F-C, S-V	Category A	–	Liquefied, non-flammable, colourless gas with a faint ether-like odour. Heavier than air (1.06). Very high exposures may cause anaesthetic effects and asphyxiation.	3337
–	T50	–	F-C, S-V	Category A	–	Liquefied, non-flammable, colourless gas with a faint ether-like odour. Heavier than air (1.17). Very high exposures may cause anaesthetic effects and asphyxiation.	3338
–	T50	–	F-C, S-V	Category A	–	Liquefied, non-flammable, colourless gas with a faint ether-like odour. Heavier than air (1.19). Very high exposures may cause anaesthetic effects and asphyxiation.	3339
–	T50	–	F-C, S-V	Category A	–	Liquefied, non-flammable, colourless gas with a faint ether-like odour. Heavier than air (1.16). Very high exposures may cause anaesthetic effects and asphyxiation.	3340
–	T3	TP33	F-A, S-J	Category D	–	White to yellow-white crystalline powder. Virtually odourless. Strong reducing agent. Violent exothermic decomposition above 100°C with emission of large amounts of sulphur oxides, ammonia, carbon monoxide, carbon dioxide, nitrogen oxides and hydrogen sulphide. Extended exposure to temperatures above 50°C and moisture may cause visible decomposition. Dust irritating to skin, eyes and mucous membranes.	3341
–	T1	TP33	F-A, S-J	Category D	–	See entry above.	3341
–	T3	TP33	F-A, S-J	Category D SW2	–	Hygroscopic yellow powder with an unpleasant odour. On contact with moisture, evolves highly flammable vapours such as carbon disulphide (UN 1131, which has a flashpoint of –30°C c.c. and a very low ignition temperature of 100°C). When confined, can cause an explosion due to the wide explosive limits of the vapours. Finely divided dust forms explosive mixtures in air. Care should be taken when opening cargo transport units in case carbon disulphide vapours are present.	3342
–	T1	TP33	F-A, S-J	Category D SW2	–	See entry above.	3342
–	–	–	F-E, S-Y	Category D	–	–	3343
–	–	–	F-B, S-J	Category E	–	–	3344
–	T6	TP33	F-A, S-A	Category A SW2	–	Solid pesticides present a very wide range of toxic hazard. Toxic if swallowed, by skin contact or by inhalation.	3345
–	T3	TP33	F-A, S-A	Category A SW2	–	See entry above.	3345

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UN No.	Proper shipping name (PSN)	Class or division	Subsidiary risk(s)	Packing group	Special provisions	Limited and excepted quantity provisions		Packing		IBC	
						Limited quantities	Excepted quantities	Instructions	Provisions	Instructions	Provisions
(1)	(2) 3.1.2	(3) 2.0	(4) 2.0	(5) 2.0.1.3	(6) 3.3	(7a) 3.4	(7b) 3.5	(8) 4.1.4	(9) 4.1.4	(10) 4.1.4	(11) 4.1.4
3345	PHENOXYACETIC ACID DERIVATIVE PESTICIDE, SOLID, TOXIC	6.1	–	III	61 223 274	5 kg	E1	P002 LP02	–	IBC08	B3
3346	PHENOXYACETIC ACID DERIVATIVE PESTICIDE, LIQUID, FLAMMABLE, TOXIC flashpoint less than 23°C	3	6.1	I	61 274	0	E0	P001	–	–	–
3346	PHENOXYACETIC ACID DERIVATIVE PESTICIDE, LIQUID, FLAMMABLE, TOXIC flashpoint less than 23°C	3	6.1	II	61 274	1 L	E2	P001	–	IBC02	–
3347	PHENOXYACETIC ACID DERIVATIVE PESTICIDE, LIQUID, TOXIC, FLAMMABLE, flashpoint not less than 23°C	6.1	3	I	61 274	0	E5	P001	–	–	–
3347	PHENOXYACETIC ACID DERIVATIVE PESTICIDE, LIQUID, TOXIC, FLAMMABLE, flashpoint not less than 23°C	6.1	3	II	61 274	100 mL	E4	P001	–	IBC02	–
3347	PHENOXYACETIC ACID DERIVATIVE PESTICIDE, LIQUID, TOXIC, FLAMMABLE, flashpoint not less than 23°C	6.1	3	III	61 223 274	5 L	E1	P001	–	IBC03	–
3348	PHENOXYACETIC ACID DERIVATIVE PESTICIDE, LIQUID, TOXIC	6.1	–	I	61 274	0	E5	P001	–	–	–
3348	PHENOXYACETIC ACID DERIVATIVE PESTICIDE, LIQUID, TOXIC	6.1	–	II	61 274	100 mL	E4	P001	–	IBC02	–
3348	PHENOXYACETIC ACID DERIVATIVE PESTICIDE, LIQUID, TOXIC	6.1	–	III	61 223 274	5 L	E1	P001 LP01	–	IBC03	–
3349	PYRETHROID PESTICIDE, SOLID, TOXIC	6.1	–	I	61 274	0	E5	P002	–	IBC07	B1
3349	PYRETHROID PESTICIDE, SOLID, TOXIC	6.1	–	II	61 274	500 g	E4	P002	–	IBC08	B4 B21
3349	PYRETHROID PESTICIDE, SOLID, TOXIC	6.1	–	III	61 223 274	5 kg	E1	P002 LP02	–	IBC08	B3
3350	PYRETHROID PESTICIDE, LIQUID, FLAMMABLE, TOXIC, flashpoint less than 23°C	3	6.1	I	61 274	0	E0	P001	–	–	–
3350	PYRETHROID PESTICIDE, LIQUID, FLAMMABLE, TOXIC, flashpoint less than 23°C	3	6.1	II	61 274	1 L	E2	P001	–	IBC02	–
3351	PYRETHROID PESTICIDE, LIQUID, TOXIC, FLAMMABLE, flashpoint not less than 23°C	6.1	3	I	61 274	0	E5	P001	–	–	–
3351	PYRETHROID PESTICIDE, LIQUID, TOXIC, FLAMMABLE, flashpoint not less than 23°C	6.1	3	II	61 274	100 mL	E4	P001	–	IBC02	–
3351	PYRETHROID PESTICIDE, LIQUID, TOXIC, FLAMMABLE, flashpoint not less than 23°C	6.1	3	III	61 223 274	5 L	E1	P001	–	IBC03	–
3352	PYRETHROID PESTICIDE, LIQUID, TOXIC	6.1	–	I	61 274	0	E5	P001	–	–	–

(12)	Portable tanks and bulk containers		EmS	Stowage and handling	Segregation	Properties and observations	UN No.
	Tank instructions	Provisions					
(13) 4.2.5 4.3	(14) 4.2.5	(15) 5.4.3.2 7.8	(16a) 7.1 7.3–7.7	(16b) 7.2–7.7	(17)	(18)	
–	T1	TP33	F-A, S-A	Category A SW2	–	Solid pesticides present a very wide range of toxic hazard. Toxic if swallowed, by skin contact or by inhalation.	3345
–	T14	TP2 TP13 TP27	F-E, S-D	Category B SW2	–	Pesticides frequently containing petroleum or coal tar distillates, or other flammable liquids. Miscibility with water depends upon the composition. Toxic if swallowed, by skin contact or by inhalation.	3346
–	T11	TP2 TP13 TP27	F-E, S-D	Category B SW2	–	Pesticides frequently containing petroleum or coal tar distillates, or other flammable liquids. Miscibility with water depends upon the composition. Toxic if swallowed, by skin contact or by inhalation.	3346
–	T14	TP2 TP13 TP27	F-E, S-D	Category B SW2	–	They frequently contain petroleum or coal tar distillates, or other flammable liquids. Flashpoint and miscibility with water depend upon the composition. Toxic if swallowed, by skin contact or by inhalation.	3347
–	T11	TP2 TP13 TP27	F-E, S-D	Category B SW2	–	See entry above.	3347
–	T7	TP2 TP28	F-E, S-D	Category A SW2	–	See entry above.	3347
–	T14	TP2 TP13 TP27	F-A, S-A	Category B SW2	–	Liquid pesticides which present a very wide range of toxic hazard. Miscibility with water depends upon the composition. Toxic if swallowed, by skin contact or by inhalation.	3348
–	T11	TP2 TP27	F-A, S-A	Category B SW2	–	See entry above.	3348
–	T7	TP2 TP28	F-A, S-A	Category A SW2	–	See entry above.	3348
–	T6	TP33	F-A, S-A	Category A SW2	–	Solid pesticides present a very wide range of toxic hazard. Toxic if swallowed, by skin contact or by inhalation.	3349
–	T3	TP33	F-A, S-A	Category A SW2	–	See entry above.	3349
–	T1	TP33	F-A, S-A	Category A SW2	–	See entry above.	3349
–	T14	TP2 TP13 TP27	F-E, S-D	Category B SW2	–	Miscibility with water depends upon the composition. Toxic if swallowed, by skin contact or by inhalation.	3350
–	T11	TP2 TP13 TP27	F-E, S-D	Category B SW2	–	See entry above.	3350
–	T14	TP2 TP13 TP27	F-E, S-D	Category B SW2	–	They frequently contain petroleum or coal tar distillates, or other flammable liquids. Flashpoint and miscibility with water depend upon the composition. Toxic if swallowed, by skin contact or by inhalation.	3351
–	T11	TP2 TP13 TP27	F-E, S-D	Category B SW2	–	See entry above.	3351
–	T7	TP2 TP28	F-E, S-D	Category A SW2	–	See entry above.	3351
–	T14	TP2 TP13 TP27	F-A, S-A	Category B SW2	–	Liquid pesticides which present a very wide range of toxic hazard. Miscibility with water depends upon the composition. Toxic if swallowed, by skin contact or by inhalation.	3352

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UN No.	Proper shipping name (PSN)	Class or division	Subsidiary risk(s)	Packing group	Special provisions	Limited and excepted quantity provisions		Packing		IBC	
						Limited quantities	Excepted quantities	Instructions	Provisions	Instructions	Provisions
(1)	(2)	(3)	(4)	(5)	(6)	(7a)	(7b)	(8)	(9)	(10)	(11)
	3.1.2	2.0	2.0	2.0.1.3	3.3	3.4	3.5	4.1.4	4.1.4	4.1.4	4.1.4
3352	PYRETHROID PESTICIDE, LIQUID, TOXIC	6.1	–	II	61 274	100 mL	E4	P001	–	IBC02	–
3352	PYRETHROID PESTICIDE, LIQUID, TOXIC	6.1	–	III	61 223 274	5 L	E1	P001 LP01	–	IBC03	–
3354	INSECTICIDE GAS, FLAMMABLE, N.O.S.	2.1	–	–	274	0	E0	P200	–	–	–
3355	INSECTICIDE GAS, TOXIC, FLAMMABLE, N.O.S.	2.3	2.1	–	274	0	E0	P200	–	–	–
3356	OXYGEN GENERATOR, CHEMICAL	5.1	–	–	284	0	E0	P500	–	–	–
3357	NITROGLYCERIN MIXTURE, DESENSITIZED, LIQUID, N.O.S. with not more than 30% nitroglycerin, by mass	3	–	II	274 288	0	E0	P099	–	–	–
3358	REFRIGERATING MACHINES containing flammable, non-toxic, liquefied gas	2.1	–	–	291	0	E0	P003	PP32	–	–
3359	FUMIGATED CARGO TRANSPORT UNIT	9	–	–	302	0	E0	–	–	–	–
3360	FIBRES, VEGETABLE, DRY	4.1	–	–	29 117 299	0	E0	P003	PP19	–	–
3361	CHLOROSILANES, TOXIC, CORROSIVE, N.O.S.	6.1	8	II	274	0	E0	P010	–	–	–
3362	CHLOROSILANES, TOXIC, CORROSIVE, FLAMMABLE, N.O.S.	6.1	3/8	II	274	0	E0	P010	–	–	–
3363	DANGEROUS GOODS IN MACHINERY or DANGEROUS GOODS IN APPARATUS	9	–	–	301	See SP301	E0	P907	–	–	–

UN No.	Portable tanks and bulk containers		EmS	Stowage and handling	Segregation	Properties and observations	UN No.
	Tank instructions	Provisions					
(12)	(13)	(14)	(15)	(16a)	(16b)	(17)	(18)
	4.2.5 4.3	4.2.5	5.4.3.2 7.8	7.1 7.3–7.7	7.2–7.7		
–	T11	TP2 TP27	F-A, S-A	Category B SW2	–	Liquid pesticides which present a very wide range of toxic hazard. Miscibility with water depends upon the composition. Toxic if swallowed, by skin contact or by inhalation.	3352
–	T7	TP2 TP28	F-A, S-A	Category A SW2	–	See entry above.	3352
–	–	–	F-D, S-U	Category D	–	Flammable mixtures of insecticides with liquefied gases.	3354
–	–	–	F-D, S-U	Category D SW2	–	Toxic, flammable mixtures of insecticides with liquefied gases.	3355
–	–	–	F-H, S-Q	Category D	–	Oxygen generators, chemical are devices containing chemicals which, upon activation, release oxygen as a product of chemical reaction. Chemical oxygen generators are used for the generation of oxygen for respiratory support, e.g. in aircraft, submarines, spacecraft, bomb shelters and breathing apparatus. Oxidizing salts such as chlorates and perchlorates of lithium, sodium and potassium, which are used in chemical oxygen generators, evolve oxygen when heated. These salts are mixed (compounded) with a fuel, usually iron powder, to form a chlorate candle, which produces oxygen by continuous reaction. The fuel is used to generate heat by oxidation. Once the reaction begins, oxygen is released from the hot salt by thermal decomposition (a thermal shield is used around the generator). A portion of the oxygen reacts with the fuel to produce more heat, which produces more oxygen, and so on. Initiation of the reaction can be achieved by a percussion device, friction device or electric wire.	3356
–	–	–	F-E, S-Y	Category D	–	–	3357
–	–	–	F-D, S-U	Category D	–	–	3358
–	–	–	F-A, S-D	Category B SW2	–	A 'FUMIGATED CARGO TRANSPORT UNIT' is a closed cargo transport unit containing goods or materials that either are or have been fumigated within the unit. The fumigant gases used are either poisonous or asphyxiant. The gases are usually evolved from solid or liquid preparations distributed within the unit. See also 5.5.2.	3359
–	–	–	F-A, S-I	Category A	–	Ignite readily. Consignments of cotton, dry having a density not less than 360 kg/m ³ , flax, dry having a density not less than 400 kg/m ³ , sisal, dry having a density not less than 360 kg/m ³ (ISO Standard 8115 (1986)) and tampico fibre, dry having a density not less than 360 kg/m ³ are not subject to the provisions of this Code when carried in closed cargo transport units.	3360
–	T14	TP2 TP7 TP13 TP27	F-A, S-B	Category C SW2	–	Colourless to yellow liquids with a pungent odour. Immiscible with water. React violently with water or steam, evolving hydrogen chloride, an irritating and corrosive gas apparent as white fumes. When involved in a fire, evolve toxic gas. In the presence of moisture, highly corrosive to most metals. Toxic if swallowed, by skin contact or by inhalation. Cause burns to skin, eyes and mucous membranes.	3361
–	T14	TP2 TP7 TP13 TP27	F-E, S-C	Category C SW2	SG5 SG8	Colourless to yellow flammable liquids with a pungent odour. Immiscible with water. React violently with water or steam, evolving hydrogen chloride, an irritating and corrosive gas apparent as white fumes. When involved in a fire, evolve toxic gas. In the presence of moisture, highly corrosive to most metals. Toxic if swallowed, by skin contact or by inhalation. Cause burns to skin, eyes and mucous membranes.	3362
–	–	–	F-A, S-P	Category A	–	Types of articles transported under this entry contain only limited quantities of dangerous goods.	3363

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						Limited quantities	Excepted quantities	Instructions	Provisions	Instructions	Provisions
(1)	(2) 3.1.2	(3) 2.0	(4) 2.0	(5) 2.0.1.3	(6) 3.3	(7a) 3.4	(7b) 3.5	(8) 4.1.4	(9) 4.1.4	(10) 4.1.4	(11) 4.1.4
3364	TRINITROPHENOL (PICRIC ACID), WETTED with not less than 10% water, by mass	4.1	–	I	28	0	E0	P406	PP24 PP31	–	–
3365	TRINITROCHLOROBENZENE (PICRYL CHLORIDE), WETTED with not less than 10% water, by mass	4.1	–	I	28	0	E0	P406	PP24 PP31	–	–
3366	TRINITROTOLUENE (TNT), WETTED with not less than 10% water, by mass	4.1	–	I	28	0	E0	P406	PP24 PP31	–	–
3367	TRINITROBENZENE, WETTED with not less than 10% water, by mass	4.1	–	I	28	0	E0	P406	PP24 PP31	–	–
3368	TRINITROBENZOIC ACID, WETTED with not less than 10% water, by mass	4.1	–	I	28	0	E0	P406	PP24 PP31	–	–
3369	SODIUM DINITRO- <i>o</i> -CRESOLATE, WETTED with not less than 10% water, by mass	4.1	6.1 P	I	28	0	E0	P406	PP24 PP31	–	–
3370	UREA NITRATE, WETTED with not less than 10% water, by mass	4.1	–	I	28	0	E0	P406	PP31 PP78	–	–
3371	2-METHYLBUTANAL	3	–	II	–	1 L	E2	P001	–	IBC02	–
3373	BIOLOGICAL SUBSTANCE, CATEGORY B	6.2	–	–	319 341	0	E0	P650	–	–	–
3374	ACETYLENE, SOLVENT FREE	2.1	–	–	–	0	E0	P200	–	–	–
3375	AMMONIUM NITRATE EMULSION or SUSPENSION or GEL intermediate for blasting explosives	5.1	–	II	309	0	E2	P505	–	IBC02	B16

UN No.	Portable tanks and bulk containers		EmS	Stowage and handling	Segregation	Properties and observations	UN No.
	Tank instructions	Provisions					
(12)	(13) 4.2.5 4.3	(14) 4.2.5	(15) 5.4.3.2 7.8	(16a) 7.1 7.3–7.7	(16b) 7.2–7.7	(17)	(18)
–	–	–	F-B, S-J	Category E	SG7 SG30	Desensitized explosive. Substance in pure form consists of yellow crystals. Soluble in water. Explosive and sensitive to friction in the dry state. May form extremely sensitive compounds with heavy metals or their salts. Harmful if swallowed or by skin contact.	3364
–	–	–	F-B, S-J	Category E	SG7 SG30	Desensitized explosive. Explosive and sensitive to shock and heat in the dry state. Reacts violently with heavy metals and their salts.	3365
–	–	–	F-B, S-J	Category E	SG7 SG30	Desensitized explosive. Substance in pure form consists of yellow crystals. When involved in a fire, evolves toxic fumes; in closed compartments, these fumes may form an explosive mixture with air. Explosive and sensitive to shock and heat in the dry state. Reacts violently with heavy metals and their salts.	3366
–	–	–	F-B, S-J	Category E	SG7 SG30	Desensitized explosive. Substance in pure form consists of odourless yellow crystals. When involved in a fire, evolves toxic fumes; in closed compartments, these fumes may form an explosive mixture with air. Explosive and sensitive to shock and heat in the dry state. Harmful if swallowed or by skin contact. Reacts violently with heavy metals and their salts.	3367
–	–	–	F-B, S-J	Category E	SG7 SG30	Desensitized explosive. Substance in pure form consists of yellow crystals. Soluble in water. When involved in a fire, evolves toxic fumes; in closed compartments, these fumes may form an explosive mixture with air. Explosive and sensitive to shock and heat in the dry state. Harmful if swallowed or by skin contact. Reacts violently with heavy metals and their salts.	3368
–	–	–	F-B, S-J	Category E	SG7 SG30	Desensitized explosive. Substance in pure form consists of yellow powder. May form extremely sensitive compounds with heavy metals or their salts. When involved in a fire, evolves toxic fumes; in closed compartments, these fumes may form an explosive mixture with air. Explosive and sensitive to friction in the dry state. Toxic if swallowed, by skin contact or by inhalation.	3369
–	–	–	F-B, S-J	Category E	SG7 SG30	Desensitized explosive. May form extremely sensitive compounds with heavy metals or their salts. Explosive and sensitive to friction in the dry state. Harmful if swallowed or by skin contact.	3370
–	T4	TP1	F-E, S-D	Category B	–	Colourless liquid. Flashpoint: –3.5°C. Explosive limits: 1.3 to 13.9%. Slightly miscible with water.	3371
–	T1 BK2	TP1	F-A, S-T	Category C SW2 SW18	–	Substances which are known or are reasonably expected to contain pathogens, transported in a form that, when exposure to it occurs, are not capable of causing permanent disability, life-threatening or fatal disease to humans or animals. Human or animal specimens for which there is minimal likelihood that pathogens are present are not subject to the provisions of this Code (see 2.6.3.2.3.6). Other exemptions are stated in 2.6.3.2.3.	3373
–	–	–	F-D, S-U	Category D SW1 SW2	SG46	Flammable gas with slight odour. Explosive limits: 2.1 to 80%. Lighter than air (0.907). Acetylene without solvent. Rough handling and exposure to local heating should be avoided, since these conditions may result in delayed explosion. Empty cylinders should be carried with the same precautions as filled cylinders.	3374
–	T1	TP1 TP9 TP17 TP32	F-H, S-Q	Category D SW1	SG16 SG42 SG45 SG47 SG48 SG51 SG56 SG58 SG59 SG61	Non-sensitized emulsions, suspensions and gels consisting primarily of a mixture of ammonium nitrate and fuel, intended to produce a Type E blasting explosive only after further processing prior to use. Substances shall satisfactorily pass test series 8 of the Manual of Tests and Criteria, part I, section 18 and be approved by the competent authority.	3375

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						Limited quantities	Excepted quantities	Instructions	Provisions	Instructions	Provisions
(1)	(2) 3.1.2	(3) 2.0	(4) 2.0	(5) 2.0.1.3	(6) 3.3	(7a) 3.4	(7b) 3.5	(8) 4.1.4	(9) 4.1.4	(10) 4.1.4	(11) 4.1.4
3376	4-NITROPHENYLHYDRAZINE, with not less than 30% water, by mass	4.1	-	I	28	0	E0	P406	PP26 PP31	-	-
3377	SODIUM PERBORATE MONOHYDRATE	5.1	-	III	967	5 kg	E1	P002 LP02	-	IBC08	B3
3378	SODIUM CARBONATE PEROXYHYDRATE	5.1	-	II	-	1 kg	E2	P002	-	IBC08	B4 B21
3378	SODIUM CARBONATE PEROXYHYDRATE	5.1	-	III	967	5 kg	E1	P002 LP02	-	IBC08	B3
3379	DESENSITIZED EXPLOSIVE, LIQUID, N.O.S.	3	-	I	274 311	0	E0	P099	-	-	-
3380	DESENSITIZED EXPLOSIVE, SOLID, N.O.S.	4.1	-	I	274 311	0	E0	P099	-	-	-
3381	TOXIC BY INHALATION LIQUID, N.O.S. with an LC ₅₀ lower than or equal to 200 mL/m ³ and saturated vapour concentration greater than or equal to 500LC ₅₀	6.1	-	I	274	0	E0	P601	-	-	-
3382	TOXIC BY INHALATION LIQUID, N.O.S. with an LC ₅₀ lower than or equal to 1000 mL/m ³ and saturated vapour concentration greater than or equal to 10LC ₅₀	6.1	-	I	274	0	E0	P602	-	-	-
3383	TOXIC BY INHALATION LIQUID, FLAMMABLE, N.O.S. with an LC ₅₀ lower than or equal to 200 mL/m ³ and saturated vapour concentration greater than or equal to 500LC ₅₀	6.1	3	I	274	0	E0	P601	-	-	-
3384	TOXIC BY INHALATION LIQUID, FLAMMABLE, N.O.S. with an LC ₅₀ lower than or equal to 1000 mL/m ³ and saturated vapour concentration greater than or equal to 10LC ₅₀	6.1	3	I	274	0	E0	P602	-	-	-
3385	TOXIC BY INHALATION LIQUID, WATER-REACTIVE, N.O.S. with an LC ₅₀ lower than or equal to 200 mL/m ³ and saturated vapour concentration greater than or equal to 500LC ₅₀	6.1	4.3	I	274	0	E0	P601	-	-	-

(12)	Portable tanks and bulk containers		EmS	Stowage and handling	Segregation	Properties and observations	UN No.
	Tank instructions	Provisions					
(13) 4.2.5 4.3	(14) 4.2.5	(15) 5.4.3.2 7.8	(16a) 7.1 7.3-7.7	(16b) 7.2-7.7	(17)	(18)	
-	-	-	F-B, S-J	Category E	SG7 SG30	Desensitized explosive. Dark orange solid. Explosive and sensitive to friction in the dry state. May form extremely sensitive compounds with heavy metals or their salts. Harmful if swallowed or by skin contact.	3376
-	T1 BK2 BK3	TP33	F-A, S-Q	Category A SW1 SW23 H1	SG59	White crystals or powder. Partially soluble in water. Mixtures with combustible material are readily ignited and may burn fiercely. Risk of decomposition when exposed to continuous heat (exothermic decomposition ≥ 60°C). When involved in a fire or exposed to high temperatures, it may decompose, yielding oxygen and steam. Harmful if swallowed.	3377
-	T3 BK2	TP33	F-A, S-Q	Category A SW1 H1	SG59	White crystals or powder. Soluble in water. Mixtures with combustible material are readily ignited. Decomposes in contact with water and acids, forming hydrogen peroxide. Risk of decomposition when exposed to continuous heat (exothermic decomposition ≥ 60°C). When involved in a fire or exposed to high temperatures, it may decompose, yielding oxygen and steam. Irritating to eyes, skin and mucous membranes. Harmful if swallowed.	3378
-	T1 BK2 BK3	TP33	F-A, S-Q	Category A SW1 SW23 H1	SG59	See entry above.	3378
-	-	-	F-E, S-Y	Category D	SG30	Desensitized explosive. Explosive and sensitive to friction in the dry state. May form extremely sensitive compounds with heavy metals and their salts.	3379
-	-	-	F-B, S-J	Category D	SG7 SG30	Desensitized explosive. Explosive and sensitive to friction in the dry state. May form extremely sensitive compounds with heavy metals and their salts.	3380
-	T22	TP2 TP13	F-A, S-A	Category D SW2	-	A variety of toxic liquids which present a highly toxic inhalation hazard. Highly toxic if swallowed, by skin contact or by inhalation.	3381
-	T20	TP2 TP13	F-A, S-A	Category D SW2	-	A variety of toxic liquids which present a highly toxic inhalation hazard. Highly toxic if swallowed, by skin contact or by inhalation.	3382
-	T22	TP2 TP13	F-E, S-D	Category D SW2	-	A variety of toxic liquids which present a highly toxic inhalation hazard as well as being flammable. Highly toxic if swallowed, by skin contact or by inhalation.	3383
-	T20	TP2 TP13	F-E, S-D	Category D SW2	-	A variety of toxic liquids which present a highly toxic inhalation hazard as well as being flammable. Highly toxic if swallowed, by skin contact or by inhalation.	3384
-	T22	TP2 TP13	F-G, S-N	Category D SW2 H1	SG26	A variety of toxic liquids which present a highly toxic inhalation hazard as well as being water-reactive. Highly toxic if swallowed, by skin contact or by inhalation.	3385

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						Limited quantities	Excepted quantities	Instructions	Provisions	Instructions	Provisions
(1)	(2) 3.1.2	(3) 2.0	(4) 2.0	(5) 2.0.1.3	(6) 3.3	(7a) 3.4	(7b) 3.5	(8) 4.1.4	(9) 4.1.4	(10) 4.1.4	(11) 4.1.4
3386	TOXIC BY INHALATION LIQUID, WATER-REACTIVE, N.O.S. with an LC ₅₀ lower than or equal to 1000 mL/m ³ and saturated vapour concentration greater than or equal to 10LC ₅₀	6.1	4.3	I	274	0	E0	P602	-	-	-
3387	TOXIC BY INHALATION LIQUID, OXIDIZING, N.O.S. with an LC ₅₀ lower than or equal to 200 mL/m ³ and saturated vapour concentration greater than or equal to 500LC ₅₀	6.1	5.1	I	274	0	E0	P601	-	-	-
3388	TOXIC BY INHALATION LIQUID, OXIDIZING, N.O.S. with an LC ₅₀ lower than or equal to 1000 mL/m ³ and saturated vapour concentration greater than or equal to 10LC ₅₀	6.1	5.1	I	274	0	E0	P602	-	-	-
3389	TOXIC BY INHALATION LIQUID, CORROSIVE, N.O.S. with an LC ₅₀ lower than or equal to 200 mL/m ³ and saturated vapour concentration greater than or equal to 500LC ₅₀	6.1	8	I	274	0	E0	P601	-	-	-
3390	TOXIC BY INHALATION LIQUID, CORROSIVE, N.O.S. with an LC ₅₀ lower than or equal to 1000 mL/m ³ and saturated vapour concentration greater than or equal to 10LC ₅₀	6.1	8	I	274	0	E0	P602	-	-	-
3391	ORGANOMETALLIC SUBSTANCE, SOLID, PYROPHORIC	4.2	-	I	274	0	E0	P404	PP86	-	-
3392	ORGANOMETALLIC SUBSTANCE, LIQUID, PYROPHORIC	4.2	-	I	274	0	E0	P400	PP86	-	-
3393	ORGANOMETALLIC SUBSTANCE, SOLID, PYROPHORIC, WATER-REACTIVE	4.2	4.3	I	274	0	E0	P404	PP86	-	-
3394	ORGANOMETALLIC SUBSTANCE, LIQUID, PYROPHORIC, WATER-REACTIVE	4.2	4.3	I	274	0	E0	P400	PP86	-	-
3395	ORGANOMETALLIC SUBSTANCE, SOLID, WATER-REACTIVE	4.3	-	I	274	0	E0	P403	PP31	-	-
3395	ORGANOMETALLIC SUBSTANCE, SOLID, WATER-REACTIVE	4.3	-	II	274	500 g	E2	P410	PP31	IBC04	-
3395	ORGANOMETALLIC SUBSTANCE, SOLID, WATER-REACTIVE	4.3	-	III	223 274	1 kg	E1	P410	PP31	IBC06	-
3396	ORGANOMETALLIC SUBSTANCE, SOLID, WATER-REACTIVE, FLAMMABLE	4.3	4.1	I	274	0	E0	P403	PP31	-	-

UN No.	Portable tanks and bulk containers		EmS	Stowage and handling	Segregation	Properties and observations	UN No.
	Tank instructions	Provisions					
(12)	(13) 4.2.5 4.3	(14) 4.2.5	(15) 5.4.3.2 7.8	(16a) 7.1 7.3-7.7	(16b) 7.2-7.7	(17)	(18)
-	T20	TP2 TP13	F-G, S-N	Category D SW2 H1	SG26	A variety of toxic liquids which present a highly toxic inhalation hazard as well as being water-reactive. Highly toxic if swallowed, by skin contact or by inhalation.	3386
-	T22	TP2 TP13	F-A, S-Q	Category D SW2	-	A variety of toxic liquids which present a highly toxic inhalation hazard as well as being an oxidizer. Highly toxic if swallowed, by skin contact or by inhalation.	3387
-	T20	TP2 TP13	F-A, S-Q	Category D SW2	-	A variety of toxic liquids which present a highly toxic inhalation hazard as well as being an oxidizer. Highly toxic if swallowed, by skin contact or by inhalation.	3388
-	T22	TP2 TP13	F-A, S-B	Category D SW2	-	See entry above.	3389
-	T20	TP2 TP13	F-A, S-B	Category D SW2	-	A variety of toxic liquids which present a highly toxic inhalation hazard as well as being corrosive. Highly toxic if swallowed, by skin contact or by inhalation.	3390
-	T21	TP7 TP33 TP36	F-G, S-M	Category D H1	SG26	Liable to ignite spontaneously in air. If shaken, may produce sparks.	3391
-	T21	TP2 TP7 TP36	F-G, S-M	Category D H1	SG26 SG63	Highly flammable liquid. Liable to ignite spontaneously in air. In contact with air, evolve irritating and slightly toxic fumes.	3392
-	T21	TP7 TP33 TP36 TP41	F-G, S-M	Category D H1	SG26 SG35	Liable to ignite spontaneously in air. If shaken, may produce sparks. React violently with moisture, water and acids, evolving flammable gas.	3393
-	T21	TP2 TP7 TP36 TP41	F-G, S-M	Category D H1	SG26 SG35 SG63	Highly flammable liquid. Liable to ignite spontaneously in air. In contact with air, evolve irritating and slightly toxic fumes. React violently with moisture, water and acids, evolving flammable gas.	3394
-	T9	TP7 TP33 TP36 TP41	F-G, S-N	Category E SW2 H1	SG26 SG35	Reacts violently with moisture, water and acids, evolving flammable gas.	3395
-	T3	TP33 TP36 TP41	F-G, S-N	Category E SW2 H1	SG26 SG35	See entry above.	3395
-	T1	TP33 TP36 TP41	F-G, S-N	Category E SW2 H1	SG26 SG35	See entry above.	3395
-	T9	TP7 TP33 TP36 TP41	F-G, S-N	Category E SW2 H1	SG26 SG35	Flammable solid. Reacts violently with moisture, water and acids, evolving flammable gas.	3396

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UN No.	Proper shipping name (PSN)	Class or division	Subsidiary risk(s)	Packing group	Special provisions	Limited and excepted quantity provisions		Packing		IBC	
						Limited quantities	Excepted quantities	Instructions	Provisions	Instructions	Provisions
(1)	(2) 3.1.2	(3) 2.0	(4) 2.0	(5) 2.0.1.3	(6) 3.3	(7a) 3.4	(7b) 3.5	(8) 4.1.4	(9) 4.1.4	(10) 4.1.4	(11) 4.1.4
3396	ORGANOMETALLIC SUBSTANCE, SOLID, WATER-REACTIVE, FLAMMABLE	4.3	4.1	II	274	500 g	E2	P410	PP31	IBC04	-
3396	ORGANOMETALLIC SUBSTANCE, SOLID, WATER-REACTIVE, FLAMMABLE	4.3	4.1	III	223 274	1 kg	E1	P410	PP31	IBC06	-
3397	ORGANOMETALLIC SUBSTANCE, SOLID, WATER-REACTIVE, SELF-HEATING	4.3	4.2	I	274	0	E0	P403	PP31	-	-
3397	ORGANOMETALLIC SUBSTANCE, SOLID, WATER-REACTIVE, SELF-HEATING	4.3	4.2	II	274	500 g	E2	P410	PP31	IBC04	-
3397	ORGANOMETALLIC SUBSTANCE, SOLID, WATER-REACTIVE, SELF-HEATING	4.3	4.2	III	223 274	1 kg	E1	P410	PP31	IBC06	-
3398	ORGANOMETALLIC SUBSTANCE, LIQUID, WATER-REACTIVE	4.3	-	I	274	0	E0	P402	PP31	-	-
3398	ORGANOMETALLIC SUBSTANCE, LIQUID, WATER-REACTIVE	4.3	-	II	274	500 mL	E2	P001	PP31	IBC01	-
3398	ORGANOMETALLIC SUBSTANCE, LIQUID, WATER-REACTIVE	4.3	-	III	223 274	1 L	E1	P001	PP31	IBC02	-
3399	ORGANOMETALLIC SUBSTANCE, LIQUID, WATER-REACTIVE, FLAMMABLE	4.3	3	I	274	0	E0	P402	PP31	-	-
3399	ORGANOMETALLIC SUBSTANCE, LIQUID, WATER-REACTIVE, FLAMMABLE	4.3	3	II	274	500 mL	E2	P001	PP31	IBC01	-
3399	ORGANOMETALLIC SUBSTANCE, LIQUID, WATER-REACTIVE, FLAMMABLE	4.3	3	III	223 274	1 L	E1	P001	PP31	IBC02	-
3400	ORGANOMETALLIC SUBSTANCE, SOLID, SELF-HEATING	4.2	-	II	274	500 g	E2	P410	-	IBC06	-
3400	ORGANOMETALLIC SUBSTANCE, SOLID, SELF-HEATING	4.2	-	III	223 274	1 kg	E1	P002	-	IBC08	-
3401	ALKALI METAL AMALGAM, SOLID	4.3	-	I	182	0	E0	P403	PP31	-	-
3402	ALKALINE EARTH METAL AMALGAM, SOLID	4.3	-	I	183	0	E0	P403	PP31	-	-
3403	POTASSIUM METAL ALLOYS, SOLID	4.3	-	I	-	0	E0	P403	PP31	-	-

(12)	Portable tanks and bulk containers		EmS	Stowage and handling	Segregation	Properties and observations	UN No.
	Tank instructions	Provisions					
(13) 4.2.5 4.3	(14) 4.2.5	(15) 5.4.3.2 7.8	(16a) 7.1 7.3-7.7	(16b) 7.2-7.7	(17)	(18)	
-	T3	TP33 TP36 TP41	F-G, S-N	Category E SW2 H1	SG26 SG35	Flammable solid. Reacts violently with moisture, water and acids, evolving flammable gas.	3396
-	T1	TP33 TP36 TP41	F-G, S-N	Category E SW2 H1	SG26 SG35	See entry above.	3396
-	T9	TP7 TP33 TP36 TP41	F-G, S-N	Category E SW2 H1	SG26 SG35	Liable to self-heating or spontaneous combustion. Reacts violently with moisture, water and acids, evolving flammable gas.	3397
-	T3	TP33 TP36 TP41	F-G, S-N	Category E SW2 H1	SG26 SG35	See entry above.	3397
-	T1	TP33 TP36 TP41	F-G, S-N	Category E SW2 H1	SG26 SG35	See entry above.	3397
-	T13	TP2 TP7 TP36 TP41	F-G, S-N	Category E SW2 H1	SG26 SG35	Reacts violently with moisture, water and acids, evolving flammable gas.	3398
-	T7	TP2 TP7 TP36 TP41	F-G, S-N	Category E SW2 H1	SG26 SG35	See entry above.	3398
-	T7	TP2 TP7 TP36 TP41	F-G, S-N	Category E SW2 H1	SG26 SG35	See entry above.	3398
-	T13	TP2 TP7 TP36 TP41	F-G, S-N	Category D SW2 H1	SG26 SG35	Flammable liquid. Reacts violently with moisture, water and acids, evolving flammable gas.	3399
-	T7	TP2 TP7 TP36 TP41	F-G, S-N	Category D SW2 H1	SG26 SG35	See entry above.	3399
-	T7	TP2 TP7 TP36 TP41	F-G, S-N	Category E SW2 H1	SG26 SG35	See entry above.	3399
-	T3	TP33 TP36	F-A, S-J	Category C	-	Liable to self-heating or spontaneous combustion.	3400
-	T1	TP33 TP36	F-A, S-J	Category C	-	See entry above.	3400
-	T9	TP7 TP33	F-G, S-N	Category D H1	SG26 SG35	Silvery solid, consisting of metal alloyed with mercury. Reacts with moisture, water or acids, evolving hydrogen, a flammable gas. When heated, evolves toxic vapours.	3401
-	T9	TP7 TP33	F-G, S-N	Category D H1	SG26 SG35	Consists of metal alloyed with mercury. Contains 2% to 10% alkaline earth metals and may contain up to 98% mercury. Reacts with moisture, water or acids, evolving hydrogen, a flammable gas. When heated, evolves toxic vapours.	3402
-	T9	TP7 TP33	F-G, S-L	Category D H1	SG26 SG35	Soft, silvery metal. Floats on water. Reacts violently with moisture, water or acids, evolving hydrogen, which may be ignited by the heat of the reaction. Highly reactive, sometimes with explosive effect.	3403

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UN No.	Proper shipping name (PSN)	Class or division	Subsidiary risk(s)	Packing group	Special provisions	Limited and excepted quantity provisions		Packing		IBC	
						Limited quantities	Excepted quantities	Instructions	Provisions	Instructions	Provisions
(1)	(2)	(3)	(4)	(5)	(6)	(7a)	(7b)	(8)	(9)	(10)	(11)
	3.1.2	2.0	2.0	2.0.1.3	3.3	3.4	3.5	4.1.4	4.1.4	4.1.4	4.1.4
3404	POTASSIUM SODIUM ALLOYS, SOLID	4.3	-	I	-	0	E0	P403	PP31	-	-
3405	BARIUM CHLORATE SOLUTION	5.1	6.1	II	-	1 L	E2	P504	-	IBC02	-
3405	BARIUM CHLORATE SOLUTION	5.1	6.1	III	223	5 L	E1	P001	-	IBC02	-
3406	BARIUM PERCHLORATE SOLUTION	5.1	6.1	II	-	1 L	E2	P504	-	IBC02	-
3406	BARIUM PERCHLORATE SOLUTION	5.1	6.1	III	223	5 L	E1	P001	-	IBC02	-
3407	CHLORATE AND MAGNESIUM CHLORIDE MIXTURE SOLUTION	5.1	-	II	-	1 L	E2	P504	-	IBC02	-
3407	CHLORATE AND MAGNESIUM CHLORIDE MIXTURE SOLUTION	5.1	-	III	223	5 L	E1	P504	-	IBC02	-
3408	LEAD PERCHLORATE SOLUTION	5.1	6.1 P	II	-	1 L	E2	P504	-	IBC02	-
3408	LEAD PERCHLORATE SOLUTION	5.1	6.1 P	III	223	5 L	E1	P001	-	IBC02	-
3409	CHLORONITROBENZENES, LIQUID	6.1	-	II	279	100 mL	E4	P001	-	IBC02	-
3410	4-CHLORO- <i>o</i> -TOLUIDINE HYDROCHLORIDE SOLUTION	6.1	-	III	223	5 L	E1	P001	-	IBC03	-
3411	<i>beta</i> -NAPHTHYLAMINE SOLUTION	6.1	-	II	-	100 mL	E4	P001	-	IBC02	-

UN No.	Portable tanks and bulk containers		EmS	Stowage and handling	Segregation	Properties and observations	UN No.
	Tank instructions	Provisions					
(12)	(13)	(14)	(15)	(16a)	(16b)	(17)	(18)
	4.2.5	4.2.5	5.4.3.2	7.1	7.2-7.7		
	4.3		7.8	7.3-7.7			
-	T9	TP7 TP33	F-G, S-L	Category D H1	SG26 SG35	Soft, silvery metal. Floats on water. Reacts violently with moisture, water or acids, evolving hydrogen, which may be ignited by the heat of the reaction. Highly reactive, sometimes with explosive effect.	3404
-	T4	TP1	F-H, S-Q	Category A	SG38 SG49 SG62	Colourless aqueous solution. Reacts vigorously with sulphuric acid. Reacts fiercely with cyanides when heated. May form explosive mixtures with combustible material, powdered metals or ammonium compounds. These mixtures are liable to ignite. When involved in a fire, may cause an explosion. Toxic if swallowed, by skin contact or by inhalation. Leakage and subsequent evaporation of the water from the solutions may present increased dangers as follows: .1 in contact with combustible material (particularly fibrous material such as jute, cotton or sisal) or sulphur, danger of spontaneous combustion, .2 in contact with ammonium compounds, powdered metals or oils, danger of explosion.	3405
-	T4	TP1	F-H, S-Q	Category A	SG38 SG49 SG62	See entry above.	3405
-	T4	TP1	F-H, S-Q	Category A	SG38 SG49 SG62	Reacts vigorously with sulphuric acid. Reacts fiercely with cyanides when heated. May form explosive mixtures with combustible material, powdered metals or ammonium compounds. These mixtures are liable to ignite. When involved in a fire, may cause an explosion. Toxic if swallowed, by skin contact or by inhalation. Leakage and subsequent evaporation of the water from the solutions may present increased dangers as follows: .1 in contact with combustible material (particularly fibrous material such as jute, cotton or sisal) or sulphur, danger of spontaneous combustion, .2 in contact with ammonium compounds, powdered metals or oils, danger of explosion.	3406
-	T4	TP1	F-H, S-Q	Category A	SG38 SG49 SG62	See entry above.	3406
-	T4	TP1	F-H, S-Q	Category A	SG38 SG49 SG62	Reacts vigorously with sulphuric acid. Reacts fiercely with cyanides when heated. May form explosive mixtures with combustible material, powdered metals or ammonium compounds. These mixtures are liable to ignite. When involved in a fire, may cause an explosion. Leakage and subsequent evaporation of the water from the solutions may present increased dangers as follows: .1 in contact with combustible material (particularly fibrous material such as jute, cotton or sisal) or sulphur, danger of spontaneous combustion, .2 in contact with ammonium compounds, powdered metals or oils, danger of explosion.	3407
-	T4	TP1	F-H, S-Q	Category A	SG38 SG49 SG62	See entry above.	3407
-	T4	TP1	F-H, S-Q	Category A	SG38 SG49	Reacts vigorously with sulphuric acid. Reacts fiercely with cyanides when heated. May form explosive mixtures with combustible material, powdered metals or ammonium compounds. These mixtures are liable to ignite. When involved in a fire, may cause an explosion.	3408
-	T4	TP1	F-H, S-Q	Category A	SG38 SG49	See entry above.	3408
-	T7	TP2	F-A, S-A	Category A	-	Yellow liquid. Toxic if swallowed, by skin contact or by inhalation.	3409
-	T4	TP1	F-A, S-A	Category A	-	Toxic if swallowed, by skin contact or by inhalation.	3410
-	T7	TP2	F-A, S-A	Category A	-	Toxic if swallowed, by skin contact or by inhalation.	3411

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						Limited quantities	Excepted quantities	Instructions	Provisions	Instructions	Provisions
(1)	(2) 3.1.2	(3) 2.0	(4) 2.0	(5) 2.0.1.3	(6) 3.3	(7a) 3.4	(7b) 3.5	(8) 4.1.4	(9) 4.1.4	(10) 4.1.4	(11) 4.1.4
3411	beta-NAPHTHYLAMINE SOLUTION	6.1	–	III	223	5 L	E1	P001	–	IBC02	–
3412	FORMIC ACID with not less than 10% but not more than 85% acid by mass	8	–	II	–	1 L	E2	P001	–	IBC02	–
3412	FORMIC ACID with not less than 5% but less than 10% acid by mass	8	–	III	–	5 L	E1	P001 LP01	–	IBC03	–
3413	POTASSIUM CYANIDE SOLUTION	6.1	– P	I	–	0	E5	P001	PP31	–	–
3413	POTASSIUM CYANIDE SOLUTION	6.1	– P	II	–	100 mL	E4	P001	PP31	IBC02	–
3413	POTASSIUM CYANIDE SOLUTION	6.1	– P	III	223	5 L	E1	P001 LP01	PP31	IBC03	–
3414	SODIUM CYANIDE SOLUTION	6.1	– P	I	–	0	E5	P001	PP31	–	–
3414	SODIUM CYANIDE SOLUTION	6.1	– P	II	–	100 mL	E4	P001	PP31	IBC02	–
3414	SODIUM CYANIDE SOLUTION	6.1	– P	III	223	5 L	E1	P001 LP01	PP31	IBC03	–
3415	SODIUM FLUORIDE SOLUTION	6.1	–	III	223	5 L	E1	P001 LP01	–	IBC03	–
3416	CHLOROACETOPHENONE, LIQUID	6.1	–	II	–	0	E0	P001	–	IBC02	–
3417	XYLYL BROMIDE, SOLID	6.1	–	II	–	0	E4	P002	–	IBC08	B4 B21
3418	2,4-TOLUYLENEDIAMINE SOLUTION	6.1	–	III	223	5 L	E1	P001 LP01	–	IBC03	–
3419	BORON TRIFLUORIDE ACETIC ACID COMPLEX, SOLID	8	–	II	–	1 kg	E2	P002	–	IBC08	B4 B21
3420	BORON TRIFLUORIDE PROPIONIC ACID COMPLEX, SOLID	8	–	II	–	1 kg	E2	P002	–	IBC08	B4 B21
3421	POTASSIUM HYDROGEN DIFLUORIDE SOLUTION	8	6.1	II	–	1 L	E2	P001	–	IBC02	–
3421	POTASSIUM HYDROGEN DIFLUORIDE SOLUTION	8	6.1	III	223	5 L	E1	P001	–	IBC03	–
3422	POTASSIUM FLUORIDE SOLUTION	6.1	–	III	223	5 L	E1	P001 LP01	–	IBC03	–
3423	TETRAMETHYLAMMONIUM HYDROXIDE, SOLID	8	–	II	–	1 kg	E2	P002	–	IBC08	B4 B21

UN No.	Portable tanks and bulk containers		EmS	Stowage and handling	Segregation	Properties and observations	UN No.
	Tank instructions	Provisions					
(12)	(13) 4.2.5 4.3	(14) 4.2.5	(15) 5.4.3.2 7.8	(16a) 7.1 7.3–7.7	(16b) 7.2–7.7	(17)	(18)
–	T7	TP2	F-A, S-A	Category A	–	Toxic if swallowed, by skin contact or by inhalation.	3411
–	T7	TP2	F-A, S-B	Category A SW2	–	Colourless liquid with a pungent odour. Corrosive to most metals. Causes burns to skin, eyes and mucous membranes.	3412
–	T4	TP1	F-A, S-B	Category A SW2	–	See entry above.	3412
–	T14	TP2 TP13	F-A, S-A	Category B	SG35	Reacts with acids or acid fumes, evolving hydrogen cyanide, a highly toxic and flammable gas. Highly toxic if swallowed or by skin contact.	3413
–	T11	TP2 TP13 TP27	F-A, S-A	Category B	SG35	See entry above.	3413
–	T7	TP2 TP13 TP28	F-A, S-A	Category A	SG35	See entry above.	3413
–	T14	TP2 TP13	F-A, S-A	Category B	SG35	Reacts with acids or acid fumes, evolving hydrogen cyanide, a highly toxic and flammable gas. Highly toxic if swallowed or by skin contact.	3414
–	T11	TP2 TP13 TP27	F-A, S-A	Category B	SG35	See entry above.	3414
–	T7	TP2 TP13 TP28	F-A, S-A	Category A	SG35	See entry above.	3414
–	T4	TP1	F-A, S-A	Category A	SG35	Colourless liquid. Reacts with acids, evolving hydrogen fluoride, a toxic, irritating and corrosive gas, apparent as white fumes. Toxic if swallowed, by skin contact or by inhalation.	3415
–	T7	TP2 TP13	F-A, S-A	Category D SW1 SW2 H2	–	Liquid evolving irritating vapour ("Tear Gas"). Toxic if swallowed, by skin contact or by inhalation.	3416
–	T3	TP33	F-A, S-G	Category D SW2	–	Crystals or powder, evolving irritating vapour ("Tear Gas"). Toxic if swallowed, by skin contact or by inhalation.	3417
–	T4	TP1	F-A, S-A	Category A	–	Toxic if swallowed, by skin contact or by inhalation.	3418
–	T3	TP33	F-A, S-B	Category A	–	White crystalline solid. Melting point: 23°C. Highly corrosive to most metals. Causes burns to skin, eyes and mucous membranes.	3419
–	T3	TP33	F-A, S-B	Category A	–	White crystalline solid. Melting point: 28°C. Highly corrosive to most metals. Causes burns to skin, eyes and mucous membranes.	3420
–	T7	TP2	F-A, S-B	Category A SW1 SW2	SG35	Decomposed by heat or acids, evolving hydrogen fluoride, a toxic, extremely irritating and corrosive gas apparent as white fumes. In the presence of moisture, highly corrosive to glass, other siliceous materials and most metals. Toxic if swallowed, by skin contact or by inhalation. Causes burns to skin, eyes and mucous membranes.	3421
–	T4	TP1	F-A, S-B	Category A SW1 SW2	SG35	See entry above.	3421
–	T4	TP1	F-A, S-A	Category A	SG35	Decomposed by acids, evolving hydrogen fluoride, an irritating and corrosive gas. Toxic if swallowed, by skin contact or by inhalation.	3422
–	T3	TP33	F-A, S-B	Category A	SG35	Very soluble in water. Reacts violently with acids.	3423

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						Limited quantities	Excepted quantities	Instructions	Provisions	Instructions	Provisions
(1)	(2) 3.1.2	(3) 2.0	(4) 2.0	(5) 2.0.1.3	(6) 3.3	(7a) 3.4	(7b) 3.5	(8) 4.1.4	(9) 4.1.4	(10) 4.1.4	(11) 4.1.4
3424	AMMONIUM DINITRO- <i>o</i> -CRESOLATE SOLUTION	6.1	- P	II	-	100 mL	E4	P001	-	IBC02	-
3424	AMMONIUM DINITRO- <i>o</i> -CRESOLATE SOLUTION	6.1	- P	III	223	5 L	E1	P001	-	IBC02	-
3425	BROMOACETIC ACID, SOLID	8	-	II	-	1 kg	E2	P002	-	IBC08	B4 B21
3426	ACRYLAMIDE SOLUTION	6.1	-	III	223	5 L	E1	P001 LP01	-	IBC03	-
3427	CHLOROBENZYL CHLORIDES, SOLID	6.1	- P	III	-	5 kg	E1	P002 LP02	-	IBC08	B3
3428	3-CHLORO-4-METHYLPHENYL ISOCYANATE, SOLID	6.1	-	II	-	500 g	E4	P002	-	IBC08	B4 B21
3429	CHLOROTOLUIDINES, LIQUID	6.1	-	III	-	5 L	E1	P001 LP01	-	IBC03	-
3430	XYLENOLS, LIQUID	6.1	-	II	-	100 mL	E4	P001	-	IBC02	-
3431	NITROBENZOTRIFLUORIDES, SOLID	6.1	- P	II	-	500 g	E4	P002	-	IBC08	B4 B21
3432	POLYCHLORINATED BIPHENYLS, SOLID	9	- P	II	305 958	1 kg	E2	P906	-	IBC08	B4 B21
3434	NITROCRESOLS, LIQUID	6.1	-	III	-	5 L	E1	P001 LP01	-	IBC03	-
3436	HEXAFLUOROACETONE HYDRATE, SOLID	6.1	-	II	-	500 g	E4	P002	-	IBC08	B4 B21
3437	CHLOROCRESOLS, SOLID	6.1	-	II	-	500 g	E4	P002	-	IBC08	B4 B21
3438	<i>alpha</i> -METHYLBENZYL ALCOHOL, SOLID	6.1	-	III	-	5 kg	E1	P002 LP02	-	IBC08	B3
3439	NITRILES, SOLID, TOXIC, N.O.S.	6.1	-	I	274	0	E5	P002	-	IBC07	B1
3439	NITRILES, SOLID, TOXIC, N.O.S.	6.1	-	II	274	500 g	E4	P002	-	IBC08	B4 B21
3439	NITRILES, SOLID, TOXIC, N.O.S.	6.1	-	III	223 274	5 kg	E1	P002 LP02	-	IBC08	B3
3440	SELENIUM COMPOUND, LIQUID, N.O.S.	6.1	-	I	274	0	E5	P001	-	-	-
3440	SELENIUM COMPOUND, LIQUID, N.O.S.	6.1	-	II	274	100 mL	E4	P001	-	IBC02	-

UN No.	Portable tanks and bulk containers		EmS	Stowage and handling	Segregation	Properties and observations	UN No.
	Tank instructions	Provisions					
(12)	(13) 4.2.5 4.3	(14) 4.2.5	(15) 5.4.3.2 7.8	(16a) 7.1 7.3-7.7	(16b) 7.2-7.7	(17)	(18)
-	T7	TP2	F-A, S-A	Category B	SG15 SG16 SG30 SG63	The commercial product is a 50% suspension in water. May support combustion and burn without oxygen. When involved in a fire, evolves toxic fumes. Forms extremely sensitive explosive compounds with lead, silver or other heavy metals and their compounds. Toxic if swallowed, by skin contact or by inhalation.	3424
-	T7	TP2	F-A, S-A	Category A	SG15 SG16 SG30 SG63	See entry above.	3424
-	T3	TP33	F-A, S-B	Category A	-	Colourless, deliquescent crystals. Melting point: 51°C. Corrosive to most metals. Harmful if swallowed. Causes burns to eyes and skin.	3425
-	T4	TP1	F-A, S-A	Category A SW1 H2	-	Toxic if swallowed, by skin contact or by inhalation.	3426
-	T1	TP33	F-A, S-A	Category A	-	Colourless crystalline solid. Melting point: 29°C. Immiscible with or insoluble in water. Toxic if swallowed, by skin contact or by inhalation.	3427
-	T3	TP33	F-A, S-A	Category B SW2	-	Colourless solid with a pungent odour. Melting point: 23°C. Insoluble in water. Reacts with water, evolving carbon dioxide. Toxic if swallowed, by skin contact or by inhalation. Irritating to skin, eyes and mucous membranes.	3428
-	T4	TP1	F-A, S-A	Category A	-	Brown liquid. Toxic if swallowed, by skin contact or by inhalation.	3429
-	T7	TP2	F-A, S-A	Category A	-	The commercial products are liquids with a pungent tar odour. Toxic if swallowed, by skin contact or by inhalation.	3430
-	T3	TP33	F-A, S-A	Category A SW2	-	Low melting point (31°C to 32°C) solids with an aromatic odour. Insoluble in water. Toxic if swallowed, by skin contact or by inhalation.	3431
-	T3	TP33	F-A, S-A	Category A	SG50	Solids with perceptible odour. Insoluble in water. Harmful by ingestion or by skin contact. If spilled, can be a persistent hazard to the environment. This entry also covers articles, such as rags, cotton waste, clothing or sawdust, containing polychlorinated biphenyls where no free visible liquid is present.	3432
-	T4	TP1	F-A, S-A	Category A	-	Slightly miscible in water. Toxic if swallowed, by skin contact or by inhalation.	3434
-	T3	TP33	F-A, S-A	Category B SW2	-	This entry covers solid hydrate and hexafluoroacetone. Melting point of the pure substance: 23°C. Toxic if swallowed, by skin contact or by inhalation.	3436
-	T3	TP33	F-A, S-A	Category A SW1 H2	-	White or pink crystals with a phenol-like odour. Melting point: 45°C to 68°C. Slightly soluble in water. Decomposes when heated, evolving extremely toxic fumes (phosgene). Toxic if swallowed, by skin contact or by inhalation.	3437
-	T1	TP33	F-A, S-A	Category A	-	Slightly soluble in water. Melting point: 21°C (pure substance). Toxic if swallowed, by skin contact or by inhalation.	3438
-	T6	TP33	F-A, S-A	Category B	SG35	Solid, evolving toxic vapours. Reacts with acids or acid fumes, evolving hydrogen cyanide, a highly toxic and flammable gas. Soluble in water. Toxic if swallowed, by skin contact or by inhalation.	3439
-	T3	TP33	F-A, S-A	Category B	SG35	See entry above.	3439
-	T1	TP33	F-A, S-A	Category A	SG35	See entry above.	3439
-	T14	TP2 TP27	F-A, S-A	Category B	-	Toxic if swallowed, by skin contact or by inhalation.	3440
-	T11	TP2 TP27	F-A, S-A	Category B	-	See entry above.	3440

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						Limited quantities	Excepted quantities	Instructions	Provisions	Instructions	Provisions
(1)	(2) 3.1.2	(3) 2.0	(4) 2.0	(5) 2.0.1.3	(6) 3.3	(7a) 3.4	(7b) 3.5	(8) 4.1.4	(9) 4.1.4	(10) 4.1.4	(11) 4.1.4
3440	SELENIUM COMPOUND, LIQUID, N.O.S.	6.1	–	III	223 274	5 L	E1	P001	–	IBC03	–
3441	CHLORODINITROBENZENES, SOLID	6.1	– P	II	279	500 g	E4	P002	–	IBC08	B4 B21
3442	DICHLOROANILINES, SOLID	6.1	– P	II	279	500 g	E4	P002	–	IBC08	B4 B21
3443	DINITROBENZENES, SOLID	6.1	–	II	–	500 g	E4	P002	–	IBC08	B4 B21
3444	NICOTINE HYDROCHLORIDE, SOLID	6.1	–	II	43	500 g	E4	P002	–	IBC08	B4 B21
3445	NICOTINE SULPHATE, SOLID	6.1	–	II	–	500 g	E4	P002	–	IBC08	B4 B21
3446	NITROTOLUENES, SOLID	6.1	–	II	–	500 g	E4	P002	–	IBC08	B4 B21
3447	NITROXYLENES, SOLID	6.1	–	II	–	500 g	E4	P002	–	IBC08	B4 B21
3448	TEAR GAS SUBSTANCE, SOLID, N.O.S.	6.1	–	I	274	0	E0	P002	PP31	–	–
3448	TEAR GAS SUBSTANCE, SOLID, N.O.S.	6.1	–	II	274	0	E0	P002	PP31	IBC08	B4 B21
3449	BROMOBENZYL CYANIDES, SOLID	6.1	–	I	138	0	E5	P002	PP31	–	–
3450	DIPHENYLCHLOROARSINE, SOLID	6.1	– P	I	–	0	E0	P002	PP31	IBC07	B1
3451	TOLUIDINES, SOLID	6.1	– P	II	279	500 g	E4	P002	–	IBC08	B4 B21
3452	XYLIDINES, SOLID	6.1	–	II	–	500 g	E4	P002	–	IBC08	B4 B21
3453	PHOSPHORIC ACID, SOLID	8	–	III	–	5 kg	E1	P002 LP02	–	IBC08	B3
3454	DINITROTOLUENES, SOLID	6.1	– P	II	–	500 g	E4	P002	–	IBC08	B4 B21
3455	CRESOLS, SOLID	6.1	8	II	–	500 g	E4	P002	–	IBC08	B4 B21
3456	NITROSYLSULPHURIC ACID, SOLID	8	–	II	–	1 kg	E2	P002	–	IBC08	B4 B21
3457	CHLORONITROTOLUENES, SOLID	6.1	– P	III	–	5 kg	E1	P002 LP02	–	IBC08	B3
3458	NITROANISOLES, SOLID	6.1	–	III	279	5 kg	E1	P002 LP02	–	IBC08	B3

UN No.	Portable tanks and bulk containers		EmS	Stowage and handling	Segregation	Properties and observations	UN No.
	Tank instructions	Provisions					
(12)	(13) 4.2.5 4.3	(14) 4.2.5	(15) 5.4.3.2 7.8	(16a) 7.1 7.3–7.7	(16b) 7.2–7.7	(17)	(18)
–	T7	TP1 TP28	F-A, S-A	Category A	–	Toxic if swallowed, by skin contact or by inhalation.	3440
–	T3	TP33	F-A, S-A	Category A	SG15	Crystals. Melting point: 27°C to 53°C. May explode if involved in a fire. Toxic if swallowed, by skin contact or by inhalation.	3441
–	T3	TP33	F-A, S-A	Category A SW2	–	Solid with a penetrating odour. Liquid mixtures of various isomers of dichloroanilines, some of which in the pure state may be solid, with a melting point varying from 24°C to 72°C. Toxic if swallowed, by skin contact or by inhalation.	3442
–	T3	TP33	F-A, S-A	Category A	SG15	May explode if involved in a fire. Toxic if swallowed, by skin contact or by inhalation.	3443
–	T3	TP33	F-A, S-A	Category A	–	Deliquescent crystals or solids or pastes. Soluble in water. Toxic if swallowed, by skin contact or by inhalation.	3444
–	T3	TP33	F-A, S-A	Category A	–	Solid or paste. Soluble in water. Toxic if swallowed, by skin contact or by inhalation.	3445
–	T3	TP33	F-A, S-A	Category A	–	Yellow solid. Melting point: <i>para</i> -NITROTOLUENE: 52°C to 54°C. Toxic if swallowed, by skin contact or by inhalation.	3446
–	T3	TP33	F-A, S-A	Category A	–	Yellow solid. Melting points: 4-NITRO-2-XYLENE: 29°C to 31°C, 5-NITRO-3-XYLENE: 72°C to 74°C. Insoluble in water. Toxic if swallowed, by skin contact or by inhalation.	3447
–	T6	TP33	F-A, S-A	Category D SW2	–	“Tear gas substance” is a generic term for substances which, in minute quantities dispersed in air, cause extreme eye irritation and profuse tears. Toxic if swallowed, by skin contact or by inhalation.	3448
–	T3	TP33	F-A, S-A	Category D SW2	–	See entry above.	3448
–	T6	TP33	F-A, S-A	Category D SW1 SW2 H2	SG35	Volatile, yellow crystals evolving irritating vapours (“Tear Gas”). Melting point: <i>meta</i> -BROMOBENZYL CYANIDE 25°C. Highly toxic if swallowed, by skin contact or by inhalation.	3449
–	T6	TP33	F-A, S-A	Category D SW2	–	When pure, volatile, colourless crystals evolving an irritating vapour (“Tear Gas”). Melting point: 41°C. Highly toxic if swallowed, by skin contact or by inhalation.	3450
–	T3	TP33	F-A, S-A	Category A	–	<i>para</i> -TOLUIDINE is solid in pure form, with a melting point of approximately 45°C. Toxic if swallowed, by skin contact or by inhalation.	3451
–	T3	TP33	F-A, S-A	Category A	–	3,4-Dimethylaniline is a solid, which has a melting point of 47°C. Toxic if swallowed, by skin contact or by dust inhalation.	3452
–	T1	TP33	F-A, S-B	Category A	–	Very deliquescent, crystalline solid. Melting point: 42°C. Soluble in water. Mildly corrosive to most metals.	3453
–	T3	TP33	F-A, S-A	Category A	–	Yellow crystals or flakes, insoluble in water. Toxic if swallowed, by skin contact or by inhalation.	3454
–	T3	TP33	F-A, S-B	Category B	–	Light yellow solid. Soluble in water. Melting points of CRESOLS: <i>ortho</i> -CRESOL: 30°C, <i>para</i> -CRESOL: 35°C. Toxic if swallowed, by skin contact or by inhalation. Cause burns to skin, eyes and mucous membranes.	3455
–	T3	TP33	F-A, S-B	Category D SW2	SG6 SG16 SG17 SG19	Crystalline solid. Oxidant which may cause fire with organic materials (such as wood, straw, etc.). When involved in a fire, evolves toxic gases. In the presence of moisture, highly corrosive to most metals. Causes burns to skin, eyes and mucous membranes.	3456
–	T1	TP33	F-A, S-A	Category A	SG6 SG8 SG10 SG12	Melting range 20°C to 40°C. Insoluble in water. Oxidizing substance which may explode or burn fiercely when in contact with organic materials. Toxic if swallowed, by skin contact or by inhalation.	3457
–	T1	TP33	F-A, S-A	Category A	–	Light reddish or amber crystals. Melting points: 38°C to 54°C. Insoluble in water. Toxic if swallowed, by skin contact or by inhalation.	3458

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						Limited quantities	Excepted quantities	Instructions	Provisions	Instructions	Provisions
(1)	(2) 3.1.2	(3) 2.0	(4) 2.0	(5) 2.0.1.3	(6) 3.3	(7a) 3.4	(7b) 3.5	(8) 4.1.4	(9) 4.1.4	(10) 4.1.4	(11) 4.1.4
3459	NITROBROMOBENZENES, SOLID	6.1	-	III	-	5 kg	E1	P002 LP02	-	IBC08	B3
3460	N-ETHYLBENZYL TOLUIDINES, SOLID	6.1	-	III	-	5 kg	E1	P002 LP02	-	IBC08	B3
3462	TOXINS, EXTRACTED FROM LIVING SOURCES, SOLID, N.O.S.	6.1	-	I	210 274	0	E5	P002	-	IBC07	B1
3462	TOXINS, EXTRACTED FROM LIVING SOURCES, SOLID, N.O.S.	6.1	-	II	210 274	500 g	E4	P002	-	IBC08	B4 B21
3462	TOXINS, EXTRACTED FROM LIVING SOURCES, SOLID, N.O.S.	6.1	-	III	210 223 274	5 kg	E1	P002	-	IBC08	B3
3463	PROPIONIC ACID, with not less than 90% acid by mass	8	3	II	-	1 L	E2	P001	-	IBC02	-
3464	ORGANOPHOSPHORUS COMPOUND, SOLID, TOXIC, N.O.S.	6.1	-	I	43 274	0	E5	P002	-	IBC07	B1
3464	ORGANOPHOSPHORUS COMPOUND, SOLID, TOXIC, N.O.S.	6.1	-	II	43 274	500 g	E4	P002	-	IBC08	B4 B21
3464	ORGANOPHOSPHORUS COMPOUND, SOLID, TOXIC, N.O.S.	6.1	-	III	43 223 274	5 kg	E1	P002 LP02	-	IBC08	B3
3465	ORGANOARSENIC COMPOUND, SOLID, N.O.S.	6.1	-	I	274	0	E5	P002	-	IBC07	B1
3465	ORGANOARSENIC COMPOUND, SOLID, N.O.S.	6.1	-	II	274	500 g	E4	P002	-	IBC08	B4 B21
3465	ORGANOARSENIC COMPOUND, SOLID, N.O.S.	6.1	-	III	223 274	5 kg	E1	P002 LP02	-	IBC08	B3
3466	METAL CARBONYLS, SOLID, N.O.S.	6.1	-	I	274	0	E5	P002	-	IBC07	B1
3466	METAL CARBONYLS, SOLID, N.O.S.	6.1	-	II	274	500 g	E4	P002	-	IBC08	B4 B21
3466	METAL CARBONYLS, SOLID, N.O.S.	6.1	-	III	223 274	5 kg	E1	P002 LP02	-	IBC08	B3
3467	ORGANOMETALLIC COMPOUND, SOLID, TOXIC, N.O.S.	6.1	-	I	274	0	E5	P002	-	IBC07	B1
3467	ORGANOMETALLIC COMPOUND, SOLID, TOXIC, N.O.S.	6.1	-	II	274	500 g	E4	P002	-	IBC08	B4 B21
3467	ORGANOMETALLIC COMPOUND, SOLID, TOXIC, N.O.S.	6.1	-	III	223 274	5 kg	E1	P002 LP02	-	IBC08	B3

UN No.	Portable tanks and bulk containers		EmS	Stowage and handling	Segregation	Properties and observations	UN No.
	Tank instructions	Provisions					
(12)	(13) 4.2.5 4.3	(14) 4.2.5	(15) 5.4.3.2 7.8	(16a) 7.1 7.3-7.7	(16b) 7.2-7.7	(17)	(18)
-	T1	TP33	F-A, S-A	Category A	-	Colourless to pale yellow crystals which may liquefy under transport conditions. Melting points: 1-BROMO-2-NITROBENZENE: 43°C. 1-BROMO-4-NITROBENZENE: 127°C. Insoluble in water. Toxic if swallowed, by skin contact or by inhalation.	3459
-	T1	TP33	F-A, S-A	Category A	-	Solid which may liquefy under transport conditions. Strong odour. Insoluble in water. Toxic if swallowed, by skin contact or by inhalation.	3460
-	T6	TP33	F-A, S-A	Category B	-	Toxins from plant, animal or bacterial sources which contain infectious substances or toxins that are contained in infectious substances should be classified in class 6.2. Toxic if swallowed, by skin contact or by inhalation.	3462
-	T3	TP33	F-A, S-A	Category B	-	See entry above.	3462
-	T1	TP33	F-A, S-A	Category A	-	See entry above.	3462
-	T7	TP2	F-E, S-C	Category A	-	Colourless flammable liquid with a pungent odour. Miscible with water. Corrosive to lead and most other metals. Burns skin. Vapours irritate mucous membranes. Pure PROPIONIC ACID: flashpoint 50°C c.c.	3463
-	T6	TP33	F-A, S-A	Category B	-	Toxic if swallowed, by skin contact or by inhalation.	3464
-	T3	TP33	F-A, S-A	Category B	-	See entry above.	3464
-	T1	TP33	F-A, S-A	Category A	-	See entry above.	3464
-	T6	TP33	F-A, S-A	Category B	-	Toxic if swallowed, by skin contact or by inhalation.	3465
-	T3	TP33	F-A, S-A	Category B	-	See entry above.	3465
-	T1	TP33	F-A, S-A	Category A	-	See entry above.	3465
-	T6	TP33	F-A, S-A	Category D SW2	-	Insoluble in water. Toxic if swallowed, by skin contact or by dust inhalation.	3466
-	T3	TP33	F-A, S-A	Category D SW2	-	See entry above.	3466
-	T1	TP33	F-A, S-A	Category D SW2	-	See entry above.	3466
-	T6	TP33	F-A, S-A	Category B	-	Toxic if swallowed, by skin contact or by inhalation.	3467
-	T3	TP33	F-A, S-A	Category B	-	See entry above.	3467
-	T1	TP33	F-A, S-A	Category A	-	See entry above.	3467

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						Limited quantities	Excepted quantities	Instructions	Provisions	Instructions	Provisions
(1)	(2) 3.1.2	(3) 2.0	(4) 2.0	(5) 2.0.1.3	(6) 3.3	(7a) 3.4	(7b) 3.5	(8) 4.1.4	(9) 4.1.4	(10) 4.1.4	(11) 4.1.4
3468	HYDROGEN IN A METAL HYDRIDE STORAGE SYSTEM or HYDROGEN IN A METAL HYDRIDE STORAGE SYSTEM CONTAINED IN EQUIPMENT or HYDROGEN IN A METAL HYDRIDE STORAGE SYSTEM PACKED WITH EQUIPMENT	2.1	-	-	321 356	0	E0	P205	-	-	-
3469	PAINT, FLAMMABLE, CORROSIVE (including paint, lacquer, enamel, stain, shellac, varnish, polish, liquid filler and liquid lacquer base) or PAINT RELATED MATERIAL, FLAMMABLE, CORROSIVE (including paint thinning or reducing compound)	3	8	I	163 367	0	E0	P001	-	-	-
3469	PAINT, FLAMMABLE, CORROSIVE (including paint, lacquer, enamel, stain, shellac, varnish, polish, liquid filler and liquid lacquer base) or PAINT RELATED MATERIAL, FLAMMABLE, CORROSIVE (including paint thinning or reducing compound)	3	8	II	163 367	1 L	E2	P001	-	IBC02	-
3469	PAINT, FLAMMABLE, CORROSIVE (including paint, lacquer, enamel, stain, shellac, varnish, polish, liquid filler and liquid lacquer base) or PAINT RELATED MATERIAL, FLAMMABLE, CORROSIVE (including paint thinning or reducing compound)	3	8	III	163 223 367	5 L	E1	P001	-	IBC03	-
3470	PAINT, CORROSIVE, FLAMMABLE (including paint, lacquer, enamel, stain, shellac, varnish, polish, liquid filler and liquid lacquer base) or PAINT RELATED MATERIAL, CORROSIVE, FLAMMABLE (including paint thinning or reducing compound)	8	3	II	163 367	1 L	E2	P001	-	IBC02	-
3471	HYDROGENDIFLUORIDES SOLUTION, N.O.S.	8	6.1	II	-	1 L	E2	P001	-	IBC02	-
3471	HYDROGENDIFLUORIDES SOLUTION, N.O.S.	8	6.1	III	223	5 L	E1	P001	-	IBC03	-
3472	CROTONIC ACID, LIQUID	8	-	III	-	5 L	E1	P001 LP01	-	IBC03	-
3473	FUEL CELL CARTRIDGES or FUEL CELL CARTRIDGES CONTAINED IN EQUIPMENT or FUEL CELL CARTRIDGES PACKED WITH EQUIPMENT containing flammable liquids	3	-	-	328	1 L	E0	P004	-	-	-

(12)	Portable tanks and bulk containers		EmS	Stowage and handling	Segregation	Properties and observations	UN No.
	Tank instructions	Provisions					
(13) 4.2.5 4.3	(14) 4.2.5	(15) 5.4.3.2 7.8	(16a) 7.1 7.3-7.7	(16b) 7.2-7.7	(17)	(18)	
-	-	-	F-D, S-U	Category D	-	Article containing flammable odourless gas, which is much lighter than air.	3468
-	T11	TP2 TP27	F-E, S-C	Category E SW2	-	Miscibility with water depends upon the composition. Corrosive contents cause burns to skin, eyes and mucous membranes.	3469
-	T7	TP2 TP8 TP28	F-E, S-C	Category B SW2	-	See entry above.	3469
-	T4	TP1 TP29	F-E, S-C	Category A SW2	-	See entry above.	3469
-	T7	TP2 TP8 TP28	F-E, S-C	Category B SW2	-	Miscibility with water depends upon the composition. Corrosive contents cause burns to skin, eyes and mucous membranes.	3470
-	T7	TP2	F-A, S-B	Category A SW1 SW2	SG35	When involved in a fire or in contact with acids, evolves hydrogen fluoride, an extremely irritating and corrosive gas. Corrosive to glass, other siliceous materials and most metals. Toxic if swallowed, by skin contact or by inhalation. Causes burns to skin, eyes and mucous membranes.	3471
-	T4	TP1	F-A, S-B	Category A SW1 SW2	SG35	See entry above.	3471
-	T4	TP1	F-A, S-B	Category A SW1 H2	-	Causes burns to skin, eyes and mucous membranes.	3472
-	-	-	F-E, S-D	Category A	-	Fuel cell cartridges containing flammable liquids including methanol or methanol/water solutions. Fuel cell cartridges may also be shipped in, or packed with, equipment.	3473

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						Limited quantities	Excepted quantities	Instructions	Provisions	Instructions	Provisions
(1)	(2) 3.1.2	(3) 2.0	(4) 2.0	(5) 2.0.1.3	(6) 3.3	(7a) 3.4	(7b) 3.5	(8) 4.1.4	(9) 4.1.4	(10) 4.1.4	(11) 4.1.4
3474	1-HYDROXYBENZOTRIAZOLE MONOHYDRATE	4.1	-	I	-	0	E0	P406	PP48	-	-
3475	ETHANOL AND GASOLINE MIXTURE or ETHANOL AND MOTOR SPIRIT MIXTURE or ETHANOL AND PETROL MIXTURE, with more than 10% ethanol	3	-	II	333	1 L	E2	P001	-	IBC02	-
3476	FUEL CELL CARTRIDGES or FUEL CELL CARTRIDGES CONTAINED IN EQUIPMENT or FUEL CELL CARTRIDGES PACKED WITH EQUIPMENT, containing water-reactive substances	4.3	-	-	328 334	500 mL or 500 g	E0	P004	-	-	-
3477	FUEL CELL CARTRIDGES or FUEL CELL CARTRIDGES CONTAINED IN EQUIPMENT or FUEL CELL CARTRIDGES PACKED WITH EQUIPMENT, containing corrosive substances	8	-	-	328 334	1 L or 1 kg	E0	P004	-	-	-
3478	FUEL CELL CARTRIDGES or FUEL CELL CARTRIDGES CONTAINED IN EQUIPMENT or FUEL CELL CARTRIDGES PACKED WITH EQUIPMENT, containing liquefied flammable gas	2.1	-	-	328 338	120 mL	E0	P004	-	-	-
3479	FUEL CELL CARTRIDGES or FUEL CELL CARTRIDGES CONTAINED IN EQUIPMENT or FUEL CELL CARTRIDGES PACKED WITH EQUIPMENT, containing hydrogen in metal hydride	2.1	-	-	328 339	120 mL	E0	P004	-	-	-
3480	LITHIUM ION BATTERIES (including lithium ion polymer batteries)	9	-	-	188 230 310 348 376 377 384	0	E0	P903 P908 P909 P910 LP903 LP904	-	-	-
3481	LITHIUM ION BATTERIES CONTAINED IN EQUIPMENT or LITHIUM ION BATTERIES PACKED WITH EQUIPMENT (including lithium ion polymer batteries)	9	-	-	188 230 310 348 360 376 377 384	0	E0	P903 P908 P909 P910 LP903 LP904	-	-	-
3482	ALKALI METAL DISPERSION, FLAMMABLE or ALKALINE EARTH METAL DISPERSION, FLAMMABLE	4.3	3	I	182 183	0	E0	P402	PP31	-	-

UN No.	Portable tanks and bulk containers		EmS	Stowage and handling	Segregation	Properties and observations	UN No.
	Tank instructions	Provisions					
(12)	(13) 4.2.5 4.3	(14) 4.2.5	(15) 5.4.3.2 7.8	(16a) 7.1 7.3-7.7	(16b) 7.2-7.7	(17)	(18)
-	-	-	F-B, S-J	Category D	SG7 SG30	Desensitized explosive. White to light beige powder. Explosive and sensitive to friction in the dry state. When involved in a fire, evolves toxic fumes; in closed compartments these fumes may form an explosive mixture with air. May form extremely sensitive compounds with heavy metals or their salts.	3474
-	T4	TP1	F-E, S-E	Category E	-	Colourless, volatile liquids. Miscibility with water depends on the composition.	3475
-	-	-	F-G, S-P	Category A H1	SG26	Fuel cell cartridges containing water-reactive substances may also be shipped in, or packed with, equipment.	3476
-	-	-	F-A, S-B	Category A	-	Fuel cell cartridges containing corrosive substances may also be shipped in, or packed with, equipment.	3477
-	-	-	F-D, S-U	Category B	-	Fuel cell cartridges containing butane or other flammable liquefied gas may also be shipped in, or packed with, equipment.	3478
-	-	-	F-D, S-U	Category B	-	Fuel cell cartridges containing hydrogen, butane or other flammable odourless gas, which is much lighter than air, may also be shipped in or packed with equipment.	3479
-	-	-	F-A, S-I	Category A SW19	-	Electrical batteries containing lithium ion encased in a rigid metallic body. Lithium ion batteries may also be shipped in, or packed with, equipment. Electrical lithium batteries may cause fire due to an explosive rupture of the body caused by improper construction or reaction with contaminants.	3480
-	-	-	F-A, S-I	Category A SW19	-	Electrical batteries containing lithium ion encased in a rigid metallic body. Lithium ion batteries may also be shipped in, or packed with, equipment. Electrical lithium batteries may cause fire due to an explosive rupture of the body caused by improper construction or reaction with contaminants.	3481
-	-	-	F-G, S-N	Category D H1	SG26 SG35	Finely divided alkali or alkaline earth metal suspended in a flammable liquid. Reacts violently with moisture, water or acids, evolving hydrogen, which may be ignited by the heat of the reaction.	3482

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						Limited quantities	Excepted quantities	Instructions	Provisions	Instructions	Provisions
(1)	(2) 3.1.2	(3) 2.0	(4) 2.0	(5) 2.0.1.3	(6) 3.3	(7a) 3.4	(7b) 3.5	(8) 4.1.4	(9) 4.1.4	(10) 4.1.4	(11) 4.1.4
3483	MOTOR FUEL ANTI-KNOCK MIXTURE, FLAMMABLE	6.1	3 P	I	–	0	E0	P602	–	–	–
3484	HYDRAZINE AQUEOUS SOLUTION, FLAMMABLE with more than 37% hydrazine, by mass	8	3 6.1	I	–	0	E0	P001	–	–	–
3485	CALCIUM HYPOCHLORITE, DRY, CORROSIVE or CALCIUM HYPOCHLORITE MIXTURE, DRY, CORROSIVE with more than 39% available chlorine (8.8% available oxygen)	5.1	8 P	II	314	1 kg	E2	P002	PP85	–	–
3486	CALCIUM HYPOCHLORITE MIXTURE, DRY, CORROSIVE with more than 10% but not more than 39% available chlorine	5.1	8 P	III	314	5 kg	E1	P002	PP85	–	–
3487	CALCIUM HYPOCHLORITE, HYDRATED, CORROSIVE or CALCIUM HYPOCHLORITE, HYDRATED MIXTURE, CORROSIVE with not less than 5.5% but not more than 16% water	5.1	8 P	II	314 322	1 kg	E2	P002	PP85	–	–
3487	CALCIUM HYPOCHLORITE, HYDRATED, CORROSIVE or CALCIUM HYPOCHLORITE, HYDRATED MIXTURE, CORROSIVE with not less than 5.5% but not more than 16% water	5.1	8 P	III	223 314	5 kg	E1	P002	PP85	–	–
3488	TOXIC BY INHALATION LIQUID, FLAMMABLE, CORROSIVE, N.O.S. with an LC ₅₀ lower than or equal to 200 mL/m ³ and saturated vapour concentration greater than or equal to 500 LC ₅₀	6.1	3 8	I	274	0	E0	P601	–	–	–
3489	TOXIC BY INHALATION LIQUID, FLAMMABLE, CORROSIVE, N.O.S. with an LC ₅₀ lower than or equal to 1000 mL/m ³ and saturated vapour concentration greater than or equal to 10 LC ₅₀	6.1	3 8	I	274	0	E0	P602	–	–	–

UN No.	Portable tanks and bulk containers		EmS	Stowage and handling	Segregation	Properties and observations	UN No.
	Tank instructions	Provisions					
(12)	(13) 4.2.5 4.3	(14) 4.2.5	(15) 5.4.3.2 7.8	(16a) 7.1 7.3–7.7	(16b) 7.2–7.7	(17)	(18)
–	T14	TP2 TP13	F-E, S-D	Category D SW1 SW2	–	Volatile flammable liquids evolving toxic vapour. Mixture of tetraethyllead or tetramethyllead with ethylene dibromide and ethylene dichloride. Insoluble in water. Highly toxic if swallowed, by skin contact or by inhalation.	3483
–	T10	TP2 TP13	F-E, S-C	Category D SW2	SG5 SG8 SG35	Colourless flammable liquid. Powerful reducing agent, burns readily. Toxic if swallowed, by skin contact or by inhalation. Causes burns to skin, eyes and mucous membranes. Reacts violently with acids.	3484
–	–	–	F-H, S-Q	Category D SW1 SW11	SG35 SG38 SG49 SG53 SG60	White or yellowish corrosive solid (powder, granules or tablets) with chlorine-like odour. Soluble in water. May cause fire in contact with organic material or ammonium compounds. Substances are liable to exothermic decomposition at elevated temperatures. This condition may lead to fire or explosion. Decomposition can be initiated by heat or by impurities (e.g. powdered metals (iron, manganese, cobalt, magnesium) and their compounds). Liable to heat slowly. Reacts with acids, evolving chlorine, an irritating, corrosive and toxic gas. In the presence of moisture, corrosive to most metals. Causes burns to skin, eyes and mucous membranes.	3485
–	–	–	F-H, S-Q	Category D SW1 SW11	SG35 SG38 SG49 SG53 SG60	White or yellowish corrosive solid (powder, granules or tablets) with chlorine-like odour. Soluble in water. May cause fire in contact with organic material or ammonium compounds. Substances are liable to exothermic decomposition at elevated temperatures. This condition may lead to fire or explosion. Decomposition can be initiated by heat or by impurities (e.g. powdered metals (iron, manganese, cobalt, magnesium) and their compounds). Liable to heat slowly. Reacts with acids, evolving chlorine, an irritating, corrosive and toxic gas. In the presence of moisture, corrosive to most metals. Causes burns to skin, eyes and mucous membranes.	3486
–	–	–	F-H, S-Q	Category D SW1 SW11	SG35 SG38 SG49 SG53 SG60	White or yellowish corrosive solid (powder, granules or tablets) with chlorine-like odour. Soluble in water. May cause fire in contact with organic material or ammonium compounds. Substances are liable to exothermic decomposition at elevated temperatures. This condition may lead to fire or explosion. Decomposition can be initiated by heat or by impurities (e.g. powdered metals (iron, manganese, cobalt, magnesium) and their compounds). Liable to heat slowly. Reacts with acids, evolving chlorine, an irritating, corrosive and toxic gas. In the presence of moisture, corrosive to most metals. Causes burns to skin, eyes and mucous membranes.	3487
–	–	–	F-H, S-Q	Category D SW1 SW11	SG35 SG38 SG49 SG53 SG60	See entry above.	3487
–	T22	TP2 TP13	F-E, S-D	Category D SW2	SG5 SG8	A variety of toxic liquids which present a highly toxic inhalation hazard as well as being flammable and corrosive. Highly toxic if swallowed, by skin contact or by inhalation. Causes burns to skin, eyes and mucous membranes.	3488
–	T20	TP2 TP13	F-E, S-D	Category D SW2	SG5 SG8	A variety of toxic liquids which present a highly toxic inhalation hazard as well as being flammable and corrosive. Highly toxic if swallowed, by skin contact or by inhalation. Causes burns to skin, eyes and mucous membranes.	3489

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UN No.	Proper shipping name (PSN)	Class or division	Subsidiary risk(s)	Packing group	Special provisions	Limited and excepted quantity provisions		Packing		IBC	
						Limited quantities	Excepted quantities	Instructions	Provisions	Instructions	Provisions
(1)	(2) 3.1.2	(3) 2.0	(4) 2.0	(5) 2.0.1.3	(6) 3.3	(7a) 3.4	(7b) 3.5	(8) 4.1.4	(9) 4.1.4	(10) 4.1.4	(11) 4.1.4
3490	TOXIC BY INHALATION LIQUID, WATER-REACTIVE, FLAMMABLE, N.O.S. with an LC ₅₀ lower than or equal to 200 mL/m ³ and saturated vapour concentration greater than or equal to 500 LC ₅₀	6.1	4.3 3	I	274	0	E0	P601	-	-	-
3491	TOXIC BY INHALATION LIQUID, WATER-REACTIVE, FLAMMABLE, N.O.S. with an LC ₅₀ lower than or equal to 1000 mL/m ³ and saturated vapour concentration greater than or equal to 10 LC ₅₀	6.1	4.3 3	I	274	0	E0	P602	-	-	-
3494	PETROLEUM SOUR CRUDE OIL, FLAMMABLE, TOXIC	3	6.1	I	343	0	E0	P001	-	-	-
3494	PETROLEUM SOUR CRUDE OIL, FLAMMABLE, TOXIC	3	6.1	II	343	1 L	E2	P001	-	IBC02	-
3494	PETROLEUM SOUR CRUDE OIL, FLAMMABLE, TOXIC	3	6.1	III	343	5 L	E1	P001	-	IBC03	-
3495	IODINE	8	6.1	III	279	5 kg	E1	P002	-	IBC08	B3
3496	BATTERIES, NICKEL-METAL HYDRIDE	9	-	-	117 963	0	E0	See SP963	-	IBC08	-
3497	KRILL MEAL	4.2	-	II	300	0	E2	P410	-	IBC06	B21
3497	KRILL MEAL	4.2	-	III	223 300	0	E1	P002 LP02	-	IBC08	B3
3498	IODINE MONOCHLORIDE, LIQUID	8	-	II	-	1 L	E0	P001	-	IBC02	-
3499	CAPACITOR, ELECTRIC DOUBLE LAYER (with an energy storage capacity greater than 0.3 Wh)	9	-	-	361	0	E0	P003	-	-	-
3500	CHEMICAL UNDER PRESSURE, N.O.S.	2.2	-	-	274 362	0	E0	P206	-	-	-
3501	CHEMICAL UNDER PRESSURE, FLAMMABLE, N.O.S.	2.1	-	-	274 362	0	E0	P206	PP89	-	-
3502	CHEMICAL UNDER PRESSURE, TOXIC, N.O.S.	2.2	6.1	-	274 362	0	E0	P206	PP89	-	-
3503	CHEMICAL UNDER PRESSURE, CORROSIVE, N.O.S.	2.2	8	-	274 362	0	E0	P206	PP89	-	-
3504	CHEMICAL UNDER PRESSURE, FLAMMABLE, TOXIC, N.O.S.	2.1	6.1	-	274 362	0	E0	P206	PP89	-	-
3505	CHEMICAL UNDER PRESSURE, FLAMMABLE, CORROSIVE, N.O.S.	2.1	8	-	274 362	0	E0	P206	PP89	-	-

UN No.	Portable tanks and bulk containers		EmS	Stowage and handling	Segregation	Properties and observations	UN No.
	Tank instructions	Provisions					
(12)	(13) 4.2.5 4.3	(14) 4.2.5	(15) 5.4.3.2 7.8	(16a) 7.1 7.3-7.7	(16b) 7.2-7.7	(17)	(18)
-	T22	TP2 TP13	F-G, S-N	Category D SW2 H1	SG5 SG13 SG25 SG26	A variety of toxic liquids which present a highly toxic inhalation hazard as well as being water-reactive and flammable. Highly toxic if swallowed, by skin contact or by inhalation.	3490
-	T20	TP2 TP13	F-G, S-N	Category D SW2 H1	SG5 SG13 SG25 SG26	A variety of toxic liquids which present a highly toxic inhalation hazard as well as being water-reactive and flammable. Highly toxic if swallowed, by skin contact or by inhalation.	3491
-	T14	TP2 TP13	F-E, S-E	Category D SW2	-	Immiscible with water. Evolves hydrogen sulphide, which is a flammable, toxic gas with a foul odour, heavier than air (1.2). Toxic if swallowed, by skin contact or by inhalation.	3494
-	T7	TP2	F-E, S-E	Category D SW2	-	See entry above.	3494
-	T4	TP1	F-E, S-E	Category C SW2	-	See entry above.	3494
-	T1	TP33	F-A, S-B	Category B SW2	SG37	Bluish-black solid with a metallic lustre and a pungent odour. Melting point: 114°C. Below its melting point, may evolve vapours which are irritating to skin, eyes and mucous membranes. Slightly soluble in water but soluble in most organic solvents. Corrosive to most metals.	3495
-	-	-	F-A, S-I	Category A SW1	-	Nickel-metal hydride button cells or nickel-metal hydride cells or batteries packed with or contained in equipment are not subject to the provisions of this Code.	3496
-	T3	TP33	F-A, S-J	Category B SW27	SG65	Pink to red meal derived from Krill which is a shrimp-like marine organism. Medium odour, which may affect other sensitive cargo. Liable to self-heating. Naturally rich in anti-oxidants, which lessen the risk of spontaneous heating.	3497
-	T1	TP33	F-A, S-J	Category A	-	See entry above.	3497
-	T7	TP2	F-A, S-B	Category D SW2	SG6 SG16 SG17 SG19	Red Liquid. Reacts violently with water, evolving irritating and corrosive gases apparent as white fumes. Powerful oxidant: may cause fire in contact with organic materials such as wood, cotton or straw. In the presence of moisture, highly corrosive to most metals. Vapour irritates mucous membranes.	3498
-	-	-	F-A, S-I	Category A	-	Articles intended to store energy containing a non-dangerous activated carbon and an electrolyte. Electric double layer capacitors installed in equipment may be transported in a charged state.	3499
-	T50	TP4 TP40	F-C, S-V	Category B	-	Liquids, pastes or powders, pressurized with a propellant which meets the definition of a gas.	3500
-	T50	TP4 TP40	<u>F-D, S-U</u>	Category D SW2	-	Liquids, pastes or powders, pressurized with a propellant which meets the definition of a gas.	3501
-	T50	TP4 TP40	<u>F-C, S-V</u>	Category D SW2	-	Liquids, pastes or powders, pressurized with a propellant which meets the definition of a gas.	3502
-	T50	TP4 TP40	<u>F-C, S-U</u>	Category D SW2	-	Liquids, pastes or powders, pressurized with a propellant which meets the definition of a gas.	3503
-	T50	TP4 TP40	<u>F-D, S-U</u>	Category D SW2	-	Liquids, pastes or powders, pressurized with a propellant which meets the definition of a gas.	3504
-	T50	TP4 TP40	<u>F-D, S-U</u>	Category D SW2	-	Liquids, pastes or powders, pressurized with a propellant which meets the definition of a gas.	3505

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UN No.	Proper shipping name (PSN)	Class or division	Subsidiary risk(s)	Packing group	Special provisions	Limited and excepted quantity provisions		Packing		IBC	
						Limited quantities	Excepted quantities	Instructions	Provisions	Instructions	Provisions
(1)	(2) 3.1.2	(3) 2.0	(4) 2.0	(5) 2.0.1.3	(6) 3.3	(7a) 3.4	(7b) 3.5	(8) 4.1.4	(9) 4.1.4	(10) 4.1.4	(11) 4.1.4
3506	MERCURY CONTAINED IN MANUFACTURED ARTICLES	8	6.1	–	366	5 kg	E0	P003	PP90		
3507	URANIUM HEXAFLUORIDE, RADIOACTIVE MATERIAL, EXCEPTED PACKAGE, less than 0.1 kg per package, non-fissile or fissile-excepted	6.1	7/8	I	317 369	0	E0	P603	–	–	–
3508	CAPACITOR, ASYMMETRIC (with an energy storage capacity greater than 0.3Wh)	9	–	–	372	0	E0	P003	–	–	–
3509	PACKAGINGS, DISCARDED, EMPTY, UNCLEANED	9	–	–	968	0	E0	–	–	–	–
3510	ADSORBED GAS, FLAMMABLE, N.O.S.	2.1	–	–	274	0	E0	P208	–	–	–
3511	ADSORBED GAS, N.O.S.	2.2	–	–	274	0	E0	P208	–	–	–
3512	ADSORBED GAS, TOXIC, N.O.S.	2.3	–	–	274	0	E0	P208	–	–	–
3513	ADSORBED GAS, OXIDIZING, N.O.S.	2.2	5.1	–	274	0	E0	P208	–	–	–
3514	ADSORBED GAS, TOXIC, FLAMMABLE, N.O.S.	2.3	2.1	–	274	0	E0	P208	–	–	–
3515	ADSORBED GAS, TOXIC, OXIDIZING, N.O.S.	2.3	5.1	–	274	0	E0	P208	–	–	–
3516	ADSORBED GAS, TOXIC, CORROSIVE, N.O.S.	2.3	8	–	274 379	0	E0	P208	–	–	–
3517	ADSORBED GAS, TOXIC, FLAMMABLE, CORROSIVE, N.O.S.	2.3	2.1 8	–	274	0	E0	P208	–	–	–
3518	ADSORBED GAS, TOXIC, OXIDIZING, CORROSIVE, N.O.S.	2.3	5.1 8	–	274	0	E0	P208	–	–	–
3519	BORON TRIFLUORIDE, ADSORBED	2.3	8	–	–	0	E0	P208	–	–	–
3520	CHLORINE, ADSORBED	2.3	5.1 8	–	–	0	E0	P208	–	–	–
3521	SILICON TETRAFLUORIDE, ADSORBED	2.3	8	–	–	0	E0	P208	–	–	–
3522	ARSINE, ADSORBED	2.3	2.1	–	–	0	E0	P208	–	–	–
3523	GERMANE, ADSORBED	2.3	2.1	–	–	0	E0	P208	–	–	–

UN No.	Portable tanks and bulk containers		EmS	Stowage and handling	Segregation	Properties and observations	UN No.
	Tank instructions	Provisions					
(12)	(13) 4.2.5 4.3	(14) 4.2.5	(15) 5.4.3.2 7.8	(16a) 7.1 7.3–7.7	(16b) 7.2–7.7	(17)	(18)
–	–	–	F-A, S-B	Category B SW2	SG24	Articles containing mercury (UN 2809). Carriage should be prohibited in hovercraft and other ships constructed with aluminium.	3506
–	–	–	F-I, S-S	Category A SW12	–	See 1.5.1.	3507
–	–	–	F-A, S-I	Category A	–	Articles intended to store energy containing positive and negative electrodes comprised of different materials and an electrolyte. Asymmetric capacitors may be transported in a charged state.	3508
–	–	–	–	–	–	This entry shall not be used for sea transport. Discarded packaging shall meet the requirements of 4.1.1.11. Discarded packaging means packagings, large packagings or intermediate bulk containers (IBC), or parts thereof, which have contained dangerous goods, other than radioactive material, which are transported for disposal, recycling or recovery of their material, other than reconditioning, repair, routine maintenance, remanufacturing or reuse, and which have been emptied to the extent that only residues of dangerous goods adhering to the packaging parts are present.	3509
–	–	–	F-D, S-U	Category D SW2	–	–	3510
–	–	–	F-C, S-V	Category A	–	–	3511
–	–	–	F-C, S-U	Category D SW2	–	–	3512
–	–	–	F-C, S-W	Category D	–	–	3513
–	–	–	F-D, S-U	Category D SW2	–	–	3514
–	–	–	F-C, S-W	Category D SW2	–	–	3515
–	–	–	F-C, S-U	Category D SW2	–	–	3516
–	–	–	F-D, S-U	Category D SW2	SG4 SG9	–	3517
–	–	–	F-C, S-W	Category D SW2	SG6 SG19	–	3518
–	–	–	F-C, S-U	Category D SW2	–	Non-flammable, toxic and corrosive gas. Forms dense white corrosive fumes in moist air. Reacts violently with water, evolving hydrogen fluoride, an irritating and corrosive gas apparent as white fumes. In the presence of moisture, highly corrosive to glass and most metals. Much heavier than air (2.35). Highly irritating to skin, eyes and mucous membranes.	3519
–	–	–	F-C, S-W	Category D SW2	SG6 SG19	Non-flammable, toxic and corrosive yellow gas with a pungent odour. Corrosive to glass and to most metals. Much heavier than air (2.4). Highly irritating to skin, eyes and mucous membranes. Powerful oxidant which may cause fire.	3520
–	–	–	F-C, S-U	Category D SW2	–	Non-flammable, toxic and corrosive gas with a pungent odour. Corrosive to metals. In moist air, produces hydrogen fluoride. Much heavier than air (3.6). Highly irritating to skin, eyes and mucous membranes.	3521
–	–	–	F-D, S-U	Category D SW2	–	Flammable, toxic, colourless gas with a garlic odour. Explosive limits: 3.9% to 77.8%. Much heavier than air (2.8).	3522
–	–	–	F-D, S-U	Category D SW2	–	Flammable, toxic, colourless gas with a pungent odour. Much heavier than air (2.6).	3523

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						Limited quantities	Excepted quantities	Instructions	Provisions	Instructions	Provisions
(1)	(2) 3.1.2	(3) 2.0	(4) 2.0	(5) 2.0.1.3	(6) 3.3	(7a) 3.4	(7b) 3.5	(8) 4.1.4	(9) 4.1.4	(10) 4.1.4	(11) 4.1.4
3524	PHOSPHORUS PENTAFLUORIDE, ADSORBED	2.3	8	–	–	0	E0	P208	–	–	–
3525	PHOSPHINE, ADSORBED	2.3	2.1	–	–	0	E0	P208	–	–	–
3526	HYDROGEN SELENIDE, ADSORBED	2.3	2.1	–	–	0	E0	P208	–	–	–
3527	POLYESTER RESIN KIT, solid base material	4.1	–	II	236 340	5kg	E0	P412	–	–	–
3527	POLYESTER RESIN KIT, solid base material	4.1	–	III	236 340	5kg	E0	P412	–	–	–
3528	ENGINE, INTERNAL COMBUSTION, FLAMMABLE LIQUID POWERED or ENGINE, FUEL CELL, FLAMMABLE LIQUID POWERED or MACHINERY, INTERNAL COMBUSTION, FLAMMABLE LIQUID POWERED or MACHINERY, FUEL CELL, FLAMMABLE LIQUID POWERED	3	–	–	363 972	0	E0	P005	–	–	–
3529	ENGINE, INTERNAL COMBUSTION, FLAMMABLE GAS POWERED or ENGINE, FUEL CELL, FLAMMABLE GAS POWERED or MACHINERY, INTERNAL COMBUSTION, FLAMMABLE GAS POWERED or MACHINERY, FUEL CELL, FLAMMABLE GAS POWERED	2.1	–	–	363 972	0	E0	P005	–	–	–
3530	ENGINE, INTERNAL COMBUSTION or MACHINERY, INTERNAL COMBUSTION	9	– P	–	363 972	0	E0	P005	–	–	–
3531	POLYMERIZING SUBSTANCE, SOLID, STABILIZED, N.O.S.	4.1	–	III	274 386	0	E0	P002	PP92	IBC07	B18
3532	POLYMERIZING SUBSTANCE, LIQUID, STABILIZED, N.O.S.	4.1	–	III	274 386	0	E0	P001	PP93	IBC03	B19
3533	POLYMERIZING SUBSTANCE, SOLID, TEMPERATURE CONTROLLED, N.O.S.	4.1	–	III	274 386	0	E0	P002	PP92	IBC07	B18
3534	POLYMERIZING SUBSTANCE, LIQUID, TEMPERATURE CONTROLLED, N.O.S.	4.1	–	III	274 386	0	E0	P001	PP93	IBC03	B19

UN No.	Portable tanks and bulk containers		EmS	Stowage and handling	Segregation	Properties and observations	UN No.
	Tank instructions	Provisions					
(12)	(13) 4.2.5 4.3	(14) 4.2.5	(15) 5.4.3.2 7.8	(16a) 7.1 7.3–7.7	(16b) 7.2–7.7	(17)	(18)
–	–	–	F-C, S-U	Category D SW2	–	Non-flammable, toxic and corrosive gas with an irritating odour. Reacts with water or moist air to produce toxic and corrosive fumes. Corrosive to glass and to most metals. Much heavier than air (4.3). Highly irritating to skin, eyes and mucous membranes.	3524
–	–	–	F-D, S-U	Category D SW2	–	Flammable, toxic, colourless gas with a garlic odour. Ignites spontaneously in air. Heavier than air (1.2). Irritating to skin, eyes and mucous membranes.	3525
–	–	–	F-D, S-U	Category D SW2	–	Flammable, toxic, colourless gas with a disagreeable odour. Much heavier than air (2.8). Highly irritating to skin, eyes and mucous membranes.	3526
–	–	–	F-A, S-G	Category B	–	Polyester resin kits consist of two components: a base material (flammable solid) and an activator (organic peroxide), each separately packed in an inner packaging.	3527
–	–	–	F-A, S-G	Category B	–	See entry above.	3527
–	–	–	F-E, S-E	Category E SW29	–	Types of articles transported under this entry include engines or machinery, powered by fuels classified as dangerous goods via internal combustion systems or fuel cells (e.g. combustion engines, generators, compressors, turbines, heating units, etc.).	3528
–	–	–	F-D, S-U	Category E	–	Types of articles transported under this entry include engines or machinery, powered by fuels classified as dangerous goods via internal combustion systems or fuel cells (e.g. combustion engines, generators, compressors, turbines, heating units, etc.).	3529
–	–	–	F-A, S-F	Category A	–	Types of articles transported under this entry include engines or machinery, powered by fuels classified as dangerous goods via internal combustion systems or fuel cells (e.g. combustion engines, generators, compressors, turbines, heating units, etc.).	3530
–	T7	TP4 TP6 TP33	F-J, S-G	Category D SW1	SG35 SG36	Polymerizes at elevated temperatures or in a fire. Burns vigorously. Insoluble in water. Contact with alkalis or acids may cause dangerous polymerization. The products of combustion or self-accelerating polymerization may be toxic by inhalation.	3531
–	T7	TP4 TP6	F-J, S-G	Category D SW1	SG35 SG36	Polymerizes at elevated temperatures or in a fire. Burns vigorously. Immiscible with water. Contact with alkalis or acids may cause dangerous polymerization. The products of combustion or self-accelerating polymerization may be toxic by inhalation.	3532
–	T7	TP4 TP6 TP33	F-F, S-K	Category D SW1 SW3	SG35 SG36	Polymerizes at temperatures higher than the self-accelerating polymerization temperature or in a fire. Burns vigorously. Insoluble in water. Contact with alkalis or acids may cause dangerous polymerization. The products of combustion or self-accelerating polymerization may be toxic by inhalation. Control and emergency temperatures can be found in the transport document as required in 5.4.1.5.5. The temperature must be checked regularly.	3533
–	T7	TP4 TP6	F-F, S-K	Category D SW1 SW3	SG35 SG36	Polymerizes at temperatures higher than the self-accelerating polymerization temperature or in a fire. Burns vigorously. Immiscible with water. Contact with alkalis or acids may cause dangerous polymerization. The products of combustion or self-accelerating polymerization may be toxic by inhalation. Control and emergency temperatures can be found in the transport document as required in 5.4.1.5.5. The temperature must be checked regularly.	3534

Chapter 3.3

Special provisions applicable to certain substances, materials or articles

- 3.3.1 When column 6 of the Dangerous Goods List indicates that a special provision is relevant to a dangerous good, the meaning and requirement(s) of that special provision are as set out below. Where a special provision includes a requirement for package marking, the provisions of 5.2.1.2.1 to .4 shall be met. If the required mark is in the form of specific wording indicated in quotation marks, such as “Damaged Lithium Batteries”, the size of the mark shall be at least 12 mm, unless otherwise indicated in the special provision or elsewhere in this Code.
- 16 Samples of new or existing explosive substances or articles may be transported as directed by the competent authority for purposes including: testing, classification, research and development, quality control, or as a commercial sample. Explosive samples which are not wetted or desensitized shall be limited to 10 kg in small packages as specified by the competent authority. Explosive samples which are wetted or desensitized shall be limited to 25 kg.
- 23 Even though this substance has a flammability hazard, it only exhibits such hazard under extreme fire conditions in confined areas.
- 26 This substance is not permitted for transport in portable tanks, or intermediate bulk containers with a capacity exceeding 450 L, due to the potential initiation of an explosion when transported in large volumes.
- 28 This substance may be transported under the provisions of class 4.1 only if it is so packaged that the percentage of diluent will not fall below that stated, at any time during transport (see 2.4.2.4).
- 29 The packages, including bales, are exempt from labelling provided that they are marked with the appropriate class (e.g. “class 4.2”). Packages, with the exception of bales, shall also display the proper shipping name and the UN number of the substance that they contain in accordance with 5.2.1. In any case, the packages, including bales, are exempt from class marking provided that they are loaded in a cargo transport unit and that they contain goods to which only one UN number has been assigned. The cargo transport units in which the packages, including bales, are loaded shall display any relevant labels, placards and marks in accordance with chapter 5.3.
- 32 When in any other form, this substance is not subject to the provisions of this Code.
- 37 When coated, this substance is not subject to the provisions of this Code.
- 38 This substance, when it contains not more than 0.1% calcium carbide, is not subject to the provisions of this Code.
- 39 This substance, when it contains less than 30% or not less than 90% silicon, is not subject to the provisions of this Code.
- 43 When offered for transport as pesticides, these substances shall be transported under the relevant pesticide entry and in accordance with the relevant pesticide provisions (see 2.6.2.3 and 2.6.2.4).
- 45 Antimony sulphides and oxides which contain not more than 0.5% of arsenic, calculated on the total mass, are not subject to the provisions of this Code.
- 47 Ferricyanides and ferrocyanides are not subject to the provisions of this Code.
- 59 These substances, when they contain not more than 50% magnesium, are not subject to the provisions of this Code.
- 61 The technical name, which shall supplement the proper shipping name, shall be the ISO common name, or other name listed in *The WHO Recommended Classification of Pesticides by Hazard and Guidelines to Classification* or the name of the active substance (see also 3.1.2.8.1.1).
- 62 This substance, when it contains not more than 4% sodium hydroxide, is not subject to the provisions of this Code.
- 63 The division of class 2 and the subsidiary risks depend on the nature of the contents of the aerosol dispenser. The following provisions shall apply:
- .1 Class 2.1 applies if the contents include 85% by mass or more flammable components and the chemical heat of combustion is 30 kJ/g or more;

- .2 Class 2.2 applies if the contents contain 1% by mass or less flammable components and the heat of combustion is less than 20 kJ/g.
- .3 Otherwise the product shall be classified as tested by the tests described in the Manual of Tests and Criteria, part III, section 31. Extremely flammable and flammable aerosols shall be classified in class 2.1; non-flammable in class 2.2;
- .4 Gases of class 2.3 shall not be used as a propellant in an aerosol dispenser;
- .5 Where the contents other than the propellant of aerosol dispensers to be ejected are classified as class 6.1 packing groups II or III or class 8 packing groups II or III, the aerosol shall have a subsidiary risk of class 6.1 or class 8;
- .6 Aerosols with contents meeting the criteria for packing group I for toxicity or corrosivity shall be prohibited from transport;
- .7 Except for consignments transported in limited quantities (see chapter 3.4), packages containing aerosols shall bear labels for the primary risk and for the subsidiary risk(s), if any.

Flammable components are flammable liquids, flammable solids or flammable gases and gas mixtures as defined in notes 1 to 3 of subsection 31.1.3 of part III of the Manual of Tests and Criteria. This designation does not cover pyrophoric, self-heating or water-reactive substances. The chemical heat of combustion shall be determined by one of the following methods: ASTM D 240, ISO/FDIS 13943:1999 (E/F) 86.1 to 86.3 or NFPA 30B.

- 65 Hydrogen peroxide aqueous solutions with less than 8% hydrogen peroxide are not subject to the provisions of this Code.
- 66 Cinnabar is not subject to the provisions of this Code.
- 76 The transport of this substance shall be prohibited except with special authorization granted by the competent authority of the country concerned.
- 105 Nitrocellulose meeting the descriptions of UN 2556 or UN 2557 may be classified in class 4.1.
- 113 The transport of chemically unstable mixtures is prohibited.
- 117 Only regulated when transported by sea.
- 119 Refrigerating machines and refrigerating-machinery components including machines or other appliances which have been designed for the specific purpose of keeping food or other items at a low temperature in an internal compartment, and air-conditioning units. Refrigerating machines and refrigerating-machine components are not subject to the provisions of this Code if they contain less than 12 kg of gas in class 2.2 or less than 12 L of ammonia solution (UN 2672).
- 122 The subsidiary risk(s), the control and emergency temperatures, if any, and the generic entry number for each of the currently assigned organic peroxide formulations are given in 2.5.3.2.4, 4.1.4.2 packing instruction IBC520 and 4.2.5.2.6 portable tank instruction T23.
- 127 Other inert material or inert material mixture may be used at the discretion of the competent authority, provided this inert material has identical phlegmatizing properties.
- 131 The phlegmatized substance shall be significantly less sensitive than dry PETN.
- 133 If over-confined in packagings, this substance may exhibit explosive behaviour. Packagings authorized under packing instruction P409 are intended to prevent over-confinement. When a packaging other than those prescribed under packing instruction P409 is authorized by the competent authority of the country of origin in accordance with 4.1.3.7, the package shall bear an "EXPLOSIVE" subsidiary risk label (Model No. 1, see 5.2.2.2.2) unless the competent authority of the country of origin has permitted this label to be dispensed with for the specific packaging employed because test data have proved that the substance in this packaging does not exhibit explosive behaviour (see 5.4.1.5.5.1). The provisions of 7.2.3.3, 7.1.3.1 and 7.1.4.4 shall also be considered.
- 135 The dihydrated sodium salt of dichloroisocyanuric acid does not meet the criteria for inclusion in class 5.1 and is not subject to the provisions of this Code unless meeting the criteria for inclusion in another class or division.
- 138 *p*-Bromobenzyl cyanide is not subject to the provisions of this Code.
- 141 Products which have undergone sufficient heat treatment so that they present no hazard during transport are not subject to the provisions of this Code.
- 142 Solvent-extracted soya bean meal containing not more than 1.5% oil and 11% moisture, being substantially free from flammable solvents, which is accompanied by a certificate from the shipper stating that the substance, as offered for shipment, meets this requirement is not subject to the provisions of this Code.
- 144 An aqueous solution containing not more than 24% alcohol by volume is not subject to the provisions of this Code.
- 145 Alcoholic beverages of packing group III, when transported in receptacles of 250 L or less, are not subject to the provisions of this Code.

- 152 The classification of this substance will vary with particle size and packaging, but borderlines have not been experimentally determined. Appropriate classifications shall be made as required by 2.1.3.
- 153 This entry applies only if it is demonstrated, on the basis of tests, that the substance, when in contact with water, is not combustible nor shows a tendency to auto-ignition and that the mixture of gases evolved is not flammable.
- 163 A substance specifically listed by name in the Dangerous Goods List shall not be transported under this entry. Materials transported under this entry may contain 20% or less nitrocellulose provided the nitrocellulose contains not more than 12.6% nitrogen (by dry mass).
- 168 Asbestos which is immersed or fixed in a natural or artificial binder (such as cement, plastics, asphalt, resins or mineral ore) in such a way that no escape of hazardous quantities of respirable asbestos fibres can occur during transport is not subject to the provisions of this Code. Manufactured articles containing asbestos and not meeting this provision are nevertheless not subject to the provisions of this Code when packaged so that no escape of hazardous quantities of respirable asbestos fibres can occur during transport.
- 169 Phthalic anhydride in the solid state and tetrahydrophthalic anhydride, with not more than 0.05% maleic anhydride, are not subject to the provisions of this Code. Phthalic anhydride molten at a temperature above its flashpoint, with not more than 0.05% maleic anhydride, shall be classified under UN 3256.
- 172 Where a radioactive material has (a) subsidiary risk(s):
- .1 The substance shall be allocated to packing group I, II or III, if appropriate, by application of the packing group criteria provided in part 2 corresponding to the nature of the predominant subsidiary risk;
 - .2 Packages shall be labelled with subsidiary risk labels corresponding to each subsidiary risk exhibited by the material; corresponding placards shall be affixed to cargo transport units in accordance with the relevant provisions of 5.3.1;
 - .3 For the purposes of documentation and package marking, the proper shipping name shall be supplemented with the name of the constituents which most predominantly contribute to this (these) subsidiary risk(s) and which shall be enclosed in parenthesis;
 - .4 The dangerous goods transport document shall indicate the subsidiary class or division and, where assigned, the packing group as required by 5.4.1.4.1.4 and 5.4.1.4.1.5.
- For packing, see also 4.1.9.1.5.
- 177 Barium sulphate is not subject to the provisions of this Code.
- 178 This entry shall be used only when no other appropriate entry exists in the list, and only with the approval of the competent authority of the country of origin.
- 181 Packages containing this type of substance shall bear the "EXPLOSIVE" subsidiary risk label (Model No. 1, see 5.2.2.2.2) unless the competent authority of the country of origin has permitted this label to be dispensed with for the specific packaging employed because test data have proved that the substance in this packaging does not exhibit explosive behaviour (see 5.4.1.5.5.1). The provisions of 7.2.3.3 shall also be considered.
- 182 The group of alkali metals includes lithium, sodium, potassium, rubidium and caesium.
- 183 The group of alkaline earth metals includes magnesium, calcium, strontium and barium.
- 186 In determining the ammonium nitrate content, all nitrate ions for which a molecular equivalent of ammonium ions is present in the mixture shall be calculated as ammonium nitrate.
- 188 Cells and batteries offered for transport are not subject to other provisions of this Code if they meet the following:
- .1 For a lithium metal or lithium alloy cell, the lithium content is not more than 1 g, and for a lithium-ion cell, the watt-hour rating is not more than 20 Wh;
 - .2 For a lithium metal or lithium alloy battery, the aggregate lithium content is not more than 2 g, and for a lithium-ion battery, the watt-hour rating is not more than 100 Wh. Lithium-ion batteries subject to this provision shall be marked with the watt-hour rating on the outside case, except those manufactured before 1 January 2009;
 - .3 Each cell or battery meets the provisions of 2.9.4.1 and 2.9.4.5;
 - .4 Cells and batteries, except when installed in equipment, shall be packed in inner packagings that completely enclose the cell or battery. Cells and batteries shall be protected so as to prevent short circuits. This includes protection against contact with conductive materials within the same packaging that could lead to a short circuit. The inner packagings shall be packed in strong outer packagings which conform to the provisions of 4.1.1.1, 4.1.1.2, and 4.1.1.5.

- .5 Cells and batteries when installed in equipment shall be protected from damage and short circuit, and the equipment shall be equipped with an effective means of preventing accidental activation. This requirement does not apply to devices which are intentionally active in transport (radio frequency identification (RFID) transmitters, watches, sensors, etc.) and which are not capable of generating a dangerous evolution of heat. When batteries are installed in equipment, the equipment shall be packed in strong outer packagings constructed of suitable material of adequate strength and design in relation to the packaging's capacity and its intended use unless the battery is afforded equivalent protection by the equipment in which it is contained.
- .6 Each package shall be marked with the appropriate lithium battery mark, as illustrated in 5.2.1.10;

Note: The provisions concerning marking in special provision 188 of amendment 37-14 of the Code may continue to be applied until 31 December 2018.

This requirement does not apply to:

- .1 packages containing only button cell batteries installed in equipment (including circuit boards); and
- .2 packages containing no more than four cells or two batteries installed in equipment, where there are not more than two packages in the consignment.
- .7 Except when batteries are installed in equipment, each package shall be capable of withstanding a 1.2 m drop test in any orientation without damage to cells or batteries contained therein, without shifting of the contents so as to allow battery to battery (or cell to cell) contact and without release of contents; and
- .8 Except when batteries are installed in or packed with equipment, packages shall not exceed 30 kg gross mass.

As used above and elsewhere in this Code, "lithium content" means the mass of lithium in the anode of a lithium metal or lithium alloy cell.

Separate entries exist for lithium metal batteries and lithium ion batteries to facilitate the transport of these batteries for specific modes of transport and to enable the application of different emergency response actions.

A single cell battery as defined in part III, subsection 38.3.2.3 of the Manual of Tests and Criteria is considered a "cell" and shall be transported according to the requirements for "cells" for the purpose of this special provision.

- 190 Aerosol dispensers shall be provided with protection against inadvertent discharge. Aerosols with a capacity not exceeding 50 mL containing only non-toxic constituents are not subject to the provisions of this Code.
- 191 Receptacles with a capacity not exceeding 50 mL containing only non-toxic constituents are not subject to the provisions of this Code.
- 193 This entry may only be used for uniform ammonium nitrate based fertilizer mixtures of the nitrogen, phosphate or potash type, containing not more than 70% ammonium nitrate and not more than 0.4% total combustible/organic material calculated as carbon or with not more than 45% ammonium nitrate and unrestricted combustible material. Fertilizers within these composition limits are not subject to the provisions of this Code when shown by a Trough Test (see Manual of Tests and Criteria, part III, subsection 38.2) that they are not liable to self-sustaining decomposition.
- 194 The control and emergency temperatures, if any, and the generic entry number for each of the currently assigned self-reactive substances are given in 2.4.2.3.2.3.
- 195 For certain organic peroxides types B or C, a smaller packaging than that allowed by packing methods OP5 or OP6 respectively has to be used (see 4.1.7 and 2.5.3.2.4).
- 196 Formulations which, in laboratory testing, neither detonate in the cavitated state nor deflagrate, which show no effect when heated under confinement and which exhibit no explosive power may be transported under this entry. The formulation must also be thermally stable (i.e. the SADT is 60°C or higher for a 50 kg package). Formulations not meeting these criteria shall be transported under the provisions of class 5.2 (see 2.5.3.2.4).
- 198 Nitrocellulose solutions containing not more than 20% nitrocellulose may be transported as paint, perfumery products or printing ink, as applicable. See UN Nos. 1210, 1263, 1266, 3066, 3469 and 3470.
- 199 Lead compounds which, when mixed in a ratio of 1:1000 with 0.07M hydrochloric acid and stirred for one hour at a temperature of 23°C ± 2°C, exhibit a solubility of 5% or less (see ISO 3711:1990, *Lead chromate pigments and lead chromate-molybdate pigments – Specifications and methods of test*) are considered insoluble and are not subject to the provisions of this Code unless they meet the criteria for inclusion in another hazard class.

- 201 Lighters and lighter refills shall comply with the provisions of the country in which they were filled. They shall be provided with protection against inadvertent discharge. The liquid portion of the gas shall not exceed 85% of the capacity of the receptacle at 15°C. The receptacles, including the closures, shall be capable of withstanding an internal pressure of twice the pressure of the liquefied petroleum gas at 55°C. The valve mechanisms and ignition devices shall be securely sealed, taped or otherwise fastened or designed to prevent operation or leakage of the contents during transport. Lighters shall not contain more than 10 g of liquefied petroleum gas. Lighter refills shall not contain more than 65 g of liquefied petroleum gas.
- 203 This entry shall not be used for polychlorinated biphenyls, UN 2315.
- 204 Articles containing smoke-producing substance(s) corrosive according to the criteria for class 8 shall be labelled with a "CORROSIVE" subsidiary risk label (Model No. 8, see 5.2.2.2.2).
Articles containing smoke-producing substance(s) toxic by inhalation according to the criteria for class 6.1 shall be labelled with a "TOXIC" subsidiary risk label (Model No. 6.1, see 5.2.2.2.2), except that those manufactured before 31 December 2016 may be transported until 1 January 2019 without a "TOXIC" subsidiary label.
- 205 This entry shall not be used for PENTACHLOROPHENOL, UN 3155.
- 207 Moulding compounds may be made from polystyrene, poly(methyl methacrylate) or other polymeric material.
- 208 The commercial grade of calcium nitrate fertilizer, when consisting mainly of a double salt (calcium nitrate and ammonium nitrate) containing not more than 10% ammonium nitrate and at least 12% water of crystallization, is not subject to the provisions of this Code.
- 209 The gas shall be at a pressure corresponding to ambient atmospheric pressure at the time the containment system is closed and this shall not exceed 105 kPa absolute.
- 210 Toxins from plant, animal or bacterial sources which contain infectious substances, or toxins that are contained in infectious substances, shall be classified under class 6.2.
- 215 This entry only applies to the technically pure substance or to formulations derived from it, having an SADT higher than 75°C, and, therefore, does not apply to formulations which are self-reactive substances (for self-reactive substances, see 2.4.2.3.2.3). Homogeneous mixtures containing not more than 35% by mass of azodicarbonamide and at least 65% of inert substance are not subject to this Code unless criteria of other classes are met.
- 216 Mixtures of solids which are not subject to the provisions of this Code and flammable liquids may be transported under this entry without first applying the classification criteria of class 4.1, provided there is no free liquid visible at the time the substance is loaded or at the time the packaging or cargo transport unit is closed. Each cargo transport unit shall be leakproof when used as a bulk container. Sealed packets and articles containing less than 10 mL of a packing group II or III flammable liquid absorbed into a solid material are not subject to the provisions of this Code provided there is no free liquid in the packet or article.
- 217 This entry shall only be used for mixtures of solids which are not subject to the provisions of this Code and toxic liquids may be transported under this entry without first applying the classification criteria of class 6.1, provided there is no free liquid visible at the time the substance is loaded or at the time the packaging or cargo transport unit is closed. Each cargo transport unit shall be leakproof when used as a bulk container. This entry shall not be used for solids containing a packing group I liquid.
- 218 This entry shall only be used for mixtures of solids which are not subject to the provisions of this Code and corrosive liquids may be transported under this entry without first applying the classification criteria of class 8, provided there is no free liquid visible at the time the substance is loaded or at the time the packaging or cargo transport unit is closed. Each cargo transport unit shall be leakproof when used as a bulk container. This entry shall not be used for solids containing a packing group I liquid.
- 219 Genetically modified microorganisms (GMMOs) and genetically modified organisms (GMOs) packed and marked in accordance with packing instruction P904 are not subject to any other provisions of this Code.
If GMMOs or GMOs meet the definition in chapter 2.6 of a toxic substance or an infectious substance and the criteria for inclusion in class 6.1 or 6.2, the provisions of this Code for transporting toxic substances or infectious substances apply.
- 220 The technical name of the flammable liquid component only of this solution or mixture shall be shown in parentheses immediately following the proper shipping name.
- 221 Substances included under this entry shall not be of packing group I.

- 223 If the chemical or physical properties of a substance covered by this description are such that, when tested, it does not meet the established defining criteria for the class or division listed in column 3, or any other class or division, it is not subject to the provisions of this Code except in the case of a marine pollutant where 2.10.3 applies.
- 224 Unless it can be demonstrated by testing that the sensitivity of the substance in its frozen state is no greater than in its liquid state, the substance shall remain liquid during normal transport conditions. It shall not freeze at temperatures above -15°C .
- 225 Fire extinguishers under this entry may include installed actuating cartridges (cartridges, power device of division 1.4C or 1.4S) without changing the classification of class 2.2 provided the total quantity of deflagrating (propellant) explosives does not exceed 3.2 g per extinguishing unit. Fire extinguishers shall be manufactured, tested, approved and labelled according to the provisions applied in the country of manufacture.
- Note:** "Provisions applied in the country of manufacture" means the provisions applicable in the country of manufacture or those applicable in the country of use. Fire extinguishers under this entry include:
- .1 portable fire extinguishers for manual handling and operation;
 - .2 fire extinguishers for installation in aircraft;
 - .3 fire extinguishers mounted on wheels for manual handling;
 - .4 fire extinguishing equipment or machinery mounted on wheels or wheeled platforms or units transported similar to (small) trailers; and
 - .5 fire extinguishers composed of a non-rollable pressure drum and equipment, and handled, e.g. by fork lift or crane when loaded or unloaded.
- Note:** Pressure receptacles which contain gases for use in the above-mentioned extinguishers or for use in stationary fire-fighting installations shall meet the requirements in chapter 6.2 and all requirements applicable to the relevant dangerous goods when these pressure receptacles are transported separately.
- 226 Formulations of these substances containing not less than 30% non-volatile, non-flammable phlegmatizer are not subject to the provisions of this Code.
- 227 When phlegmatized with water and inorganic inert material, the content of urea nitrate may not exceed 75% by mass and the mixture shall not be capable of being detonated by the series 1, type (a) test in the Manual of Tests and Criteria, part I.
- 228 Mixtures not meeting the criteria for flammable gases (class 2.1) shall be transported under UN 3163.
- 230 Lithium cells and batteries may be transported under this entry if they meet the provisions of 2.9.4.
- 232 This entry shall only be used when the substance does not meet the criteria of any other class. Transport in cargo transport units other than in tanks shall be in accordance with standards specified by the competent authority of the country of origin.
- 235 This entry applies to articles which contain class 1 explosive substances and which may also contain dangerous goods of other classes. These articles are used to enhance safety in vehicles, vessels or aircraft, e.g. air bag inflators, air bag modules, seat-belt pretensioners, and pyromechanical devices.
- 236 Polyester resin kits consist of two components: a base material (either class 3 or class 4.1, packing group II or III) and an activator (organic peroxide). The organic peroxide shall be type D, E, or F, not requiring temperature control. The packing group shall be II or III, according to the criteria of either class 3 or class 4.1, as appropriate, applied to the base material. The quantity limit shown in column 7a of the Dangerous Goods List of chapter 3.2 applies to the base material.
- 237 The membrane filters, including paper separators, coating or backing materials, etc., that are present in transport, shall not be liable to propagate a detonation as tested by one of the tests described in the Manual of Tests and Criteria, part I, test series 1(a).
- In addition, the competent authority may determine, on the basis of the results of suitable burning rate tests taking account of the standard tests in the Manual of Tests and Criteria, part III, 33.2.1, that nitrocellulose membrane filters in the form in which they are to be transported are not subject to the provisions of this Code applicable to flammable solids in class 4.1.
- 238 .1 Batteries can be considered as non-spillable provided that they are capable of withstanding the vibration and pressure differential tests given below, without leakage of battery fluid:
- Vibration test:** The battery is rigidly clamped to the platform of a vibration machine and a simple harmonic motion having an amplitude of 0.8 mm (1.6 mm maximum total excursion) is applied. The frequency is varied at the rate of 1 Hz/min between the limits of 10 Hz and 55 Hz. The entire range of frequencies and return is traversed in 95 ± 5 minutes for each mounting position (direction of vibration) of the battery. The battery is tested in three mutually perpendicular positions (to include testing with fill openings and vents, if any, in an inverted position) for equal time periods.

- Pressure differential test:** Following the vibration test, the battery is stored for six hours at 24°C ± 4°C while subjected to a pressure differential of at least 88 kPa. The battery is tested in three mutually perpendicular positions (to include testing with fill openings and vents, if any, in an inverted position) for at least six hours in each position.
- Non-spillable type batteries which are an integral part of and necessary for the operation of mechanical or electronic equipment shall be securely fastened in the battery holder on the equipment and protected in such a manner as to prevent damage and short circuits.
- .2 Non-spillable batteries are not subject to the provisions of this Code if, at a temperature of 55°C, the electrolyte will not flow from a ruptured or cracked case and there is no free liquid to flow and if, when packaged for transport, the terminals are protected from short circuit.
- 239 Batteries or cells shall not contain dangerous goods other than sodium, sulphur or sodium compounds (e.g. sodium polysulphides and sodium tetrachloroaluminate). Batteries or cells shall not be offered for transport at a temperature such that liquid elemental sodium is present in the battery or cell, unless approved and under the conditions established by the competent authority.
- Cells shall consist of hermetically sealed metal casings which fully enclose the dangerous goods and which are so constructed and closed as to prevent the release of the dangerous goods under normal conditions of transport.
- Batteries shall consist of cells secured within and fully enclosed by a metal casing so constructed and closed as to prevent the release of the dangerous goods under normal conditions of transport. Batteries installed in vehicles are not subject to the provisions of this Code.
- 240 This entry only applies to vehicles powered by wet batteries, sodium batteries, lithium metal batteries or lithium ion batteries and equipment powered by wet batteries or sodium batteries transported with these batteries installed.
- For the purpose of this special provision, vehicles are self-propelled apparatus designed to carry one or more persons or goods. Examples of such vehicles are electrically-powered cars, motorcycles, scooters, three- and four-wheeled vehicles or motorcycles, trucks, locomotives, bicycles (pedal cycles with an electric motor) and other vehicles of this type (e.g. self-balancing vehicles or vehicles not equipped with at least one seating position), wheel chairs, lawn tractors, self-propelled farming and construction equipment, boats and aircraft. This includes vehicles transported in a packaging. In this case some parts of the vehicle may be detached from its frame to fit into the packaging.
- Examples of equipment are lawnmowers, cleaning machines or model boats and model aircraft. Equipment powered by lithium metal batteries or lithium ion batteries shall be consigned under the entries UN 3091 LITHIUM METAL BATTERIES CONTAINED IN EQUIPMENT or UN 3091 LITHIUM METAL BATTERIES PACKED WITH EQUIPMENT or UN 3481 LITHIUM ION BATTERIES CONTAINED IN EQUIPMENT or UN 3481 LITHIUM ION BATTERIES PACKED WITH EQUIPMENT, as appropriate.
- Hybrid electric vehicles powered by both an internal combustion engine and wet batteries, sodium batteries, lithium metal batteries or lithium ion batteries, transported with the battery(ies) installed shall be consigned under the entries UN 3166 VEHICLE, FLAMMABLE GAS POWERED or UN 3166 VEHICLE, FLAMMABLE LIQUID POWERED, as appropriate. Vehicles which contain a fuel cell shall be consigned under the entries UN 3166 VEHICLE, FUEL CELL, FLAMMABLE GAS POWERED or UN 3166 VEHICLE, FUEL CELL, FLAMMABLE LIQUID POWERED, as appropriate.
- Vehicles may contain other dangerous goods than batteries (e.g. fire extinguishers, compressed gas accumulators or safety devices) required for their functioning or safe operation without being subject to any additional requirements for these other dangerous goods, unless otherwise specified in this Code.
- 241 The formulation shall be prepared so that it remains homogeneous and does not separate during transport. Formulations with low nitrocellulose contents and not showing dangerous properties when tested for their liability to detonate, deflagrate or explode when heated under defined confinement by tests of test series 1(a), 2(b) and 2(c) respectively in the Manual of Tests and Criteria, part I and not being a flammable solid when tested in accordance with test No. 1 in the Manual of Tests and Criteria, part III, paragraph 33.2.1.4 (chips, if necessary, crushed and sieved to a particle size of less than 1.25 mm) are not subject to the provisions of this Code.
- 242 Sulphur is not subject to the provisions of this Code when it has been formed to a specific shape (such as prills, granules, pellets, pastilles or flakes).
- 243 Gasoline, motor spirit and petrol for use in spark-ignition engines (e.g. in automobiles, stationary engines and other engines) shall be assigned to this entry regardless of variations in volatility.
- 244 This entry includes materials and substances such as aluminium dross, aluminium skimmings, spent cathodes, spent potliner and aluminium salt slags.
- Before loading, these by-products shall be cooled to ambient temperature, unless they have been calcined to remove moisture. Cargo transport units containing bulk loads shall be adequately ventilated and protected against ingress of water throughout the journey.

- 247 Alcoholic beverages containing more than 24% alcohol but not more than 70% by volume, when transported as part of the manufacturing process, may be transported in wooden barrels with a capacity of more than 250 L and not more than 500 L meeting the general requirements of 4.1.1, as appropriate, on the following conditions:
- .1 the wooden barrels shall be checked and tightened before filling;
 - .2 sufficient ullage (not less than 3%) shall be left to allow for the expansion of the liquid;
 - .3 the wooden barrels shall be transported with the bungholes pointing upwards;
 - .4 the wooden barrels shall be transported in containers meeting the provisions of the International Convention for Safe Containers (CSC 1972), as amended, and each wooden barrel shall be secured in custom-made cradles and be wedged by appropriate means to prevent it from being displaced in any way during transport; and
 - .5 when carried on board ships, the containers shall be stowed in open cargo spaces or in enclosed cargo spaces complying with the requirements for class 3 flammable liquids with a flashpoint of 23°C c.c. or less in regulation II-2/19 of SOLAS, 74, as amended or regulation II-2/54 of SOLAS 74, as amended by the resolutions indicated in II-2/1.2.1, as applicable.
- 249 Ferrocium, stabilized against corrosion, with a minimum iron content of 10% is not subject to the provisions of this Code.
- 250 This entry may only be used for samples of chemicals taken for analysis in connection with the implementation of the Convention on the Prohibition of the Development, Production, Stockpiling and Use of Chemical Weapons and on their Destruction. The transport of substances under this entry shall be in accordance with the chain of custody and security procedures specified by the Organization for the Prohibition of Chemical Weapons.
- The chemical sample may only be transported provided prior approval has been granted by the competent authority or the Director General of the Organization for the Prohibition of Chemical Weapons and providing the sample complies with the following conditions:
- .1 it shall be packaged according to packing instruction 623 in the International Civil Aviation Organization's Technical Instructions for the Safe Transport of Dangerous Goods by Air; and
 - .2 during transport, it shall be accompanied by a copy of the document of approval for transport, showing the quantity limitations and the packing provisions.
- 251 The entry CHEMICAL KIT or FIRST AID KIT is intended to apply to boxes, cases, etc., containing small quantities of various dangerous goods which are used, for example, for medical, analytical, testing or repair purposes. Such kits may not contain dangerous goods for which the quantity "0" has been indicated in column 7a of the Dangerous Goods List.
- Components shall not react dangerously (see 4.1.1.6). The total quantity of dangerous goods in any one kit shall not exceed either 1 L or 1 kg. The packing group assigned to the kit as a whole shall be the most stringent packing group assigned to any individual substance in the kit.
- Where the kit contains only dangerous goods to which no packing group is assigned, no packing group need be indicated on the dangerous goods transport document.
- Kits which are carried on board vehicles for first-aid or operating purposes are not subject to the provisions of this Code.
- Chemical kits and first aid kits containing dangerous goods in inner packagings which do not exceed the quantity limits for limited quantities applicable to individual substances as specified in column 7a of the Dangerous Goods List may be transported in accordance with chapter 3.4.
- 252 Provided the ammonium nitrate remains in solution under all conditions of transport, aqueous solutions of ammonium nitrate, with not more than 0.2% combustible material, in a concentration not exceeding 80%, are not subject to the provisions of this Code.
- 266 This substance, when containing less alcohol, water or phlegmatizer than specified, shall not be transported, unless specifically authorized by the competent authority.
- 267 Any explosives, blasting, type C containing chlorates shall be segregated from explosives containing ammonium nitrate or other ammonium salts.
- 270 Aqueous solutions of class 5.1 inorganic solid nitrate substances are considered as not meeting the criteria of class 5.1 if the concentration of the substances in solution at the minimum temperature encountered in transport is not greater than 80% of the saturation limit.
- 271 Lactose or glucose or similar materials may be used as a phlegmatizer provided that the substance contains not less than 90%, by mass, of phlegmatizer. The competent authority may authorize these mixtures to be classified under class 4.1 on the basis of series 6(c) tests of part I of the Manual of Tests and Criteria on at least three packages as prepared for transport. Mixtures containing at least 98%, by mass, of phlegmatizer are not subject to the provisions of this Code. Packages containing mixtures with not less than 90%, by mass, of phlegmatizer need not bear a "TOXIC" subsidiary risk label.

- 272 This substance shall not be transported under the provisions of class 4.1 unless specifically authorized by the competent authority (see UN 0143 or UN 0150 as appropriate).
- 273 Maneb and mane b preparations stabilized against self-heating need not be classified in class 4.2 when it can be demonstrated by testing that a cubic volume of 1 m³ of substance does not self-ignite and that the temperature at the centre of the sample does not exceed 200°C when the sample is maintained at a temperature of not less than 75°C ± 2°C for a period of 24 hours.
- 274 For the purposes of documentation and package marking, the proper shipping name shall be supplemented with the technical name (see 3.1.2.8.1).
- 277 For aerosols or receptacles containing toxic substances, the limited quantity value is 120 mL. For all other aerosols or receptacles, the limited quantity value is 1,000 mL.
- 278 These substances shall not be classified and transported unless authorized by the competent authority on the basis of results from series 2 tests and series 6(c) tests of part I of the Manual of Tests and Criteria on packages as prepared for transport (see 2.1.3.1). The competent authority shall assign the packing group on the basis of the chapter 2.3 criteria and the package type used for the series 6(c) tests.
- 279 The substance is assigned to this classification or packing group based on human experience rather than the strict application of classification criteria set out in this Code.
- 280 This entry applies to safety devices for vehicles, vessels or aircraft, e.g. air bag inflators, air bag modules, seat-belt pretensioners, and pyromechanical devices, which contain dangerous goods of class 1 or of other classes, when transported as component parts and if these articles as presented for transport have been tested in accordance with test series 6(c) of part I of the Manual of Tests and Criteria, with no explosion of the device, no fragmentation of device casing or pressure receptacle, and no projection hazard nor thermal effect which would significantly hinder fire-fighting or emergency response efforts in the immediate vicinity. This entry does not apply to life-saving appliances described in special provision 296 (UN Nos. 2990 and 3072).
- 281 Transport of hay, straw or bhusa when wet, damp or contaminated with oil is prohibited and when not wet or contaminated with oil is subject to the provisions of this Code.
- 283 Articles, containing gas, intended to function as shock absorbers, including impact-energy-absorbing devices or pneumatic springs, are not subject to the provisions of this Code provided:
- .1 each article has a gas space capacity not exceeding 1.6 L and a charge pressure not exceeding 280 bar where the product of the capacity (litres) and charge pressure (bar) does not exceed 80 (i.e. 0.5 L gas space and 160 bar charge pressure, 1 L gas space and 80 bar charge pressure, 1.6 L gas space and 50 bar charge pressure, 0.28 L gas space and 280 bar charge pressure);
 - .2 each article has a minimum burst pressure of 4 times the charge pressure at 20°C for products not exceeding 0.5 L gas space capacity and 5 times charge pressure for products greater than 0.5 L gas space capacity;
 - .3 each article is manufactured from material which will not fragment upon rupture;
 - .4 each article is manufactured in accordance with a quality-assurance standard acceptable to the competent authority; and
 - .5 the design type has been subjected to a fire test demonstrating that pressure in the article is relieved by means of a fire-degradable seal or other pressure relief device, such that the article will not fragment and that the article does not rocket.
- 284 An oxygen generator, chemical, containing oxidizing substances shall meet the following conditions:
- .1 the generator, when containing an explosive device, shall only be transported under this entry when excluded from class 1 in accordance with 2.1.3 of this Code;
 - .2 the generator, without its packaging, shall be capable of withstanding a 1.8 m drop test onto a rigid, non-resilient, flat and horizontal surface, in the position most likely to cause damage, without loss of its contents and without actuation; and
 - .3 when the generator is equipped with an actuating device, it shall have at least two positive means of preventing unintentional actuation.
- 286 Nitrocellulose membrane filters covered by this entry, each with a mass not exceeding 0.5 g, are not subject to the provisions of this Code when contained individually in an article or a sealed packet.
- 288 These substances shall not be classified and transported unless authorized by the competent authority on the basis of results from series 2 tests and series 6(c) tests of part I of the Manual of Tests and Criteria on packages as prepared for transport (see 2.1.3).
- 289 Safety devices, electrically initiated and safety devices, pyrotechnic installed in vehicles, vessels or aircraft or in completed components such as steering columns, door panels, seats, etc., are not subject to the provisions of this Code.

- 290 When this radioactive material meets the definitions and criteria of other classes or divisions as defined in part 2, it shall be classified in accordance with the following:
- .1 where the substance meets the criteria for dangerous goods in excepted quantities as set out in chapter 3.5, the packagings shall be in accordance with 3.5.2 and meet the testing requirements of 3.5.3. All other requirements applicable to radioactive material, excepted packages as set out in 1.5.1.5 shall apply without reference to the other class or division;
 - .2 where the quantity exceeds the limits specified in 3.5.1.2, the substance shall be classified in accordance with the predominant subsidiary risk. The dangerous goods transport document shall describe the substance with the UN number and proper shipping name applicable to the other class supplemented with the name applicable to the radioactive excepted package according to column 2 in the Dangerous Goods List of chapter 3.2, and the substance shall be transported in accordance with the provisions applicable to that UN number. An example of the information shown on the dangerous goods transport document is:
UN 1993, Flammable liquid, N.O.S. (ethanol and toluene mixture), Radioactive material, excepted package – limited quantity of material, class 3, PG II.
In addition, the provisions of 2.7.2.4.1 shall apply;
 - .3 the provisions of chapter 3.4 for the transport of dangerous goods packed in limited quantities shall not apply to substances classified in accordance with subparagraph .2;
 - .4 when the substance meets a special provision that exempts this substance from all dangerous goods provisions of the other classes, it shall be classified in accordance with the applicable UN number of class 7 and all requirements specified in 1.5.1.5 shall apply.
- 291 Flammable liquefied gases shall be contained within refrigerating-machine components. These components shall be designed and tested to at least three times the working pressure of the machinery. The refrigerating machines and refrigerating-machine components shall be designed and constructed to contain the liquefied gas and preclude the risk of bursting or cracking of the pressure-retaining components during normal conditions of transport. Refrigerating machines and refrigerating-machine components are not subject to the provisions of this Code if they contain less than 12 kg of gas.
- 293 The following definitions apply to matches:
- .1 *Fusee matches* are matches the heads of which are prepared with a friction-sensitive igniter composition and a pyrotechnic composition which burns with little or no flame, but with intense heat;
 - .2 *Safety matches* are combined with or attached to the box, book or card that can be ignited by friction only on a prepared surface;
 - .3 *“Strike anywhere” matches* are matches that can be ignited by friction on a solid surface;
 - .4 *Wax ‘Vesta’ matches* are matches that can be ignited by friction either on a prepared surface or on a solid surface.
- 294 Safety matches and wax ‘Vesta’ matches in an outer packaging not exceeding 25 kg net mass are not subject to any other provision (except marking) of this Code when packaged in accordance with packing instruction P407.
- 295 Batteries need not be individually marked and labelled if the pallet bears the appropriate mark and label.
- 296 These entries apply to life-saving appliances such as liferafts, personal flotation devices and self-inflating slides. UN 2990 applies to self-inflating appliances. UN 3072 applies to life-saving appliances that are not self-inflating. Life-saving appliances may contain:
- .1 signal devices (class 1) which may include smoke and illumination signal flares packed in packagings that prevent them from being inadvertently activated;
 - .2 for UN 2990 only, cartridges, power device of division 1.4, compatibility group S, may be contained for purposes of the self-inflating mechanism and provided that the quantity of explosives per appliance does not exceed 3.2 g;
 - .3 class 2.2 compressed or liquefied gases;
 - .4 electric storage batteries (class 8) and lithium batteries (class 9);
 - .5 first aid kits or repair kits containing small quantities of dangerous goods (e.g. classes 3, 4.1, 5.2, 8 or 9 substances); or
 - .6 “Strike anywhere” matches packed in packagings that prevent them from being inadvertently activated.
- Life-saving appliances packed in strong rigid outer packagings with a total maximum gross mass of 40 kg, containing no dangerous goods other than class 2.2 compressed or liquefied gases with no subsidiary risk in receptacles with a capacity not exceeding 120 mL, installed solely for the purpose of the activation of the appliance, are not subject to the provision of this Code.
- 299 Consignments of:
- .1 Cotton, dry having a density not less than 360 kg/m³;

- .2 Flax, dry having a density not less than 400 kg/m³;
- .3 Sisal, dry having a density not less than 360 kg/m³; and
- .4 Tampico fibre, dry having a density not less than 360 kg/m³,

according to ISO 8115:1986, are not subject to the provisions of this Code when transported in closed cargo transport units.

- 300 Fish meal, fish scrap and krill meal shall not be transported if the temperature at the time of loading exceeds 35°C or 5°C above the ambient temperature, whichever is higher.
- 301 This entry only applies to machinery or apparatus containing dangerous substances as a residue or an integral element of the machinery or apparatus. It shall not be used for machinery or apparatus for which a proper shipping name already exists in the Dangerous Goods List. Machinery and apparatus transported under this entry shall only contain dangerous goods which are authorized to be transported in accordance with the provisions in chapter 3.4 (Limited quantities). The quantity of dangerous goods in machinery or apparatus shall not exceed the quantity specified in column 7a of the Dangerous Goods List for each item of dangerous goods contained. If the machinery or apparatus contains more than one item of dangerous goods, the individual substances shall not be capable of reacting dangerously with one another (see 4.1.1.6). When it is required to ensure liquid dangerous goods remain in their intended orientation, package orientation labels meeting the specifications of ISO 780:1985 shall be affixed on at least two opposite vertical sides with the arrows pointing in the correct direction. The transport of dangerous goods in machinery or apparatus where the quantity of dangerous goods exceeds the quantity specified in column 7a of the Dangerous Goods List is authorized when approved by the competent authority, except where special provision 363 applies.
- 302 Fumigated cargo transport units containing no other dangerous goods are only subject to the provisions of 5.5.2.
- 303 Receptacles shall be assigned to the class and, if any, subsidiary hazard of the gas or mixture of gases contained therein determined in accordance with the provisions of chapter 2.2.
- 304 This entry may only be used for the transport of non-activated batteries which contain dry potassium hydroxide and which are intended to be activated prior to use by the addition of an appropriate amount of water to the individual cells.
- 305 These substances are not subject to the provisions of this Code when in concentrations of not more than 50 mg/kg.
- 306 This entry may only be used for substances that are too insensitive for acceptance into class 1 when tested in accordance with test series 2 (see Manual of Tests and Criteria, part I).
- 307 This entry shall be used for uniform mixtures containing ammonium nitrate as the main ingredient within the following composition limits:
- .1 not less than 90% ammonium nitrate with not more than 0.2% total combustible/organic material calculated as carbon and with added matter, if any, which is inorganic and inert towards ammonium nitrate; or
 - .2 less than 90% but more than 70% ammonium nitrate with other inorganic materials or more than 80% but less than 90% ammonium nitrate mixed with calcium carbonate and/or dolomite and/or mineral calcium sulphate and not more than 0.4% total combustible/organic material calculated as carbon; or
 - .3 nitrogen type ammonium nitrate based fertilizers containing mixtures of ammonium nitrate and ammonium sulphate with more than 45% but less than 70% ammonium nitrate and not more than 0.4% total combustible/organic material calculated as carbon such that the sum of the percentage compositions of ammonium nitrate and ammonium sulphate exceeds 70%.
- 308 Fish scrap or fish meal shall contain at least 100 ppm of antioxidant (ethoxyquin) at the time of consignment.
- 309 This entry applies to non-sensitized emulsions, suspensions and gels consisting primarily of a mixture of ammonium nitrate and fuel, intended to produce a Type E blasting explosive only after further processing prior to use.
- The mixture for emulsions typically has the following composition: 60–85% ammonium nitrate, 5–30% water, 2–8% fuel, 0.5–4% emulsifier agent, 0–10% soluble flame suppressants, and trace additives. Other inorganic nitrate salts may replace part of the ammonium nitrate.
- The mixture for suspensions and gels typically has the following composition: 60–85% ammonium nitrate, 0–5% sodium or potassium perchlorate, 0–17% hexamine nitrate or monomethylamine nitrate, 5–30% water, 2–15% fuel, 0.5–4% thickening agent, 0–10% soluble flame suppressants, and trace additives. Other inorganic nitrate salts may replace part of the ammonium nitrate.
- Substances shall satisfactorily pass tests 8(a), (b) and (c) of test series 8 of the Manual of Tests and Criteria, part I, section 18 and be approved by the competent authority.

- 310 The testing requirements in the Manual of Tests and Criteria, part III, subsection 38.3 do not apply to production runs, consisting of not more than 100 cells and batteries, or to pre-production prototypes of cells and batteries when these prototypes are transported for testing when packaged in accordance with packing instruction P910 of 4.1.4.1.
- The transport document shall include the following statement: "Transport in accordance with special provision 310".
- Damaged or defective cells, batteries, or cells and batteries contained in equipment shall be transported in accordance with special provision 376 and packaged in accordance with packing instructions P908 of 4.1.4.1 or LP904 of 4.1.4.3, as applicable.
- Cells, batteries or cells and batteries contained in equipment transported for disposal or recycling may be packaged in accordance with special provision 377 and packing instruction P909 of 4.1.4.1.
- 311 Substances shall not be transported under this entry unless approved by the competent authority on the basis of the results of appropriate tests according to part I of the Manual of Tests and Criteria. Packaging shall ensure that the percentage of diluent does not fall below that stated in the competent authority approval at any time during transport.
- 312 Vehicles powered by a fuel cell engine shall be consigned under the entries UN No. 3166 VEHICLE, FUEL CELL, FLAMMABLE GAS POWERED or UN No. 3166 VEHICLE, FUEL CELL, FLAMMABLE LIQUID POWERED, as appropriate. These entries include hybrid electric vehicles powered by both a fuel cell and an internal combustion engine with wet batteries, sodium batteries, lithium metal batteries or lithium ion batteries, transported with the battery(ies) installed.
- Other vehicles which contain an internal combustion engine shall be consigned under the entries UN 3166 VEHICLE, FLAMMABLE GAS POWERED or UN 3166 VEHICLE, FLAMMABLE LIQUID POWERED, as appropriate. These entries include hybrid electric vehicles powered by both an internal combustion engine and wet batteries, sodium batteries, lithium metal batteries or lithium ion batteries, transported with the batteries installed.
- 314 .1 These substances are liable to exothermic decomposition at elevated temperatures. Decomposition can be initiated by heat or by impurities (e.g. powdered metals (iron, manganese, cobalt, magnesium) and their compounds).
- .2 During the course of transport, these substances shall be shaded from direct sunlight and all sources of heat and be placed in adequately ventilated areas.
- 315 This entry shall not be used for class 6.1 substances which meet the inhalation toxicity criteria for packing group I described in 2.6.2.2.4.3.
- 316 This entry applies only to calcium hypochlorite, dry, when transported in non-friable tablet form.
- 317 "Fissile-excepted" applies only to those fissile materials and packages containing fissile material which are excepted in accordance with 2.7.2.3.5.
- 318 For the purposes of documentation, the proper shipping name shall be supplemented with the technical name (see 3.1.2.8). Technical names need not be shown on the package. When the infectious substances to be transported are unknown, but suspected of meeting the criteria for inclusion in category A and assignment to UN 2814 or UN 2900, the words "suspected category A infectious substance" shall be shown, in parentheses, following the proper shipping name on the transport document, but not on the outer packagings.
- 319 Substances packed and packages marked in accordance with packing instruction P650 are not subject to any other provisions of this Code.
- 321 These storage systems shall always be considered as containing hydrogen.
- 322 When transported in non-friable tablet form, these goods are assigned to packing group III.
- 324 This substance needs to be stabilized when in concentrations of not more than 99%.
- 325 In the case of non-fissile or fissile-excepted uranium hexafluoride, the material shall be classified under UN 2978.
- 326 In the case of fissile uranium hexafluoride, the material shall be classified under UN 2977.
- 327 Waste aerosols consigned in accordance with 5.4.1.4.3.3 may be transported under this entry for the purposes of reprocessing or disposal. They need not be protected against movement and inadvertent discharge provided that measures to prevent dangerous build-up of pressure and dangerous atmospheres are addressed. Waste aerosols, other than those leaking or severely deformed, shall be packed in accordance with packing instruction P207 and special provision PP87, or packing instruction LP200 and special packing provision L2. Leaking or severely deformed aerosols shall be transported in salvage packagings provided appropriate measures are taken to ensure there is no dangerous build-up of pressure. Waste aerosols shall not be transported in closed freight containers.

- 328 This entry applies to fuel cell cartridges, including when contained in equipment or packed with equipment. Fuel cell cartridges installed in or integral to a fuel cell system are regarded as contained in equipment. "Fuel cell cartridge" means an article that stores fuel for discharge into the fuel cell through a valve(s) that controls the discharge of fuel into the fuel cell. Fuel cell cartridges, including when contained in equipment, shall be designed and constructed to prevent fuel leakage under normal conditions of transport.
- Fuel cell cartridge design types using liquids as fuels shall pass an internal pressure test at a pressure of 100 kPa (gauge) without leakage.
- Except for fuel cell cartridges containing hydrogen in metal hydride, which shall be in compliance with special provision 339, each fuel cell cartridge design type shall be shown to pass a 1.2 m drop test onto an unyielding surface, in the orientation most likely to result in failure of the containment system, with no loss of contents.
- When lithium metal or lithium ion batteries are contained in the fuel cell system, the consignment shall be consigned under this entry and under the appropriate entries for UN 3091 LITHIUM METAL BATTERIES CONTAINED IN EQUIPMENT or UN 3481 LITHIUM ION BATTERIES CONTAINED IN EQUIPMENT.
- 332 Magnesium nitrate hexahydrate is not subject to the provisions of this Code.
- 333 Ethanol and gasoline, motor spirit or petrol mixtures for use in spark-ignition engines (e.g. in automobiles, stationary engines and other engines) shall be assigned to this entry regardless of variations in volatility.
- 334 A fuel cell cartridge may contain an activator provided it is fitted with two independent means of preventing unintended mixing with the fuel during transport.
- 335 Mixtures of solids which are not subject to the provisions of this Code and environmentally hazardous liquids assigned to UN 3082 may be classified and transported as UN 3077, provided there is no free liquid visible at the time the substance is loaded or at the time the packaging or cargo transport unit is closed. If free liquid is visible at the time the mixture is loaded or at the time the packaging or cargo transport unit is closed, the mixture shall be classified as UN 3082. Each cargo transport unit shall be leakproof when used as a bulk container. Sealed packets and articles containing less than 10 mL of an environmentally hazardous liquid assigned to UN 3082, absorbed into a solid material but with no free liquid in the packet or article, or containing less than 10 g of an environmentally hazardous solid assigned to UN 3077, are not subject to the provisions of this Code.
- 338 Each fuel cell cartridge transported under this entry and designed to contain a liquefied flammable gas shall:
- .1 be capable of withstanding, without leakage or bursting, a pressure of at least two times the equilibrium pressure of the contents at 55°C;
 - .2 not contain more than 200 mL liquefied flammable gas, the vapour pressure of which shall not exceed 1 000 kPa at 55°C; and
 - .3 pass the hot water bath test prescribed in 6.2.4.1 of chapter 6.2.
- 339 Fuel cell cartridges containing hydrogen in a metal hydride transported under this entry shall have a water capacity less than or equal to 120 mL. The pressure in the fuel cell cartridge shall not exceed 5 MPa at 55°C. The design type shall withstand, without leaking or bursting, a pressure of two (2) times the design pressure of the cartridge at 55°C or 200 kPa more than the design pressure of the cartridge at 55°C, whichever is greater. The pressure at which this test is conducted is referred to in the Drop Test and the Hydrogen Cycling Test as the "minimum shell burst pressure".
- Fuel cell cartridges shall be filled in accordance with procedures provided by the manufacturer. The manufacturer shall provide the following information with each fuel cell cartridge:
- .1 Inspection procedures to be carried out before initial filling and before refilling of the fuel cell cartridge;
 - .2 Safety precautions and potential hazards to be aware of;
 - .3 Method for determining when the rated capacity has been achieved;
 - .4 Minimum and maximum pressure range;
 - .5 Minimum and maximum temperature range; and
 - .6 Any other requirements to be met for initial filling and refilling, including the type of equipment to be used for initial filling and refilling.
- The fuel cell cartridges shall be designed and constructed to prevent fuel leakage under normal conditions of transport. Each cartridge design type, including cartridges integral to a fuel cell, shall be subjected to and shall pass the following tests:

Drop test

A 1.8 m drop test onto an unyielding surface in four different orientations:

- .1 Vertically, on the end containing the shut-off valve assembly;
- .2 Vertically, on the end opposite to the shut-off valve assembly;
- .3 Horizontally, onto a steel apex with a diameter of 38 mm, with the steel apex in the upward position; and
- .4 At a 45° angle on the end containing the shut-off valve assembly.

There shall be no leakage, determined by using a soap bubble solution or other equivalent means on all possible leak locations, when the cartridge is charged to its rated charging pressure. The fuel cell cartridge shall then be hydrostatically pressurized to destruction. The recorded burst pressure shall exceed 85% of the minimum shell burst pressure.

Fire test

A fuel cell cartridge filled to rated capacity with hydrogen shall be subjected to a fire engulfment test. The cartridge design, which may include a vent feature integral to it, is deemed to have passed the fire test if:

- .1 The internal pressure vents to zero gauge pressure without rupture of the cartridge; or
- .2 The cartridge withstands the fire for a minimum of 20 minutes without rupture.

Hydrogen cycling test

This test is intended to ensure that a fuel cell cartridge design stress limits are not exceeded during use.

The fuel cell cartridge shall be cycled from not more than 5% rated hydrogen capacity to not less than 95% rated hydrogen capacity and back to not more than 5% rated hydrogen capacity. The rated charging pressure shall be used for charging and temperatures shall be held within the operating temperature range. The cycling shall be continued for at least 100 cycles.

Following the cycling test, the fuel cell cartridge shall be charged and the water volume displaced by the cartridge shall be measured. The cartridge design is deemed to have passed the hydrogen cycling test if the water volume displaced by the cycled cartridge does not exceed the water volume displaced by an uncycled cartridge charged to 95% rated capacity and pressurized to 75% of its minimum shell burst pressure.

Production leak test

Each fuel cell cartridge shall be tested for leaks at 15°C ± 5°C, while pressurized to its rated charging pressure. There shall be no leakage, determined by using a soap bubble solution or other equivalent means on all possible leak locations.

Each fuel cell cartridge shall be permanently marked with the following information:

- .1 The rated charging pressure in megapascals (MPa);
- .2 The manufacturer's serial number of the fuel cell cartridges or unique identification number; and
- .3 The date of expiry based on the maximum service life (year in four digits; month in two digits).

340 Chemical kits, first aid kits and polyester resin kits containing dangerous substances in inner packagings which do not exceed the quantity limits for excepted quantities applicable to individual substances as specified in column 7b of the Dangerous Goods List may be transported in accordance with chapter 3.5. Class 5.2 substances, although not individually authorized as excepted quantities in the Dangerous Goods List, are authorized in such kits and are assigned code E2 (see 3.5.1.2).

341 Bulk transport of infectious substances in BK2 bulk containers is only permitted for infectious substances contained in animal material as defined in 1.2.1 (see 4.3.2.4.1).

342 Glass inner receptacles (such as ampoules or capsules) intended only for use in sterilization devices, when containing less than 30 mL of ethylene oxide per inner packaging with not more than 300 mL per outer packaging, may be transported in accordance with the provisions in chapter 3.5, irrespective of the indication of "E0" in column 7b of the Dangerous Goods List provided that:

- .1 After filling, each glass inner receptacle has been determined to be leak tight by placing the glass inner receptacle in a hot water bath at a temperature, and for a period of time, sufficient to ensure that an internal pressure equal to the vapour pressure of ethylene oxide at 55°C is achieved. Any glass inner receptacle showing evidence of leakage, distortion or other defect under this test shall not be transported under the terms of this special provision;
- .2 In addition to the packaging required by 3.5.2, each glass inner receptacle is placed in a sealed plastics bag compatible with ethylene oxide and capable of containing the contents in the event of breakage or leakage of the glass inner receptacle; and
- .3 Each glass inner receptacle is protected by a means of preventing puncture of the plastics bag (e.g. sleeves or cushioning) in the event of damage to the packaging (e.g. by crushing).

- 343 This entry applies to crude oil containing hydrogen sulphide in sufficient concentration that vapours evolved from the crude oil can present an inhalation hazard. The packing group assigned shall be determined by the flammability hazard and inhalation hazard, in accordance with the degree of danger presented.
- 344 The provisions of 6.2.4 shall be met.
- 345 This gas contained in open cryogenic receptacles with a maximum capacity of one litre constructed with glass double walls having the space between the inner and outer wall evacuated (vacuum insulated) is not subject to the provisions of this Code provided each receptacle is transported in an outer packaging with suitable cushioning or absorbent materials to protect it from impact damage.
- 346 Open cryogenic receptacles conforming to the requirements of packing instruction P203 and containing no dangerous goods except for UN 1977, nitrogen, refrigerated liquid, which is fully absorbed in a porous material, are not subject to any other provisions of this Code.
- 347 This entry shall only be used if the results of test series 6(d) of part I of the Manual of Tests and Criteria have demonstrated that any hazardous effects arising from functioning are confined within the package.
- 348 Batteries manufactured after 31 December 2011 shall be marked with the Watt hour rating on the outside case.
- 349 Mixtures of a hypochlorite with an ammonium salt are not to be accepted for transport. UN 1791 hypochlorite solution is a substance of class 8.
- 350 Ammonium bromate and its aqueous solutions and mixtures of a bromate with an ammonium salt are not to be accepted for transport.
- 351 Ammonium chlorate and its aqueous solutions and mixtures of a chlorate with an ammonium salt are not to be accepted for transport.
- 352 Ammonium chlorite and its aqueous solutions and mixtures of a chlorite with an ammonium salt are not to be accepted for transport.
- 353 Ammonium permanganate and its aqueous solutions and mixtures of a permanganate with an ammonium salt are not to be accepted for transport.
- 354 This substance is toxic by inhalation.
- 355 Oxygen cylinders for emergency use transported under this entry may include installed actuating cartridges (cartridges, power device of class 1.4, compatibility group C or S), without changing the classification of class 2.2 provided the total quantity of deflagrating (propellant) explosives does not exceed 3.2 g per oxygen cylinder. The cylinders with the installed actuating cartridges as prepared for transport shall have an effective means of preventing inadvertent activation.
- 356 Metal hydride storage systems installed in vehicles, vessels or aircrafts or in completed components or intended to be installed in vehicles, vessels or aircrafts shall be approved by the competent authority before acceptance for transport. The transport document shall include an indication that the package was approved by the competent authority or a copy of the competent authority approval shall accompany each consignment.
- 357 Petroleum crude oil containing hydrogen sulphide in sufficient concentration that vapours evolved from the crude oil can present an inhalation hazard shall be consigned under the entry UN 3494 PETROLEUM SOUR CRUDE OIL, FLAMMABLE, TOXIC.
- 358 Nitroglycerin solution in alcohol with more than 1% but not more than 5% nitroglycerin may be classified in class 3 and assigned to UN 3064 provided all the requirements of packing instruction P300 are complied with.
- 359 Nitroglycerin solution in alcohol with more than 1% but not more than 5% nitroglycerin shall be classified in class 1 and assigned to UN 0144 if not all the requirements of packing instruction P300 are complied with.
- 360 Vehicles only powered by lithium metal batteries or lithium ion batteries shall be consigned under the entry UN 3171 BATTERY POWERED VEHICLE.
- 361 This entry applies to electric double layer capacitors with an energy storage capacity greater than 0.3 Wh. Capacitors with an energy storage capacity of 0.3 Wh or less are not subject to the provisions of this Code. Energy storage capacity means the energy held by a capacitor, as calculated using the nominal voltage and capacitance. All capacitors to which this entry applies, including capacitors containing an electrolyte that does not meet the classification criteria of any class or division of dangerous goods, shall meet the following conditions:
- .1 Capacitors not installed in equipment shall be transported in an uncharged state. Capacitors installed in equipment shall be transported either in an uncharged state or protected against short circuit;
 - .2 Each capacitor shall be protected against a potential short circuit hazard in transport as follows:

- .1 when a capacitor's energy storage capacity is less than or equal to 10 Wh or when the energy storage capacity of each capacitor in a module is less than or equal to 10 Wh, the capacitor or module shall be protected against short circuit or be fitted with a metal strap connecting the terminals; and
- .2 when the energy storage capacity of a capacitor or a capacitor in a module is more than 10 Wh, the capacitor or module shall be fitted with a metal strap connecting the terminals;
- .3 Capacitors containing dangerous goods shall be designed to withstand a 95 kPa pressure differential;
- .4 Capacitors shall be designed and constructed to safely relieve pressure that may build up in use, through a vent or a weak point in the capacitor casing. Any liquid which is released upon venting shall be contained by the packaging or by the equipment in which a capacitor is installed; and
- .5 Capacitors manufactured after 31 December 2013 shall be marked with the energy storage capacity in Wh.

Capacitors containing an electrolyte not meeting the classification criteria of any class or division of dangerous goods, including when installed in equipment, are not subject to other provisions of this Code.

Capacitors containing an electrolyte meeting the classification criteria of any class or division of dangerous goods, with an energy storage capacity of 10 Wh or less are not subject to other provisions of this Code when they are capable of withstanding a 1.2 m drop test unpackaged on an unyielding surface without loss of contents.

Capacitors containing an electrolyte meeting the classification criteria of any class or division of dangerous goods that are not installed in equipment and with an energy storage capacity of more than 10 Wh are subject to the provisions of this Code.

Capacitors installed in the equipment and containing an electrolyte meeting the classification criteria of any class or division of dangerous goods, are not subject to other provisions of this Code provided the equipment is packaged in a strong outer packaging constructed of suitable material and of adequate strength and design, in relation to the packaging's intended use and in such a manner as to prevent accidental functioning of capacitors during transport. Large robust equipment containing capacitors may be offered for transport unpackaged or on pallets when capacitors are afforded equivalent protection by the equipment in which they are contained.

Note: Capacitors which by design maintain a terminal voltage (e.g. asymmetrical capacitors) do not belong to this entry.

362 This entry applies to liquids, pastes or powders, pressurized with a propellant which meets the definition of a gas in 2.2.1.2.1 or 2.2.1.2.2.

Note: A chemical under pressure in an aerosol dispenser shall be transported under UN 1950.

The following provisions shall apply:

- .1 the chemical under pressure shall be classified based on the hazard characteristics of the components in the different states:
 - the propellant;
 - the liquid; or
 - the solid.

If one of these components, which can be a pure substance or a mixture, needs to be classified as flammable, the chemical under pressure shall be classified as flammable in class 2.1. Flammable components are flammable liquids and liquid mixtures, flammable solids and solid mixtures or flammable gases and gas mixtures meeting the following criteria:

- .1 a flammable liquid is a liquid having a flashpoint of not more than 93°C;
 - .2 a flammable solid is a solid which meets the criteria in 2.4.2.2 of this Code;
 - .3 a flammable gas is a gas which meets the criteria in 2.2.2.1 of this Code;
- .2 gases of class 2.3 and gases with a subsidiary risk of 5.1 shall not be used as a propellant in a chemical under pressure;
 - .3 where the liquid or solid components are classified as dangerous goods of class 6.1, packing groups II or III, or class 8, packing groups II or III, the chemical under pressure shall be assigned a subsidiary risk of class 6.1 or class 8 and the appropriate UN number shall be assigned. Components classified in class 6.1, packing group I, or class 8, packing group I, shall not be used for transport under this proper shipping name;
 - .4 in addition, chemicals under pressure with components meeting the properties of: class 1, explosives; class 3, liquid desensitized explosives; class 4.1, self-reactive substances and solid desensitized explosives; class 4.2, substances liable to spontaneous combustion; class 4.3, substances which, in contact with water, emit flammable gases; class 5.1, oxidizing substances;

- class 5.2, organic peroxides; class 6.2, Infectious substances or class 7, Radioactive material, shall not be used for transport under this proper shipping name;
- 363 .5 substances to which PP86 or TP7 are assigned in column 9 and column 14 of the Dangerous Goods List in chapter 3.2 and therefore require air to be eliminated from the vapour space, shall not be used for transport under this UN number but shall be transported under their respective UN numbers as listed in the Dangerous Goods List of chapter 3.2.
- .1 This entry applies to engines or machinery, powered by fuels classified as dangerous goods via internal combustion systems or fuel cells (e.g. combustion engines, generators, compressors, turbines, heating units, etc.), except those which are assigned under UN 3166 or UN 3363;
- .2 Engines or machinery which are empty of liquid or gaseous fuels and which do not contain other dangerous goods, are not subject to this Code.
- Note 1:** An engine or machinery is considered to be empty of liquid fuel when the liquid fuel tank has been drained and the engine or machinery cannot be operated due to a lack of fuel. Engine or machinery components such as fuel lines, fuel filters and injectors do not need to be cleaned, drained or purged to be considered empty of liquid fuels. In addition, the liquid fuel tank does not need to be cleaned or purged.
- Note 2:** An engine or machinery is considered to be empty of gaseous fuels when the gaseous fuel tanks are empty of liquid (for liquefied gases), the positive pressure in the tanks does not exceed 2 bar and the fuel shut-off or isolation valve is closed and secured.
- .3 Engines and machinery containing fuels meeting the classification criteria of class 3, shall be consigned under the entries UN No. 3528 ENGINE, INTERNAL COMBUSTION, FLAMMABLE LIQUID POWERED or UN 3528 ENGINE, FUEL CELL, FLAMMABLE LIQUID POWERED or UN 3528 MACHINERY, INTERNAL COMBUSTION, FLAMMABLE LIQUID POWERED or UN 3528 MACHINERY, FUEL CELL, FLAMMABLE LIQUID POWERED, as appropriate.
- .4 Engines and machinery containing fuels meeting the classification criteria of class 2.1, shall be consigned under the entries UN 3529 ENGINE, INTERNAL COMBUSTION, FLAMMABLE GAS POWERED or UN 3529 ENGINE, FUEL CELL, FLAMMABLE GAS POWERED or UN 3529 MACHINERY, INTERNAL COMBUSTION, FLAMMABLE GAS POWERED or UN 3529 MACHINERY, FUEL CELL, FLAMMABLE GAS POWERED, as appropriate.
- Engines and machinery powered by both a flammable gas and a flammable liquid shall be consigned under the appropriate UN 3529 entry.
- .5 Engines and machinery containing liquid fuels meeting the classification criteria of 2.9.3 for environmentally hazardous substances and not meeting the classification criteria of any other class or division, shall be consigned under the entries UN 3530 ENGINE, INTERNAL COMBUSTION or UN 3530 MACHINERY, INTERNAL COMBUSTION, as appropriate.
- .6 Engines or machinery may contain other dangerous goods than fuels (e.g. batteries, fire extinguishers, compressed gas accumulators or safety devices) required for their functioning or safe operation without being subject to any additional requirements for these other dangerous goods, unless otherwise specified in this Code.
- .7 The engines or machinery are not subject to any other provisions of this Code, except for special provision 972, part 7 and column 16a and 16b in the dangerous goods list, if the following conditions are met:
- .1 the engine or machinery, including the means of containment containing dangerous goods, shall be in compliance with the construction requirements specified by the competent authority;
 - .2 any valves or openings (e.g. venting devices) shall be closed during transport;
 - .3 the engines or machinery shall be oriented to prevent inadvertent leakage of dangerous goods and secured by means capable of restraining the engines or machinery to prevent any movement during transport which would change the orientation or cause them to be damaged;
 - .4 for UN 3528 and UN 3530:
 - where the engine or machinery contains more than 60 L of liquid fuel and has a capacity of not more than 450 L, the labelling requirements of 5.2.2 shall apply;
 - where the engine or machinery contains more than 60 L of liquid fuel and has a capacity of more than 450 L but not more than 3,000 L, it shall be labelled on two opposing sides in accordance with 5.2.2;
 - where the engine or machinery contains more than 60 L of liquid fuel and has a capacity of more than 3,000 L, it shall be placarded on two opposing sides in accordance with 5.3.1.1.2;
 - for UN 3530, in addition the marking requirements of 5.2.1.6 apply.

- .5 for UN 3529:
- where the fuel tank of the engine or machinery has a water capacity of not more than 450 L, the labelling requirements of 5.2.2 shall apply;
 - where the fuel tank of the engine or machinery has a water capacity of more than 450 L but not more than 1,000 L, it shall be labelled on two opposing sides in accordance with 5.2.2;
 - where the fuel tank of the engine or machinery has a water capacity of more than 1,000 L, it shall be placarded on two opposing sides in accordance with 5.3.1.1.2;
- .6 a transport document in accordance with 5.4 is required and shall contain the following additional statement “Transport in accordance with special provision 363”.
- 364 This article may only be transported under the provisions of chapter 3.4 if, as presented for transport, the package is capable of passing the test in accordance with test series 6(d) of part I of the Manual of Tests and Criteria as determined by the competent authority.
- 365 For manufactured instruments and articles containing mercury, see UN 3506.
- 366 Manufactured instruments and articles containing not more than 1 kg of mercury are not subject to the provisions of this Code.
- 367 For the purposes of documentation and package marking:
- The proper shipping name “PAINT RELATED MATERIAL” may be used for consignments of packages containing “PAINT” and “PAINT RELATED MATERIAL” in the same package;
- The proper shipping name “PAINT RELATED MATERIAL, CORROSIVE, FLAMMABLE” may be used for consignments of packages containing “PAINT, CORROSIVE, FLAMMABLE” and “PAINT RELATED MATERIAL, CORROSIVE, FLAMMABLE” in the same package;
- The proper shipping name “PAINT RELATED MATERIAL, FLAMMABLE, CORROSIVE” may be used for consignments of packages containing “PAINT, FLAMMABLE, CORROSIVE” and “PAINT RELATED MATERIAL, FLAMMABLE, CORROSIVE” in the same package; and
- The proper shipping name “PRINTING INK RELATED MATERIAL” may be used for consignments of packages containing “PRINTING INK” and “PRINTING INK RELATED MATERIAL” in the same package.
- 368 In the case of non-fissile or fissile-excepted uranium hexafluoride, the material shall be classified under UN 3507 or UN 2978.
- 369 In accordance with 2.0.3.5, this radioactive material in an excepted package possessing toxic and corrosive properties is classified in class 6.1 with radioactive material and corrosivity subsidiary risks. Uranium hexafluoride may be classified under this entry only if the conditions of 2.7.2.4.1.2, 2.7.2.4.1.5, 2.7.2.4.5.2 and, for fissile-excepted material, of 2.7.2.3.6 are met.
- In addition to the provisions applicable to the transport of class 6.1 substances with a corrosivity subsidiary risk, the provisions of 5.1.3.2, 5.1.5.2.2, 5.1.5.4.1.2, 7.1.4.5.9, 7.1.4.5.10, 7.1.4.5.12, and 7.8.4.1 to 7.8.4.6 shall apply.
- No class 7 label is required to be displayed.
- 370 This entry applies to:
- ammonium nitrate with more than 0.2% combustible substances, including any organic substance calculated as carbon, to the exclusion of any added substance; and
 - ammonium nitrate with not more than 0.2% combustible substances, including any organic substance calculated as carbon, to the exclusion of any added substance, that gives a positive result when tested in accordance with test series 2 (see Manual of Tests and Criteria, part I). See also UN 1942.
- 371 .1 This entry also applies to articles, containing a small pressure receptacle with a release device. Such articles shall comply with the following requirements:
- .1 the water capacity of the pressure receptacle shall not exceed 0.5 L and the working pressure shall not exceed 25 bar at 15°C;
 - .2 the minimum burst pressure of the pressure receptacle shall be at least four times the pressure of the gas at 15°C;
 - .3 each article shall be manufactured in such a way that unintentional firing or release is avoided under normal conditions of handling, packing, transport and use. This may be fulfilled by an additional locking device linked to the activator;
 - .4 each article shall be manufactured in such a way as to prevent hazardous projections of the pressure receptacle or parts of the pressure receptacle;
 - .5 each pressure receptacle shall be manufactured from material which will not fragment upon rupture;

- .6 the design type of the article shall be subjected to a fire test. For this test, the provisions of paragraphs 16.6.1.2 except subparagraph (g), 16.6.1.3.1 to 16.6.1.3.6, 16.6.1.3.7 (b) and 16.6.1.3.8 of the Manual of Tests and Criteria shall be applied. It shall be demonstrated that the article relieves its pressure by means of a fire degradable seal or other pressure relief device, in such a way that the pressure receptacle will not fragment and that the article or fragments of the article do not rocket more than 10 m; and
- .7 the design type of the article shall be subjected to the following test. A stimulating mechanism shall be used to initiate one article in the middle of the packaging. There shall be no hazardous effects outside the package such as disruption of the package, metal fragments or a receptacle which passes through the packaging.
- .2 The manufacturer shall produce technical documentation of the design type, manufacture as well as the tests and their results. The manufacturer shall apply procedures to ensure that articles produced in series are made of good quality, conform to the design type and are able to meet the requirements in .1. The manufacturer shall provide such information to the competent authority on request.

372 This entry applies to asymmetric capacitors with an energy storage capacity greater than 0.3 Wh. Capacitors with an energy storage capacity of 0.3 Wh or less are not subject to the provisions of this Code.

Energy storage capacity means the energy stored in a capacitor, as calculated according to the following equation:

$$Wh = \frac{\frac{1}{2} C_N (U_R^2 - U_L^2)}{3,600}$$

using the nominal capacitance (C_N), rated voltage (U_R) and rated lower limit voltage (U_L).

All asymmetric capacitors to which this entry applies shall meet the following conditions:

- .1 capacitors or modules shall be protected against short circuit;
- .2 capacitors shall be designed and constructed to safely relieve pressure that may build up in use, through a vent or a weak point in the capacitor casing. Any liquid which is released upon venting shall be contained by packaging or by equipment in which a capacitor is installed;
- .3 capacitors manufactured after 31 December 2015 shall be marked with the energy storage capacity in Wh;
- .4 capacitors containing an electrolyte meeting the classification criteria of any class or division of dangerous goods shall be designed to withstand a 95 kPa pressure differential;

Capacitors containing an electrolyte not meeting the classification criteria of any class or division of dangerous goods, including when configured in a module or when installed in equipment are not subject to other provisions of this Code. Capacitors containing an electrolyte meeting the classification criteria of any class or division of dangerous goods, with an energy storage capacity of 20 Wh or less, including when configured in a module, are not subject to other provisions of this Code when the capacitors are capable of withstanding a 1.2 m drop test unpackaged on an unyielding surface without loss of contents.

Capacitors containing an electrolyte meeting the classification criteria of any class or division of dangerous goods that are not installed in equipment and with an energy storage capacity of more than 20 Wh are subject to this Code.

Capacitors installed in equipment and containing an electrolyte meeting the classification criteria of any class or division of dangerous goods, are not subject to other provisions of these regulations provided that the equipment is packaged in a strong outer packaging constructed of suitable material, and of adequate strength and design, in relation to the packaging's intended use and in such a manner as to prevent accidental functioning of capacitors during transport. Large robust equipment containing capacitors may be offered for transport unpackaged or on pallets when capacitors are afforded equivalent protection by the equipment in which they are contained.

Note: Notwithstanding the provisions of this special provision, nickel-carbon asymmetric capacitors containing class 8 alkaline electrolytes shall be transported as UN 2795, BATTERIES, WET, FILLED WITH ALKALI electric storage.

373 Neutron radiation detectors containing non-pressurized boron trifluoride gas may be transported under this entry provided that the following conditions are met:

- .1 Each radiation detector shall meet the following conditions:
 - .1 the pressure in each detector shall not exceed 105 kPa absolute at 20°C;
 - .2 the amount of gas shall not exceed 13 g per detector;
 - .3 each detector shall be manufactured under a registered quality assurance programme;

Note: The application of ISO 9001:2008 may be considered acceptable for this purpose.

- .4 each neutron radiation detector shall be of welded metal construction with brazed metal to ceramic feed through assemblies. These detectors shall have a minimum burst pressure of 1800 kPa as demonstrated by design type qualification testing; and
- .5 each detector shall be tested to a 1×10^{-10} cm³/s leak tightness standard before filling.
- .2 Radiation detectors transported as individual components shall be transported as follows:
 - .1 detectors shall be packed in a sealed intermediate plastics liner with sufficient absorbent or adsorbent material to absorb or adsorb the entire gas contents;
 - .2 they shall be packed in strong outer packaging. The completed package shall be capable of withstanding a 1.8 m drop test without leakage of gas contents from detectors; and
 - .3 the total amount of gas from all detectors per outer packaging shall not exceed 52 g.
- .3 Completed neutron radiation detection systems containing detectors meeting the conditions of .1 shall be transported as follows:
 - .1 the detectors shall be contained in a strong sealed outer casing;
 - .2 the casing shall contain sufficient absorbent or adsorbent material to absorb or adsorb the entire gas contents; and
 - .3 the completed systems shall be packed in strong outer packagings capable of withstanding a 1.8 m drop test without leakage unless a system's outer casing affords equivalent protection.

Packing instruction P200 of 4.1.4.1 is not applicable.

The transport document shall include the statement "Transport in accordance with special provision 373".

Neutron radiation detectors containing not more than 1 g of boron trifluoride, including those with solder glass joints, are not subject to this Code provided they meet the requirements in paragraph .1 and are packed in accordance with paragraph .2. Radiation detection systems containing such detectors are not subject to this Code provided they are packed in accordance with paragraph .3.

Neutron radiation detectors shall be stowed in accordance with stowage Category A.

- 376 Lithium ion cells or batteries and lithium metal cells or batteries identified as being damaged or defective such that they do not conform to the type tested according to the applicable provisions of the Manual of Tests and Criteria shall comply with the requirements of this special provision.

For the purposes of this special provision, these may include, but are not limited to:

- Cells or batteries identified as being defective for safety reasons;
- Cells or batteries that have leaked or vented;
- Cells or batteries that cannot be diagnosed prior to transport; or
- Cells or batteries that have sustained physical or mechanical damage.

Note: In assessing a battery as damaged or defective, the type of battery and its previous use and misuse shall be taken into account.

Cells and batteries shall be transported according to the provisions applicable to UN 3090, UN 3091, UN 3480 and UN 3481, except special provision 230 and as otherwise stated in this special provision.

Packages shall be marked "DAMAGED/DEFECTIVE LITHIUM-ION BATTERIES" or "DAMAGED/DEFECTIVE LITHIUM METAL BATTERIES", as applicable.

Cells and batteries shall be packed in accordance with packing instructions P908 of 4.1.4.1 or LP904 of 4.1.4.3, as applicable.

Cells and batteries liable to rapidly disassemble, dangerously react, produce a flame or a dangerous evolution of heat or a dangerous emission of toxic, corrosive or flammable gases or vapours under normal conditions of transport shall not be transported except under conditions specified by the competent authority.

- 377 Lithium ion and lithium metal cells and batteries and equipment containing such cells and batteries transported for disposal or recycling, either packed together with or packed without non-lithium batteries, may be packaged in accordance with packing instruction P909 of 4.1.4.1.

These cells and batteries are not subject to the requirements of section 2.9.4.

Packages shall be marked "LITHIUM BATTERIES FOR DISPOSAL" or "LITHIUM BATTERIES FOR RECYCLING".

Identified damaged or defective batteries shall be transported in accordance with special provision 376 and packaged in accordance with P908 of 4.1.4.1 or LP904 of 4.1.4.3, as applicable.

- 378 Radiation detectors containing this gas in non-refillable pressure receptacles not meeting the requirements of chapter 6.2 and packing instruction P200 of 4.1.4.1 may be transported under this entry provided:

- .1 The working pressure in each receptacle does not exceed 50 bar;

- .2 The receptacle capacity does not exceed 12 litres;
- .3 Each receptacle has a minimum burst pressure of at least 3 times the working pressure when a relief device is fitted and at least 4 times the working pressure when no relief device is fitted;
- .4 Each receptacle is manufactured from material which will not fragment upon rupture;
- .5 Each detector is manufactured under a registered quality assurance programme;
Note: ISO 9001:2008 may be used for this purpose.
- .6 Detectors are transported in strong outer packagings. The complete package shall be capable of withstanding a 1.2 metre drop test without breakage of the detector or rupture of the outer packaging. Equipment that includes a detector shall be packed in a strong outer packaging unless the detector is afforded equivalent protection by the equipment in which it is contained; and
- .7 The transport document includes the following statement "Transport in accordance with special provision 378".

Radiation detectors, including detectors in radiation detection systems, are not subject to any other requirements of this Code if the detectors meet the requirements in .1 to .6 above and the capacity of detector receptacles does not exceed 50 ml.

379 Anhydrous ammonia adsorbed on a solid or absorbed in a solid contained in ammonia dispensing systems or receptacles intended to form part of such systems are not subject to the other provisions of this Code if the following conditions are observed:

- .1 The adsorption or absorption presents the following properties:
 - .1 the pressure at a temperature of 20°C in the receptacle is less than 0.6 bar;
 - .2 the pressure at a temperature of 35°C in the receptacle is less than 1 bar;
 - .3 the pressure at a temperature of 85°C in the receptacle is less than 12 bar;
- .2 The adsorbent or absorbent material shall not have dangerous properties listed in classes 1 to 8;
- .3 The maximum contents of a receptacle shall be 10 kg of ammonia; and
- .4 Receptacles containing adsorbed or absorbed ammonia shall meet the following conditions:
 - .1 receptacles shall be made of a material compatible with ammonia as specified in ISO 11114-1:2012;
 - .2 receptacles and their means of closure shall be hermetically sealed and able to contain the generated ammonia;
 - .3 each receptacle shall be able to withstand the pressure generated at 85°C with a volumetric expansion no greater than 0.1%;
 - .4 each receptacle shall be fitted with a device that allows for gas evacuation once pressure exceeds 15 bar without violent rupture, explosion or projection; and
 - .5 each receptacle shall be able to withstand a pressure of 20 bar without leakage when the pressure relief device is deactivated.

When transported in an ammonia dispenser, the receptacles shall be connected to the dispenser in such a way that the assembly is guaranteed to have the same strength as a single receptacle.

The properties of mechanical strength mentioned in this special provision shall be tested using a prototype of a receptacle and/or dispenser filled to nominal capacity, by increasing the temperature until the specified pressures are reached.

The test results shall be documented, shall be traceable and shall be communicated to the relevant authorities upon request.

380 If a vehicle is powered by a flammable liquid and a flammable gas internal combustion engine, it shall be assigned to UN 3166 VEHICLE, FLAMMABLE GAS POWERED.

381 Large packagings conforming to the packing group III performance level used in accordance with packing instruction LP02 of 4.1.4.3, as prescribed in the IMDG Code (amendment 37-14), may be used until 31 December 2022.

382 Polymeric beads may be made from polystyrene, poly(methyl methacrylate) or other polymeric material. When it can be demonstrated that no flammable vapour, resulting in a flammable atmosphere, is evolved according to test U1 (Test method for substances liable to evolve flammable vapours) of part III, subsection 38.4.4 of the Manual of Tests and Criteria, polymeric beads, expandable, need not be classified under this UN number. This test should only be performed when declassification of a substance is considered.

383 Table tennis balls manufactured from celluloid are not subject to this Code where the net mass of each table tennis ball does not exceed 3.0 g and the total net mass of table tennis balls does not exceed 500 g per package.

- 384 The label to be used is Model No. 9A, see 5.2.2.2.2.
Note: The class 9 label (Model No. 9) may continue to be used until 31 December 2018.
- 385 This entry applies to vehicles powered by flammable liquid or gas internal combustion engines or fuel cells.
Hybrid electric vehicles powered by both an internal combustion engine and wet batteries, sodium batteries, lithium metal batteries or lithium ion batteries, transported with the batteries installed shall be consigned under this entry. Vehicles powered by wet batteries, sodium batteries, lithium metal batteries or lithium ion batteries, transported with the batteries installed, shall be consigned under the entry UN No. 3171 BATTERY-POWERED VEHICLE (see special provision 240).
For the purpose of this special provision, vehicles are self-propelled apparatus designed to carry one or more persons or goods. Examples of such vehicles are cars, motorcycles, trucks, locomotives, scooters, three- and four-wheeled vehicles or motorcycles, lawn tractors, self-propelled farming and construction equipment, boats and aircraft.
Dangerous goods such as batteries, air bags, fire extinguishers, compressed gas accumulators, safety devices and other integral components of the vehicle that are necessary for the operation of the vehicle or for the safety of its operator or passengers, shall be securely installed in the vehicle and are not otherwise subject to this Code.
- 386 When substances are stabilized by temperature control, the provisions of 7.3.7 apply. When chemical stabilization is employed, the person offering the packaging, IBC or tank for transport shall ensure that the level of stabilization is sufficient to prevent the substance in the packaging, IBC or tank from dangerous polymerization at a bulk mean temperature of 50°C, or, in the case of a portable tank, 45°C. Where chemical stabilization becomes ineffective at lower temperatures within the anticipated duration of transport, temperature control is required. In making this determination factors to be taken into consideration include, but are not limited to, the capacity and geometry of the packaging, IBC or tank and the effect of any insulation present, the temperature of the substance when offered for transport, the duration of the journey and the ambient temperature conditions typically encountered in the journey (considering also the season of year), the effectiveness and other properties of the stabilizer employed, applicable operational controls imposed by regulation (e.g. requirements to protect from sources of heat, including other cargo transported at a temperature above ambient) and any other relevant factors.”
- 900 The transport of the following substances is prohibited:
AMMONIUM HYPOCHLORITE
AMMONIUM NITRATE liable to self-heating sufficient to initiate decomposition
AMMONIUM NITRITES and mixtures of an inorganic nitrite with an ammonium salt
CHLORIC ACID, AQUEOUS SOLUTION with more than 10% chloric acid
ETHYL NITRITE pure
HYDROCYANIC ACID, AQUEOUS SOLUTION (HYDROGEN CYANIDE, AQUEOUS SOLUTION) with more than 20% hydrogen cyanide
HYDROGEN CHLORIDE, REFRIGERATED LIQUID
HYDROGEN CYANIDE SOLUTION, IN ALCOHOL with more than 45% hydrogen cyanide
MERCURY OXYCYANIDE pure
METHYL NITRITE
PERCHLORIC ACID with more than 72% acid, by mass
SILVER PICRATE, dry or wetted with less than 30% water by mass
ZINC AMMONIUM NITRITE
See also special provisions 349, 350, 351, 352 and 353.
- 903 HYPOCHLORITE MIXTURES with 10% or less available CHLORINE are not subject to the provisions of this Code.
- 904 The provisions of this Code, except for the marine pollution aspects, do not apply to these substances if they are completely miscible with water, except when transported in receptacles with a capacity greater than 250 L and in tanks.
- 905 May only be shipped as an 80% solution in TOLUENE. The pure product is shock-sensitive and decomposes with explosive violence and the possibility of detonation when heated under confinement. Can be ignited by impact.
- 907 The consignment shall be accompanied by a certificate from a recognized authority stating:
– moisture content;
– fat content;
– details of anti-oxidant treatment for meals older than 6 months (for UN 2216 only);

- anti-oxidant concentration at the time of shipment, which must exceed 100 mg/kg (for UN 2216 only);
 - packing, number of bags and total mass of the consignment;
 - temperature of fishmeal at the time of despatch from the factory;
 - date of production.
- No weathering/curing is required prior to loading. Fishmeal under UN 1374 shall have been weathered for not less than 28 days before shipment.
- When fishmeal is packed into containers, the containers shall be packed in such a way that the free air space has been restricted to the minimum.
- 912 This entry also covers solutions in water with concentrations above 70%.
- 916 The provisions of this Code do not apply to this substance when:
- mechanically produced, with a particle size of 53 microns or greater; or
 - chemically produced, with a particle size of 840 microns or greater.
- 917 Scrap with rubber content below 45% or exceeding 840 microns and fully vulcanized hard rubber are not subject to the provisions of this Code.
- 920 Bars, ingots or sticks are not subject to the provisions of this Code.
- 921 Zirconium, dry, 254 microns or thicker is not subject to the provisions of this Code.
- 922 LEAD PHOSPHITE, DIBASIC which is accompanied by the certificate from the shipper stating that the substance, as offered for shipment, has been stabilized in such a way that it does not possess the properties of class 4.1 is not subject to the provisions of this Code.
- 923 The temperature shall be checked regularly.
- 925 The provisions of this Code do not apply to:
- non-activated carbon blacks of mineral origin;
 - a consignment of carbon if it passes the tests for self-heating substances as reflected in the Manual of Tests and Criteria (see 33.3.1.3.3), and is accompanied by a certificate from a laboratory accredited by the competent authority, stating that the product to be loaded has been correctly sampled by trained staff from that laboratory and that the sample was correctly tested and has passed the test; and
 - carbons made by a steam activation process.
- 926 This substance shall preferably have been weathered for not less than one month before shipment unless a certificate from a person recognized by the competent authority of the country of shipment states a maximum moisture content of 5%.
- 927 *p*-Nitrosodimethylaniline, wetted with more than 50% water is not subject to the provisions of this Code.
- 928 The provisions of this Code shall not apply to:
- fishmeal when acidified and wetted with more than 40% water, by mass, irrespective of other factors;
 - consignments of fishmeal which are accompanied by a certificate issued by a recognized competent authority of the country of shipment or other recognized authority stating that the product has no self-heating properties when transported in packaged form; or
 - fishmeal manufactured from "white" fish with a moisture content of not more than 12% and a fat content of not more than 5% by mass.
- 929 If satisfied, as a result of tests, that such relaxation is justified, the competent authority may permit:
- the seed cakes described as "SEED CAKE, containing vegetable oil (a) mechanically expelled seeds, containing more than 10% of oil or more than 20% of oil and moisture combined" to be transported under conditions governing "SEED CAKE, containing vegetable oil (b) solvent extractions and expelled seeds, containing not more than 10% of oil and, when the amount of moisture is higher than 10% not more than 20% of oil and moisture combined", and
 - the seed cakes described as "SEED CAKE, containing vegetable oil (b) solvent extractions and expelled seeds, containing not more than 10% of oil and, when the amount of moisture is higher than 10% not more than 20% of oil and moisture combined" to be transported under conditions governing SEED CAKE, UN 2217.
- Certificates from the shipper shall state oil content and moisture content and shall accompany the shipment.

- 930 All pesticides can only be carried under the provisions of this class if accompanied by a certificate supplied by the shipper stating that, when in contact with water, it is not combustible and does not show tendency to autoignition, and that the mixture of gases evolved is not flammable. Otherwise, the provisions of class 4.3 shall be applicable.
- 931 A consignment of this substance which is accompanied by a declaration from the shipper stating that it has no self-heating properties is not subject to the provisions of this Code.
- 932 Requires a certificate from the maker or shipper, stating that the shipment was stored under cover, but in the open air, in the size in which it was packaged, for not less than 3 days prior to shipment.
- 934 Requires the percentage range of calcium carbide impurity to be shown on the shipping documents.
- 935 Substances which do not evolve flammable gases when wet, which are accompanied by a certificate from the shipper stating that the substance, as offered for shipment, does not evolve flammable gases when wet, are not subject to the provisions of this Code.
- 937 The solid hydrated form of this substance is not subject to the provisions of this Code.
- 939 A consignment of this substance that is accompanied by a shipper's certificate stating that it does not contain more than 0.05% maleic anhydride is not subject to the provisions of this Code.
- 942 The concentration and temperature of the solution at the time of loading, its percentage of combustible material and of chlorides as well as the contents of free acid shall be certified.
- 943 Water-activated articles shall bear a subsidiary risk label of class 4.3.
- 945 Stabilization of fishmeal shall be achieved to prevent spontaneous combustion by effective application of between 400 and 1000 mg/kg (ppm) ethoxyquin, or liquid BHT (butylated hydroxytoluene) or between 1000 and 4000 mg/kg (ppm) BHT in powder form at the time of production. The said application shall occur no longer than twelve months prior to shipment.
- 946 Requires certification from the shipper that the substance is not of class 4.2.
- 948 These substances may be transported in bulk in cargo transport units only if their melting point is 75°C or above.
- 951 Bulk container shall be hermetically sealed and under a nitrogen blanket.
- 952 UN 1942 may be transported in bulk container if approved by the competent authority.
- 954 The provisions of this Code shall not apply to consignments of compressed baled hay with a moisture content of less than 14% shipped in closed cargo transport units and accompanied by a certificate from the shipper stating that the product does not present any class 4.1, UN 1327, hazard in transport and that its moisture content is less than 14%.
- 955 If a viscous substance and its packaging fulfils the provisions of 2.3.2.5, the packing provisions of chapter 4.1, the marking and labelling provisions of chapter 5.2 and the package testing provisions of chapter 6.1 are not applicable.
- 958 This entry also covers articles, such as rags, cotton waste, clothing or sawdust, containing polychlorinated biphenyls, polyhalogenated biphenyls or polyhalogenated terphenyls where no free visible liquid is present.
- 959 Waste aerosols authorized for transport under special provision 327 shall only be transported on short international voyages. Long international voyages are authorized only with the approval of the competent authority. Packagings shall be marked and labelled and cargo transport units shall be marked and placarded for appropriate sub-division of class 2 and, if applicable, the subsidiary risk(s).
- 960 Not subject to the provisions of this Code but may be subject to provisions governing the transport of dangerous goods by other modes.
- 961 Vehicles are not subject to the provisions of this Code if any of the following conditions are met:
- .1 vehicles are stowed on the vehicle, special category and ro-ro spaces or on the weather deck of a ro-ro ship or a cargo space designated by the Administration (flag State) in accordance with SOLAS 74, chapter II-2, regulation 20 as specifically designed and approved for the carriage of vehicles, and there are no signs of leakage from the battery, engine, fuel cell, compressed gas cylinder or accumulator, or fuel tank when applicable. When packed in a cargo transport unit the exception does not apply to container cargo spaces of a ro-ro ship.
- In addition, for vehicles powered solely by lithium batteries and hybrid electric vehicles powered by both an internal combustion engine and lithium metal or ion batteries, the lithium batteries shall meet the provisions of 2.9.4, except that 2.9.4.1 does not apply when pre-production prototype batteries or batteries of a small production run, consisting of not more than 100 batteries, are installed in the vehicle and the vehicle is manufactured and approved according to the provisions applied in the country of manufacture or country of use. Where a lithium battery installed in a vehicle is damaged or defective, the battery shall be removed.

- .2 vehicles powered by a flammable liquid fuel with a flashpoint of 38°C or above, there are no leaks in any portion of the fuel system, the fuel tank(s) contains 450 L of fuel or less and installed batteries are protected from short-circuit;
 - .3 vehicles powered by a flammable liquid fuel with a flashpoint less than 38°C, the fuel tank(s) are empty and installed batteries are protected from short circuit. Vehicles are considered to be empty of flammable liquid fuel when the fuel tank has been drained and the vehicles cannot be operated due to a lack of fuel. Engine components such as fuel lines, fuel filters and injectors do not need to be cleaned, drained or purged to be considered empty. The fuel tank does not need to be cleaned or purged;
 - .4 vehicles powered by a flammable gas (liquefied or compressed), the fuel tank(s) are empty and the positive pressure in the tank does not exceed 2 bar, the fuel shut-off or isolation valve is closed and secured, and installed batteries are protected from short circuit;
 - .5 vehicles solely powered by a wet or dry electric storage battery or a sodium battery, and the battery is protected from short circuit.
- 962 Vehicles, not meeting the conditions of special provision 961 shall be assigned to class 9 and shall meet the following requirements:
- .1 vehicles shall not show signs of leakage from batteries, engines, fuel cells, compressed gas cylinders or accumulators, or fuel tank(s) when applicable;
 - .2 for flammable liquid powered vehicles the fuel tank(s) containing the flammable liquid shall not be more than one fourth full and in any case the flammable liquid shall not exceed 250 L unless otherwise approved by the competent authority;
 - .3 for flammable gas powered vehicles, the fuel shut-off valve of the fuel tank(s) shall be securely closed;
 - .4 installed batteries shall be protected from damage, short circuit, and accidental activation during transport. Lithium batteries shall meet the provisions of 2.9.4, except that 2.9.4.1 does not apply when pre-production prototype batteries or batteries of a small production run, consisting of not more than 100 batteries, are installed in the vehicle and the vehicle is manufactured and approved according to the provisions applied in the country of manufacture or country of use. Where a lithium battery installed in a vehicle is damaged or defective, the battery shall be removed and transported according to SP 376, unless otherwise approved by the competent Authority.
- The provisions of this Code relevant to marking, labelling, placarding and marine pollutants shall not apply.
- 963 Nickel-metal hydride button cells or nickel-metal hydride cells or batteries packed with or contained in equipment are not subject to the provisions of this Code.
- All other nickel-metal hydride cells or batteries shall be securely packed and protected from short circuit. They are not subject to other provisions of this Code provided that they are loaded in a cargo transport unit in a total quantity of less than 100 kg gross mass. When loaded in a cargo transport unit in a total quantity of 100 kg gross mass or more, they are not subject to other provisions of this Code except those of 5.4.1, 5.4.3 and columns 16a and 16b of the Dangerous Goods List in chapter 3.2.
- 964 This substance is not subject to the provisions of this Code when transported in non-friable prills or granules form and if it passes the test for oxidizing solid substances as reflected in the Manual of Tests and Criteria (see 34.4.1) and is accompanied by a certificate from a laboratory accredited by a competent authority, stating that the product has been correctly sampled by trained staff from the laboratory and that the sample was correctly tested and has passed the test.
- 965
- .1 When transported in cargo transport units, the cargo transport units shall provide an adequate exchange of air in the unit (e.g. by using a ventilated container, open-top container or container in one door off operation) to prevent the build-up of an explosive atmosphere. Alternatively, these entries shall be transported under temperature control in refrigerated cargo transport units that comply with the provisions of 7.3.7.6. When cargo transport units with venting devices are used, these devices shall be kept clear and operable. When mechanical devices are used for ventilation, they shall be explosion-proof to prevent ignition of flammable vapours from the substances.
 - .2 The provisions of .1 do not apply if:
 - .1 the substance is packed in hermetically sealed packagings or IBCs, which conform to packing group II performance level for liquid dangerous goods according to the provisions of 6.1 or 6.5, respectively; and
 - .2 the marked hydraulic test pressure exceeds 1.5 times the total gauge pressure in the packagings or IBCs determined at 55°C for the respective filling goods according to 4.1.1.10.1.

- .3 Where the substance is loaded in closed cargo transport units, the provisions of 7.3.6.1 shall be met.
 - .4 Cargo transport units shall be marked with a warning mark including the words "CAUTION – MAY CONTAIN FLAMMABLE VAPOUR" with lettering not less than 25 mm high. This mark shall be affixed at each access point in a location where it will be easily seen by persons prior to opening or entering the cargo transport unit and shall remain on the cargo transport unit until the following provisions are met:
 - .1 the cargo transport unit has been completely ventilated to remove any hazardous concentration of vapour or gas;
 - .2 the immediate vicinity of the cargo transport unit is clear of any source of ignition; and
 - .3 the goods have been unloaded.
- 966 Sheeted bulk containers (BK1) are only permitted in accordance with 4.3.3.
- 967 Flexible bulk containers (BK3) are only permitted in accordance with 4.3.4.
- 968 This entry shall not be used for sea transport. Discarded packaging shall meet the requirements of 4.1.1.11.
- 969 Substances classified in accordance to 2.9.3 are subject to the provisions for marine pollutants. Substances which are transported under UN 3077 and UN 3082 but which do not meet the criteria of 2.9.3 (see 2.9.2.2) are not subject to the provisions for marine pollutants. However for substances that are identified as marine pollutants in this Code (see Index) but which no longer meet the criteria of 2.9.3, the provisions of 2.10.2.6 apply.
- 971 Battery powered equipment may only be transported provided that the battery shows no sign of leakage and is protected from short-circuit. In this case, no other provisions of this Code apply.
- 972 Lithium batteries shall meet the provisions of 2.9.4, except that 2.9.4.1 does not apply when pre-production prototype batteries or batteries of a small production run, consisting of not more than 100 batteries, are installed in the engine or machinery. Where a lithium battery installed in an engine or machinery is damaged or defective, the battery shall be removed.

Chapter 3.4

Dangerous goods packed in limited quantities

3.4.1 General

3.4.1.1 This chapter provides the provisions applicable to the transport of dangerous goods of certain classes packed in limited quantities. The applicable quantity limit for the inner packaging or article is specified for each substance in column 7a of the Dangerous Goods List of chapter 3.2. In addition, the quantity "0" has been indicated in this column for each entry not permitted to be transported in accordance with this chapter.

3.4.1.2 Limited quantities of dangerous goods packed in such limited quantities, meeting the provisions of this chapter, are not subject to any other provisions of this Code except the relevant provisions of:

- .1 Part 1, chapters 1.1, 1.2 and 1.3;
- .2 Part 2;
- .3 Part 3, chapters 3.1, 3.2, 3.3;
- .4 Part 4, 4.1.1.1, 4.1.1.2 and 4.1.1.4 to 4.1.1.8;
- .5 Part 5, 5.1.1 except 5.1.1.4, 5.1.2.3, 5.2.1.7, 5.2.1.9, 5.3.2.4, and chapter 5.4;
- .6 Part 6, construction requirements of 6.1.4, 6.2.1.2 and 6.2.4;
- .7 Part 7, 7.1.3.2, 7.6.3.1 and 7.3 except 7.3.3.15 and 7.3.4.1.

3.4.2 Packing

3.4.2.1 Dangerous goods shall be packed only in inner packagings placed in suitable outer packagings. Intermediate packagings may be used. In addition, for articles of division 1.4, compatibility group S, the provisions of section 4.1.5 shall be fully complied with. The use of inner packagings is not necessary for the transport of articles such as aerosols or "receptacles, small, containing gas". The total gross mass of the package shall not exceed 30 kg.

3.4.2.2 Except for articles of division 1.4, compatibility group S, shrink-wrapped or stretch-wrapped trays meeting the conditions of 4.1.1.1, 4.1.1.2 and 4.1.1.4 to 4.1.1.8 are acceptable as outer packagings for articles or inner packagings containing dangerous goods transported in accordance with this chapter. Inner packagings that are liable to break or be easily punctured, such as those made of glass, porcelain, stoneware or certain plastics, shall be placed in suitable intermediate packagings meeting the provisions of 4.1.1.1, 4.1.1.2 and 4.1.1.4 to 4.1.1.8, and be so designed that they meet the construction requirements of 6.1.4. The total gross mass of the package shall not exceed 20 kg.

3.4.2.3 Liquid goods of class 8, packing group II in glass, porcelain or stoneware inner packagings shall be enclosed in a compatible and rigid intermediate packaging.

3.4.3 Stowage

Dangerous goods packed in limited quantity are allocated stowage category A as defined in 7.1.3.2. The other stowage provisions indicated in column 16a of the Dangerous Goods List are not applicable.

3.4.4 Segregation

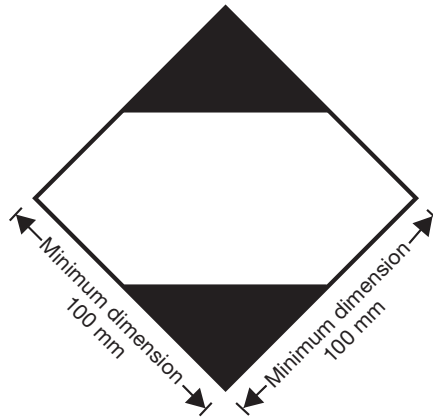
3.4.4.1 Different dangerous substances in limited quantities may be packed in the same outer packaging, provided:

- .1 the substances comply with the provisions of 7.2.6.1; and
- .2 the segregation provisions of chapter 7.2, including the segregation provisions in column 16b of the Dangerous Goods List, are taken into account. However, notwithstanding the individual provisions specified in the Dangerous Goods List, substances in packing group III within the same class may be packed together subject to compliance with 3.4.4.1.1 of the IMDG Code. The following statement shall be included in the transport document: "Transport in accordance with 3.4.4.1.2 of the IMDG Code" (see 5.4.1.5.2.2).

3.4.4.2 The segregation provisions of chapter 7.2 to 7.7 including the segregation provisions in column 16b of the Dangerous Goods List are not applicable for packagings containing dangerous goods in limited quantities or in relation to other dangerous goods. However, articles of division 1.4, compatibility group S shall not be stowed in the same compartment or hold, or cargo transport unit with dangerous goods of class 1 of compatibility groups A and L.

3.4.5 Marking and placarding

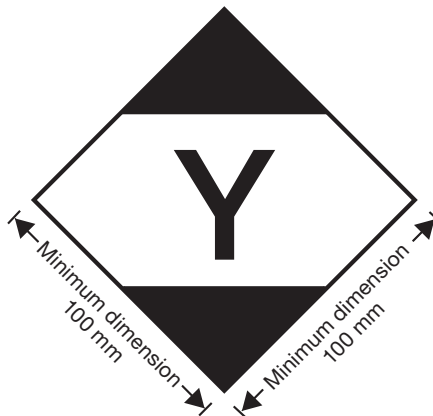
3.4.5.1 Except for air transport, packages containing dangerous goods in limited quantities shall bear the mark shown below:



Mark for packages containing limited quantities

The mark shall be readily visible, legible and able to withstand open weather exposure without a substantial reduction in effectiveness. The mark shall be in the form of a square set at an angle of 45° (diamond-shaped). The top and bottom portions and the surrounding line shall be black. The centre area shall be white or a suitable contrasting background. The minimum dimensions shall be 100 mm × 100 mm and the minimum width of the line forming the diamond shall be 2 mm. Where dimensions are not specified, all features shall be in approximate proportion to those shown. If the size of the package so requires, the minimum outer dimensions shown above may be reduced to be not less than 50 mm × 50 mm provided the mark remains clearly visible. The minimum width of the line forming the diamond may be reduced to a minimum of 1 mm.

3.4.5.2 Packages containing dangerous goods packed in conformity with the provisions of part 3, chapter 4 of the ICAO *Technical Instructions for the Safe Transport of Dangerous Goods by Air* may bear the mark shown below to certify conformity with these provisions:



Mark for packages containing limited quantities conforming to part 3, chapter 4 of the ICAO *Technical Instructions for the Safe Transport of Dangerous Goods by Air*

The mark shall be readily visible, legible and able to withstand open weather exposure without a substantial reduction in effectiveness. The mark shall be in the form of a square set at an angle of 45° (diamond-shaped). The top and bottom portions and the surrounding line shall be black. The centre area shall be white or a suitable contrasting background. The minimum dimensions shall be 100 mm × 100 mm and the minimum width of the line forming the diamond shall be 2 mm. The symbol “Y” shall be placed in the centre of the mark and shall be clearly visible. Where dimensions are not specified, all features shall be in approximate proportion to those shown. If the size of the package so requires, the minimum outer dimensions shown

above may be reduced to be not less than 50 mm × 50 mm provided the mark remains clearly visible. The minimum width of the line forming the diamond may be reduced to a minimum of 1 mm. The symbol “Y” shall remain in approximate proportion to that shown above.

3.4.5.3 Multimodal recognition of marks

3.4.5.3.1 Packages containing dangerous goods bearing the mark shown in 3.4.5.2 with or without the additional labels and marks for air transport shall be deemed to meet the provisions of section 3.4.2 and need not bear the mark shown in 3.4.5.1.

3.4.5.3.2 Packages containing dangerous goods in limited quantities bearing the mark shown in 3.4.5.1 and conforming with the provisions of the ICAO *Technical Instructions for the Safe Transport of Dangerous Goods by Air*, including all necessary marks and labels specified in parts 5 and 6, shall be deemed to meet the provisions of section 3.4.1 as appropriate and of section 3.4.2.

3.4.5.4 When packages containing dangerous goods packed in limited quantities are placed in an overpack or in a unit load, the overpack or the unit load shall be marked with the mark required by this chapter unless the marks representative of all dangerous goods in the overpack or the unit load are visible. In addition, an overpack shall be marked with the word “OVERPACK” unless marks representative of all dangerous goods, as required by this chapter, in the overpack are visible. The lettering of the “OVERPACK” mark shall be at least 12 mm high. The other provisions of 5.1.2.1 apply only if other dangerous goods which are not packed in limited quantities are contained in the overpack or in a unit load and only in relation to these other dangerous goods.

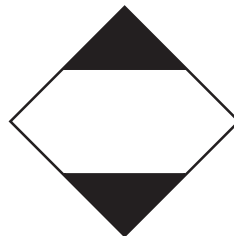
3.4.5.5 Placarding and marking of cargo transport units

3.4.5.5.1 Cargo transport units containing dangerous goods packed in limited quantities with no other dangerous goods shall not be placarded nor marked according to 5.3.2.0 and 5.3.2.1. However, they shall be suitably marked on the exterior with the mark in 3.4.5.5.4.

3.4.5.5.2 Cargo transport units containing dangerous goods and dangerous goods packed in limited quantities shall be placarded and marked according to the provisions applicable to the dangerous goods which are not packed in limited quantities. However, if no placard or mark is required for the dangerous goods not packed in limited quantities, the cargo transport units shall be marked with the mark in 3.4.5.5.4.

3.4.5.5.3 [Reserved]

3.4.5.5.4 When required in 3.4.5.5.1 or 3.4.5.5.2, the following mark shall be affixed on cargo transport units:



The marking shall be readily visible, legible and be such that this information will still be identifiable on cargo transport units surviving at least three months' immersion in the sea. In considering suitable marking methods, account shall be taken of ease with which the surface of the cargo transport unit can be marked. The top and bottom portions and the surrounding line shall be black. The centre area shall be white or a suitable contrasting background. The minimum dimensions shall be of 250 mm × 250 mm in locations indicated in 5.3.1.1.4.1.

3.4.6 Documentation

3.4.6.1 In addition to the provisions for documentation specified in chapter 5.4, the words “limited quantity” or “LTD QTY” shall be included on the dangerous goods declaration together with the description of the shipment.

Chapter 3.5

Dangerous goods packed in excepted quantities

3.5.1 Excepted quantities

3.5.1.1 Excepted quantities of dangerous goods of certain classes, other than articles, meeting the provisions of this chapter, are not subject to any other provisions of this Code except for:

- .1 The training provisions in chapter 1.3;
- .2 The classification procedures and packing group criteria in Part 2, Classification;
- .3 The packaging provisions of 4.1.1.1, 4.1.1.2, 4.1.1.4, 4.1.1.4.1 and 4.1.1.6 in Part 4; and
- .4 The provisions for documentation specified in chapter 5.4.

Note: In the case of radioactive material, the provisions for radioactive material in excepted packages in 1.5.1.5 apply.

3.5.1.2 Dangerous goods which may be carried as excepted quantities in accordance with the provisions of this chapter are shown in column 7b of the Dangerous Goods List by means of an alphanumeric code as follows:

Code	Maximum net quantity per inner packaging (in grams for solids and mL for liquids and gases)	Maximum net quantity per outer packaging (in grams for solids and mL for liquids and gases, or sum of grams and mL in the case of mixed packaging)
E0	Not permitted as excepted quantity	
E1	30	1,000
E2	30	500
E3	30	300
E4	1	500
E5	1	300

For gases, the volume indicated for inner packagings refers to the water capacity of the inner receptacle and the volume indicated for outer packagings refers to the combined water capacity of all inner packagings within a single outer packaging.

3.5.1.3 Where dangerous goods in excepted quantities for which different codes are assigned are packaged together, the total quantity per outer packaging shall be limited to that corresponding to the most restrictive code.

3.5.1.4 Excepted quantities of dangerous goods assigned to codes E1, E2, E4 and E5 are not subject to the provisions of this Code provided that:

- .1 The maximum net quantity of material per inner packaging is limited to 1 mL for liquids and gases and 1 g for solids;
- .2 The provisions of 3.5.2 are met, except that an intermediate packaging is not required if the inner packagings are securely packed in an outer packaging with cushioning material in such a way that, under normal conditions of transport, they cannot break, be punctured, or leak their contents; and for liquid dangerous goods, the outer packaging contains sufficient absorbent material to absorb the entire contents of the inner packagings;
- .3 The provisions of 3.5.3 are complied with; and
- .4 The maximum net quantity of dangerous goods per outer packaging does not exceed 100 g for solids or 100 mL for liquids and gases.

3.5.2 Packagings

3.5.2.1 Packagings used for the transport of dangerous goods in excepted quantities shall be in compliance with the following:

- .1 There shall be an inner packaging and each inner packaging shall be constructed of plastic (when used for liquid dangerous goods it shall have a thickness of not less than 0.2 mm), or of glass, porcelain, stoneware, earthenware or metal (see also 4.1.1.2) and the closure of each inner packaging shall be held securely in place with wire, tape or other positive means; any receptacle having a neck with moulded screw threads shall have a leakproof threaded-type cap. The closure shall be resistant to the contents;
- .2 Each inner packaging shall be securely packed in an intermediate packaging with cushioning material in such a way that, under normal conditions of transport, they cannot break, be punctured or leak their contents. For liquid dangerous goods, the intermediate or outer packaging shall contain sufficient absorbent material to absorb the entire contents of the inner packagings. When placed in the intermediate packaging, the absorbent material may be the cushioning material. Dangerous goods shall not react dangerously with cushioning, absorbent material and packaging material or reduce the integrity or function of the materials. Regardless of its orientation, the package shall completely contain the contents in case of breakage or leakage;
- .3 The intermediate packaging shall be securely packed in a strong, rigid outer packaging (wooden, fibre-board or other equally strong material);
- .4 Each package type shall be in compliance with the provisions in 3.5.3;
- .5 Each package shall be of such a size that there is adequate space to apply all necessary marks; and
- .6 Overpacks may be used and may also contain packages of dangerous goods or goods not subject to the provisions of this Code.

3.5.3 Tests for packages

3.5.3.1 The complete package as prepared for transport, with inner packagings filled to not less than 95% of their capacity for solids or 98% for liquids, shall be capable of withstanding, as demonstrated by testing which is appropriately documented, without breakage or leakage of any inner packaging and without significant reduction in effectiveness:

- .1 Drops onto a rigid, non-resilient flat and horizontal surface from a height of 1.8 m:
 - (i) Where the sample is in the shape of a box, it shall be dropped in each of the following orientations:
 - flat on the base;
 - flat on the top;
 - flat on the longest side;
 - flat on the shortest side;
 - on a corner
 - (ii) Where the sample is in the shape of a drum, it shall be dropped in each of the following orientations:
 - diagonally on the top chime, with the centre of gravity directly above the point of impact;
 - diagonally on the base chime;
 - flat on the side.

Note: Each of the above drops may be performed on different but identical packages.

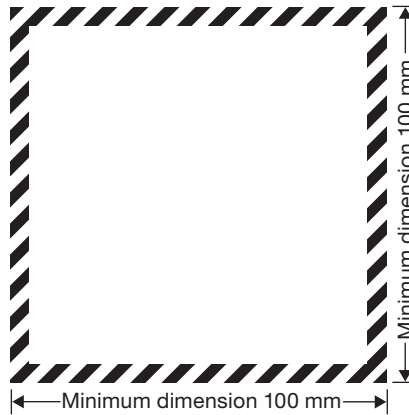
- .2 A force applied to the top surface for a duration of 24 h, equivalent to the total weight of identical packages if stacked to a height of 3 m (including the sample).

3.5.3.2 For the purposes of testing, the substances to be transported in the packaging may be replaced by other substances except where this would invalidate the results of the tests. For solids, when another substance is used, it shall have the same physical characteristics (mass, grain size, etc.) as the substance to be carried. In the drop tests for liquids, when another substance is used, its relative density (specific gravity) and viscosity shall be similar to those of the substance to be transported.

3.5.4 Marking of packages

3.5.4.1 Packages containing excepted quantities of dangerous goods prepared in accordance with this chapter shall be durably and legibly marked with the mark shown below. The primary hazard class of each of the dangerous goods contained in the package shall be shown in the mark. Where the name of the consignor or consignee is not shown elsewhere on the package, this information shall be included within the mark.

3.5.4.2



Excepted quantities mark

* The class or, when assigned, the division number(s) shall be shown in this location.

** The name of the consignor or of the consignee shall be shown in this location if not shown elsewhere on the package.

The mark shall be in the form of a square. The hatching and symbol shall be of the same colour, black or red, on white or suitable contrasting background. The minimum dimensions shall be 100 mm × 100 mm. Where dimensions are not specified, all features shall be in approximate proportion to those shown.

3.5.4.3

When packages containing dangerous goods packed in excepted quantities are placed in an overpack or in a unit load, the overpack or the unit load shall be marked with the mark required by this chapter unless the marks representative of all dangerous goods in the overpack or the unit load are visible. In addition, an overpack shall be marked with the word "OVERPACK" unless marks representative of all dangerous goods, as required by this chapter, in the overpack are visible. The lettering of the "OVERPACK" mark shall be at least 12 mm high. The other provisions of 5.1.2.1 apply only if other dangerous goods which are not packed in excepted quantities are contained in the overpack or in a unit load and only in relation to these other dangerous goods.

3.5.5 Maximum number of packages in any cargo transport unit

3.5.5.1 The number of packages containing dangerous goods packed in excepted quantities in any cargo transport unit shall not exceed 1000.

3.5.6 Documentation

3.5.6.1 In addition to the provisions for documentation specified in chapter 5.4, the words "dangerous goods in excepted quantities" and the number of packages shall be included on the dangerous goods declaration together with the description of the shipment.

3.5.7 Stowage

3.5.7.1 Dangerous goods packed in excepted quantity are allocated stowage category A as defined in 7.1.3.2. The other stowage provisions indicated in column 16a of the Dangerous Goods List are not applicable.

3.5.8 Segregation

3.5.8.1 The segregation provisions of chapters 7.2 to 7.7, including the segregation provisions in column 16b of the Dangerous Goods List, are not applicable for packagings containing dangerous goods packed in excepted quantities or in relation to other dangerous goods.

3.5.8.2 The segregation provisions of chapters 7.2 to 7.7, including the segregation provisions in column 16b of the Dangerous Goods List, are not applicable for different dangerous goods in excepted quantities in the same outer packaging provided that they do not react dangerously with each other (see 4.1.1.6).

PART 4

PACKING AND TANK PROVISIONS

Chapter 4.1

Use of packagings, including intermediate bulk containers (IBCs) and large packagings

4.1.0 Definitions

Effectively closed: liquid-tight closure.

Hermetically sealed: vapour-tight closure.

Securely closed: so closed that dry contents cannot escape during normal handling; the minimum provisions for any closure.

4.1.1 General provisions for the packing of dangerous goods in packagings, including IBCs and large packagings

Note: For the packing of goods of classes 2, 6.2 and 7, the general provisions of this section only apply as indicated in 4.1.8.2 (class 6.2), 4.1.9.1.5 (class 7) and in the applicable packing instructions of 4.1.4 (P201 and LP02 for class 2 and P620, P621, P650, IBC620 and LP621 for class 6.2).

4.1.1.1 Dangerous goods shall be packed in good quality packagings, including IBCs and large packagings, which shall be strong enough to withstand the shocks and loadings normally encountered during transport, including trans-shipment between cargo transport units and between cargo transport units and warehouses as well as any removal from a pallet or overpack for subsequent manual or mechanical handling. Packagings, including IBCs and large packagings, shall be constructed and closed so as to prevent any loss of contents when prepared for transport which may be caused under normal conditions of transport, by vibration, or by changes in temperature, humidity or pressure (resulting from altitude, for example). Packagings, including IBCs and large packagings, shall be closed in accordance with the information provided by the manufacturer. No dangerous residue shall adhere to the outside of packages, IBCs and large packagings during transport. These provisions apply, as appropriate, to new, reused, reconditioned or remanufactured packagings, and to new, reused, repaired or remanufactured IBCs, and to new, reused or remanufactured large packagings.

4.1.1.2 Parts of packagings, including IBCs and large packagings, which are in direct contact with dangerous goods:

- .1 shall not be affected or significantly weakened by those dangerous goods; and
- .2 shall not cause a dangerous effect, such as catalysing a reaction or reacting with the dangerous goods; and
- .3 shall not allow permeation of the dangerous goods that could constitute a danger under normal conditions of transport.

Where necessary, they shall be provided with a suitable inner coating or treatment.

4.1.1.3 Unless otherwise provided elsewhere in this Code, each packaging, including IBCs and large packagings, except inner packagings, shall conform to a design type successfully tested in accordance with the provisions of 6.1.5, 6.3.5, 6.5.6 or 6.6.5, as applicable. However, IBCs manufactured before 1 January 2011 and conforming to a design type which has not passed the vibration test of 6.5.6.13 or which was not required to meet the criteria of 6.5.6.9.5.4 at the time it was subjected to the drop test may still be used.

4.1.1.4 When filling packagings, including IBCs and large packagings, with liquids, sufficient ullage (outage) shall be left to ensure that neither leakage nor permanent distortion of the packaging occurs as a result of an expansion of the liquid caused by temperatures likely to occur during transport. Unless specific provisions are prescribed, liquids shall not completely fill a packaging at a temperature of 55°C. However, sufficient

ullage shall be left in an IBC to ensure that at the mean bulk temperature of 50°C it is not filled to more than 98% of its water capacity.

- 4.1.1.4.1 For air transport, packagings intended to contain liquids shall also be capable of withstanding a pressure differential without leakage as specified in the international regulations for air transport.
- 4.1.1.5 Inner packagings shall be packed in an outer packaging in such a way that, under normal conditions of transport, they cannot break, be punctured or leak their contents into the outer packaging. Inner packagings containing liquids shall be packaged with their closures upward and placed within outer packagings consistent with the orientation marks prescribed in 5.2.1.7.1 of this Code. Inner packagings that are liable to break or be punctured easily, such as those made of glass, porcelain or stoneware or of certain plastics materials, etc., shall be secured in outer packagings with suitable cushioning material. Any leakage of the contents shall not substantially impair the protective properties of the cushioning material or of the outer packaging.
- 4.1.1.5.1 Where an outer packaging of a combination packaging or a large packaging has been successfully tested with different types of inner packagings, a variety of such different inner packagings may also be assembled in this outer packaging or large packagings. In addition, provided an equivalent level of performance is maintained, the following variations in inner packagings are allowed without further testing of the package:
- .1 Inner packagings of equivalent or smaller size may be used provided:
 - the inner packagings are of similar design to the tested inner packagings (such as shape – round, rectangular, etc.);
 - the material of construction of inner packagings (glass, plastics, metal, etc.) offers resistance to impact and stacking forces equal to or greater than that of the originally tested inner packaging;
 - the inner packagings have the same or smaller openings and the closure is of similar design (such as screw cap, friction lid, etc.);
 - sufficient additional cushioning material is used to take up void spaces and to prevent significant movement of the inner packagings;
 - inner packagings are oriented within the outer packaging in the same manner as in the tested package; and
 - .2 A lesser number of the tested inner packagings or of the alternative types of inner packagings identified in .1 above may be used, provided sufficient cushioning is added to fill the void space(s) and to prevent significant movement of the inner packagings.
- 4.1.1.5.2 Use of supplementary packagings within an outer packaging (e.g. an intermediate packaging or a receptacle inside a required inner packaging) additional to what is required by the packing instructions is authorized provided all relevant requirements are met, including those of 4.1.1.3, and, if appropriate, suitable cushioning is used to prevent movement within the packaging.
- 4.1.1.5.3 Cushioning and absorbent material shall be inert and suited to the nature of the contents.
- 4.1.1.5.4 The nature and the thickness of the outer packagings shall be such that friction during transport does not generate any heating likely to alter dangerously the chemical stability of the contents.
- 4.1.1.6 Dangerous goods shall not be packed together in the same outer packaging, or in large packagings, with dangerous or other goods if they react dangerously with each other and cause:
- .1 combustion and/or evolution of considerable heat;
 - .2 evolution of flammable, toxic or asphyxiant gases;
 - .3 the formation of corrosive substances; or
 - .4 the formation of unstable substances.
- 4.1.1.7 The closures of packagings containing wetted or diluted substances shall be such that the percentage of liquid (water, solvent or phlegmatizer) does not fall below the prescribed limits during transport.
- 4.1.1.7.1 Where two or more closure systems are fitted in series on an IBC, that nearest to the substance being transported shall be closed first.

4.1.1.7.2 Unless otherwise specified in the Dangerous Goods List, packages containing substances which:

- .1 evolve flammable gases or vapour;
- .2 may become explosive if allowed to dry;
- .3 evolve toxic gases or vapour;
- .4 evolve corrosive gases or vapour; or
- .5 may react dangerously with the atmosphere

should be hermetically sealed.

4.1.1.8 Where pressure may develop in a package by the emission of gas from the contents (as a result of temperature increase or other causes), the packaging or IBC may be fitted with a vent provided that the gas emitted will not cause danger on account of its toxicity, its flammability, the quantity released, etc.

A venting device shall be fitted if dangerous overpressure may develop due to normal decomposition of substances. The vent shall be so designed that, when the packaging or IBC is in the attitude in which it is intended to be transported, leakages of liquid and the penetration of foreign substances are prevented under normal conditions of transport.

4.1.1.8.1 Liquids may only be filled into inner packagings which have an appropriate resistance to internal pressure that may be developed under normal conditions of transport.

4.1.1.9 New, remanufactured or re-used packagings, including IBCs and large packagings, or reconditioned packagings and repaired or routinely maintained IBCs shall be capable of passing the tests prescribed in 6.1.5, 6.3.5, 6.5.6 or 6.6.5, as applicable. Before being filled and handed over for transport, every packaging, including IBCs and large packagings, shall be inspected to ensure that it is free from corrosion, contamination or other damage and every IBC shall be inspected with regard to the proper functioning of any service equipment. Any packaging which shows signs of reduced strength as compared with the approved design type shall no longer be used or shall be so reconditioned that it is able to withstand the design type tests. Any IBC which shows signs of reduced strength as compared with the tested design type shall no longer be used or shall be so repaired or routinely maintained that it is able to withstand the design type tests.

4.1.1.10 Liquids shall be filled only into packagings, including IBCs, which have an appropriate resistance to the internal pressure that may develop under normal conditions of transport. As the vapour pressure of low-boiling-point liquids is usually high, the strength of receptacles for these liquids shall be sufficient to withstand, with an ample factor of safety, the internal pressure likely to be generated. Packagings and IBCs marked with the hydraulic test pressure prescribed in 6.1.3.1(d) and 6.5.2.2.1, respectively, shall be filled only with a liquid having a vapour pressure:

- .1 such that the total gauge pressure in the packaging or IBC (i.e. the vapour pressure of the filling substance plus the partial pressure of air or other inert gases, less 100 kPa) at 55°C, determined on the basis of a maximum degree of filling in accordance with 4.1.1.4 and a filling temperature of 15°C, will not exceed two thirds of the marked test pressure; or
- .2 at 50°C, less than four sevenths of the sum of the marked test pressure plus 100 kPa; or
- .3 at 55°C, less than two thirds of the sum of the marked test pressure plus 100 kPa.

IBCs intended for the transport of liquids shall not be used to carry liquids having a vapour pressure of more than 110 kPa (1.1 bar) at 50°C or 130 kPa (1.3 bar) at 55°C.

**Examples of required marked test pressures for packagings, including IBCs,
 calculated as in 4.1.1.10.3**

UN No.	Name	Class	Packing group	$V_{p_{55}}$ (kPa)	$V_{p_{55} \times 1.5}$ (kPa)	$(V_{p_{55} \times 1.5} \text{ minus } 100)$ (kPa)	Required minimum test pressure (gauge) under 6.1.5.5.4.3 (kPa)	Minimum test pressure (gauge) to be marked on the packaging (kPa)
2056	Tetrahydrofuran	3	I	70	105	5	100	100
2247	<i>n</i> -Decane	3	II	1.4	2.1	-97.9	100	100
1593	Dichloromethane	6.1	III	164	246	146	146	150
1155	Diethyl ether	3	I	199	299	199	199	250

Note 1: For pure liquids, the vapour pressure at 55°C ($V_{p_{55}}$) can often be obtained from scientific tables.

Note 2: The table refers to the use of 4.1.1.10.3 only, which means that the marked test pressure shall exceed 1.5 times the vapour pressure at 55°C less 100 kPa. When, for example, the test pressure for *n*-decane is determined according to 6.1.5.5.4.1, the minimum marked test pressure may be lower.

Note 3: For diethyl ether, the required minimum test pressure under 6.1.5.5.5 is 250 kPa.

- 4.1.1.11 Empty packagings, including IBCs and large packagings, that have contained a dangerous substance shall be treated in the same manner as is required by this Code for a filled packaging, unless adequate measures have been taken to nullify any hazard.
- 4.1.1.12 Every packaging as specified in chapter 6.1 intended to contain liquids shall successfully undergo a suitable leakproofness test. This test is part of a quality assurance programme as stipulated in 6.1.1.3 which shows the capability of meeting the appropriate test level indicated in 6.1.5.4.4:
- .1 before it is first used for transport;
 - .2 after remanufacturing or reconditioning of any packaging, before it is re-used for transport.
- For this test, the packaging need not have its closures fitted. The inner receptacle of a composite packaging may be tested without the outer packaging, provided the test results are not affected. This test is not necessary for inner packagings of combination packagings or large packagings.
- 4.1.1.13 Packagings, including IBCs, used for solids which may become liquid at temperatures likely to be encountered during transport shall also be capable of containing the substance in the liquid state.
- 4.1.1.14 Packagings, including IBCs, used for powdery or granular substances shall be sift-proof or shall be provided with a liner.
- 4.1.1.15 For plastics drums and jerricans, rigid plastics IBCs and composite IBCs with plastics inner receptacles, unless otherwise approved by the competent authority, the period of use permitted for the transport of dangerous substances shall be five years from the date of manufacture of the receptacles, except where a shorter period of use is prescribed because of the nature of the substance to be transported.
- 4.1.1.16 Where ice is used as a coolant it shall not affect the integrity of the packaging.
- 4.1.1.17 **Explosives, self-reactive substances and organic peroxides**
- Unless specific provision to the contrary is made in this Code, the packagings, including IBCs and large packagings, used for goods of class 1, self-reactive substances of class 4.1 and organic peroxides of class 5.2 shall comply with the provisions for the medium danger group (packing group II).
- 4.1.1.18 **Use of salvage packagings and large salvage packagings**
- 4.1.1.18.1 Damaged, defective, leaking or non-conforming packages, or dangerous goods that have spilled or leaked may be transported in salvage packagings mentioned in 6.1.5.1.11 and 6.6.5.1.9. This does not prevent the use of a larger size packaging or large packaging of appropriate type and performance level and under the conditions of 4.1.1.18.2 and 4.1.1.18.3.
- 4.1.1.18.2 Appropriate measures shall be taken to prevent excessive movement of the damaged or leaking packages within a salvage packaging. When the salvage packaging contains liquids, sufficient inert absorbent material shall be added to eliminate the presence of free liquid.
- 4.1.1.18.3 Appropriate measures shall be taken to ensure there is no dangerous build-up of pressure.
- 4.1.1.19 **Use of salvage pressure receptacles**
- 4.1.1.19.1 In the case of damaged, defective, leaking or non-conforming pressure receptacles, salvage pressure receptacles according to 6.2.3 may be used.
- Note:** A salvage pressure receptacle may be used as an overpack in accordance with 5.1.2. When used as an overpack, marks shall be in accordance with 5.1.2.1 instead of 5.2.1.3.
- 4.1.1.19.2 Pressure receptacles shall be placed in salvage pressure receptacles of suitable size. The maximum size of the placed pressure receptacle is limited to a water capacity of 1,000 litres. More than one pressure receptacle may be placed in the same salvage pressure receptacle only if the contents are known and do not react dangerously with each other (see 4.1.1.6). In this case the total sum of water capacities of the placed pressure receptacles shall not exceed 1,000 litres. Measures shall be taken to prevent movement of the pressure receptacles within the salvage pressure receptacle, e.g. by partitioning, securing or cushioning.
- 4.1.1.19.3 A pressure receptacle may only be placed in a salvage pressure receptacle if:
- .1 the salvage pressure receptacle is in accordance with 6.2.3.5 and a copy of the approval certificate is available;
 - .2 parts of the salvage pressure receptacle which are, or are likely to be in direct contact with the dangerous goods will not be affected or weakened by those dangerous goods and will not cause a dangerous effect (e.g. catalysing reaction or reacting with the dangerous goods); and
 - .3 the contents of the contained pressure receptacle(s) is limited in pressure and volume so that if totally discharged into the salvage pressure receptacle, the pressure in the salvage pressure receptacle at 65°C

will not exceed the test pressure of the salvage pressure receptacle (for gases, see packing instruction in P200 (3) 4.1.4.1). The reduction of the useable water capacity of the salvage pressure receptacle, e.g. by any contained equipment and cushioning, shall be taken into account.

- 4.1.1.19.4 The proper shipping name, the UN number preceded by the letters "UN" and label(s) as required for packages in chapter 5.2 applicable to the dangerous goods inside the contained pressure receptacle(s) shall be applied to the salvage pressure receptacle for transport.
- 4.1.1.19.5 Salvage pressure receptacles shall be cleaned, purged and visually inspected internally and externally after each use. They shall be periodically inspected and tested in accordance with 6.2.1.6 at least once every five years.
- 4.1.1.20 During transport, packagings, including IBCs and large packagings, shall be securely fastened to or contained within the cargo transport unit, so that lateral or longitudinal movement or impact is prevented and adequate external support is provided.

4.1.2 Additional general provisions for the use of IBCs

- 4.1.2.1 When IBCs are used for the transport of liquids with a flashpoint of 60°C (closed cup) or lower, or of powders liable to dust explosion, measures shall be taken to prevent a dangerous electrostatic discharge.
- 4.1.2.2.1 Every metal, rigid plastics and composite IBC shall be inspected and tested, as relevant, in accordance with 6.5.4.4 or 6.5.4.5:
- .1 before it is put into service;
 - .2 thereafter at intervals not exceeding two and a half and five years, as appropriate; and
 - .3 after the repair or remanufacture, before it is re-used for transport.
- 4.1.2.2.2 An IBC shall not be filled and offered for transport after the date of expiry of the last periodic test or inspection. However, an IBC filled prior to the date of expiry of the last periodic test or inspection may be transported for a period not to exceed three months beyond the date of expiry of the last periodic test or inspection. In addition, an IBC may be transported after the date of expiry of the last periodic test or inspection:
- .1 after emptying but before cleaning, for purposes of performing the required test or inspection prior to refilling; and
 - .2 unless otherwise approved by the competent authority, for a period not to exceed six months beyond the date of expiry of the last periodic test or inspection in order to allow the return of dangerous goods or residues for proper disposal or recycling. Reference to this exemption shall be entered in the transport document.
- 4.1.2.3 IBCs of type 31HZ2 when transporting liquids shall be filled to at least 80% of the volume of the outer casing and shall be transported in closed cargo transport units.
- 4.1.2.4 Except for routine maintenance of metal, rigid plastics, composite and flexible IBCs performed by the owner of the IBC, whose State and name or authorized symbol is durably marked on the IBC, the party performing routine maintenance shall durably mark the IBC near the manufacturer's UN design type mark to show:
- .1 the State in which the routine maintenance was carried out; and
 - .2 the name or authorized symbol of the party performing the routine maintenance.

4.1.3 General provisions concerning packing instructions

- 4.1.3.1 Packing instructions applicable to dangerous goods of classes 1 to 9 are specified in 4.1.4. They are subdivided in three subsections depending on the type of packagings to which they apply:
- | | |
|--------------------|---|
| subsection 4.1.4.1 | for packagings other than IBCs and large packagings; these packing instructions are designated by an alphanumeric code comprising the letter "P"; |
| subsection 4.1.4.2 | for IBCs; these are designated by an alphanumeric code comprising the letters "IBC"; |
| subsection 4.1.4.3 | for large packagings; these are designated by an alphanumeric code comprising the letters "LP". |

Generally, packing instructions specify that the general provisions of 4.1.1, 4.1.2 and/or 4.1.3, as appropriate, are applicable. They may also require compliance with the special provisions of 4.1.5, 4.1.6, 4.1.7, 4.1.8 or 4.1.9 when appropriate. Special packing provisions may also be specified in the packing instruction for individual substances or articles. They are also designated by an alphanumeric code comprising the letters:

- | | |
|------|---|
| "PP" | for packagings other than IBCs and large packagings |
| "B" | for IBCs |
| "L" | for large packagings. |

Unless otherwise specified, each packaging shall conform to the applicable provisions of part 6. Generally, packing instructions do not provide guidance on compatibility and the user shall not select a packaging without checking that the substance is compatible with the packaging material selected (such as, most fluorides are unsuitable for glass receptacles). Where glass receptacles are permitted in the packing instructions, porcelain, earthenware and stoneware packagings are also allowed.

4.1.3.2 Column 8 of the Dangerous Goods List shows for each article or substance the packing instruction(s) that shall be used. Column 9 indicates the special packing provisions applicable to specific substances or articles.

4.1.3.3 Each packing instruction shows, where applicable, the acceptable single and combination packagings. For combination packagings, the acceptable outer packagings, inner packagings and, when applicable, the maximum quantity permitted in each inner or outer packaging are shown. *Maximum net mass* and *maximum capacity* are as defined in 1.2.1.

4.1.3.4 The following packagings shall not be used when the substances being transported are liable to become liquid during transport:

Packagings

Drums: 1D and 1G

Boxes: 4C1, 4C2, 4D, 4F, 4G and 4H1

Bags: 5L1, 5L2, 5L3, 5H1, 5H2, 5H3, 5H4, 5M1 and 5M2

Composite: 6HC, 6HD1, 6HD2, 6HG1, 6HG2, 6PC, 6PD1, 6PD2, 6PG1, 6PG2 and 6PH1

Large packagings

Flexible plastics: 51H (outer packaging)

IBCs

For substances of packing group I:

All types of IBCs

For substances of packing groups II and III:

Wooden: 11C, 11D and 11F

Fibreboard: 11G

Flexible: 13H1, 13H2, 13H3, 13H4, 13H5, 13L1, 13L2, 13L3, 13L4, 13M1 and 13M2

Composite: 11HZ2 and 21HZ2

4.1.3.5 Where the packing instructions in this chapter authorize the use of a particular type of packaging (such as 4G; 1A2), packagings bearing the same packaging identification code followed by the letters "V", "U" or "W" marked in accordance with the provisions of part 6 (such as "4GV", "4GU" or "4GW"; "1A2V", "1A2U" or "1A2W") may also be used under the same conditions and limitations applicable to the use of that type of packaging according to the relevant packing instructions. For example, a combination packaging marked with the packaging code "4GV" may be used whenever a combination packaging marked "4G" is authorized, provided the provisions in the relevant packing instruction regarding types of inner packagings and quantity limitations are respected.

4.1.3.6 Pressure receptacles for liquids and solids

4.1.3.6.1 Unless otherwise indicated in this Code, pressure receptacles conforming to:

- .1 the applicable requirements of chapter 6.2; or
- .2 the National or International standards on the design, construction, testing, manufacturing and inspection, as applied by the country in which the pressure receptacles are manufactured, provided that the provisions of 4.1.3.6 and 6.2.3.3 are met,

are authorized for the transport of any liquid or solid substance other than explosives, thermally unstable substances, organic peroxides, self-reactive substances, substances where significant pressure may develop by evolution of chemical reaction and radioactive material (unless permitted in 4.1.9).

This subsection is not applicable to the substances mentioned in 4.1.4.1, packing instruction P200, table 3.

4.1.3.6.2 Every design type of pressure receptacle shall be approved by the competent authority of the country of manufacture or as indicated in chapter 6.2.

4.1.3.6.3 Unless otherwise indicated, pressure receptacles having a minimum test pressure of 0.6 MPa shall be used.

4.1.3.6.4 Unless otherwise indicated, pressure receptacles may be provided with an emergency pressure relief device designed to avoid bursting in case of overfill or fire accidents.

Pressure receptacle valves shall be designed and constructed in such a way that they are inherently able to withstand damage without release of the contents or shall be protected from damage which could cause inadvertent release of the contents of the pressure receptacle, by one of the methods as given in 4.1.6.1.8.1 to 4.1.6.1.8.5.

4.1.3.6.5 The level of filling shall not exceed 95% of the capacity of the pressure receptacle at 50°C. Sufficient ullage (outage) shall be left to ensure that the pressure receptacle will not be liquid-full at a temperature of 55°C.

4.1.3.6.6 Unless otherwise indicated, pressure receptacles shall be subjected to a periodic inspection and test every five years. The periodic inspection shall include an external examination, an internal examination or alternative method as approved by the competent authority, a pressure test or equivalent effective non-destructive testing with the agreement of the competent authority, including an inspection of all accessories (e.g. tightness of valves, emergency relief valves or fusible elements). Pressure receptacles shall not be filled after they become due for periodic inspection and test but may be transported after the expiry of the time limit. Pressure receptacle repairs shall meet the requirements of 4.1.6.1.11.

4.1.3.6.7 Prior to filling, the filler shall perform an inspection of the pressure receptacle and ensure that the pressure receptacle is authorized for the substances to be transported and that the provisions of this Code have been met. Shut-off valves shall be closed after filling and remain closed during transport. The consignor shall verify that the closures and equipment are not leaking.

4.1.3.6.8 Refillable pressure receptacles shall not be filled with a substance different from that previously contained unless the necessary operations for change of service have been performed.

4.1.3.6.9 Marking of pressure receptacles for liquids and solids according to 4.1.3.6 (not conforming to the requirements of chapter 6.2) shall be in accordance with the requirements of the competent authority of the country of manufacturing.

4.1.3.7 Packagings, including IBCs and large packagings, not specifically authorized in the applicable packing instruction shall not be used for the transport of a substance or article unless specifically approved by the competent authority and provided:

- .1 the alternative packaging complies with the general provisions of this chapter;
- .2 when the packing instruction indicated in the Dangerous Goods List so specifies, the alternative packaging meets the provisions of part 6;
- .3 the competent authority determines that the alternative packaging provides at least the same level of safety as if the substance were packed in accordance with a method specified in the particular packing instruction indicated in the Dangerous Goods List; and
- .4 a copy of the competent authority approval accompanies each consignment or the transport document includes an indication that alternative packaging was approved by the competent authority.

Note: The competent authorities granting such approvals shall take action to amend the Code to include the provisions covered by the approval as appropriate.

4.1.3.8 Unpackaged articles other than class 1 articles

4.1.3.8.1 Where large and robust articles cannot be packaged in accordance with the requirements of chapter 6.1 or 6.6 and they have to be transported empty, uncleaned and unpackaged, the competent authority may approve such transport. In doing so, the competent authority shall take into account that:

- .1 Large and robust articles shall be strong enough to withstand the shocks and loadings normally encountered during transport, including trans-shipment between cargo transport units and between cargo transport units and warehouses, as well as any removal from a pallet for subsequent manual or mechanical handling.
- .2 All closures and openings shall be sealed so that there can be no loss of contents which might be caused under normal conditions of transport, by vibration, or by changes in temperature, humidity or pressure (resulting from altitude, for example). No dangerous residue shall adhere to the outside of the large and robust articles.
- .3 Parts of large and robust articles, which are in direct contact with dangerous goods:
 - .1 shall not be affected or significantly weakened by those dangerous goods; and
 - .2 shall not cause a dangerous effect, e.g. catalysing a reaction or reacting with the dangerous goods.
- .4 Large and robust articles containing liquids shall be stowed and secured to ensure that neither leakage nor permanent distortion of the article occurs during transport.
- .5 They shall be fixed in cradles or crates or other handling devices in such a way that they will not become loose during normal conditions of transport.

4.1.3.8.2 Unpackaged articles approved by the competent authority in accordance with the provisions of 4.1.3.8.1 shall be subject to the consignment procedures of part 5. In addition the consignor of such articles shall ensure that a copy of any such approval is transported with the large and robust articles.

Note: A large and robust article may include flexible fuel containment systems, military equipment, machinery or equipment containing dangerous goods above the limited quantity thresholds.

4.1.3.9 Where, in 4.1.3.6 and in the individual packing instructions, cylinders and other pressure receptacles for gases are authorized for the transport of any liquid or solid substance, use is also authorized of cylinders and pressure receptacles of a kind normally used for gases which conform to the requirements of the competent authority of the country in which the cylinder or pressure receptacle is filled. Valves shall be suitably protected. Pressure receptacles with capacities of 1 L or less shall be packed in outer packagings constructed of suitable material of adequate strength and design in relation to the capacity of the packaging and its intended use and secured or cushioned so as to prevent significant movement within the outer packaging during normal conditions of transport.

4.1.4

List of packing instructions

4.1.4.1

Packing instructions concerning the use of packagings (except IBCs and large packagings)

P001		PACKING INSTRUCTION (LIQUIDS)			P001
The following packagings are authorized provided the general provisions of 4.1.1 and 4.1.3 are met.					
Combination packagings		Maximum capacity/net mass (see 4.1.3.3)			
Inner packagings	Outer packagings	Packing group I	Packing group II	Packing group III	
Glass	10 L	Drums			
Plastics	30 L	steel (1A1, 1A2)	75 kg	400 kg	400 kg
Metal	40 L	aluminium (1B1, 1B2)	75 kg	400 kg	400 kg
		other metal (1N1, 1N2)	75 kg	400 kg	400 kg
		plastics (1H1, 1H2)	75 kg	400 kg	400 kg
		plywood (1D)	75 kg	400 kg	400 kg
		fibre (1G)	75 kg	400 kg	400 kg
		Boxes			
		steel (4A)	75 kg	400 kg	400 kg
		aluminium (4B)	75 kg	400 kg	400 kg
		other metal (4N)	75 kg	400 kg	400 kg
		natural wood (4C1, 4C2)	75 kg	400 kg	400 kg
		plywood (4D)	75 kg	400 kg	400 kg
		reconstituted wood (4F)	75 kg	400 kg	400 kg
		fibreboard (4G)	75 kg	400 kg	400 kg
		expanded plastics (4H1)	40 kg	60 kg	60 kg
		solid plastics (4H2)	75 kg	400 kg	400 kg
		Jerricans			
		steel (3A1, 3A2)	60 kg	120 kg	120 kg
		aluminium (3B1, 3B2)	60 kg	120 kg	120 kg
		plastics (3H1, 3H2)	30 kg	120 kg	120 kg
Single packagings					
Drums					
	steel, non-removable head (1A1)	250 L	450 L	450 L	
	steel, removable head (1A2)	prohibited	250 L	250 L	
	aluminium, non-removable head (1B1)	250 L	450 L	450 L	
	aluminium, removable head (1B2)	prohibited	250 L	250 L	
	other metal, non-removable head (1N1)	250 L	450 L	450 L	
	other metal, removable head (1N2)	prohibited	250 L	250 L	
	plastics, non-removable head (1H1)	250 L*	450 L	450 L	
	plastics, removable head (1H2)	prohibited	250 L	250 L	
Jerricans					
	steel, non-removable head (3A1)	60 L	60 L	60 L	
	steel, removable head (3A2)	prohibited	60 L	60 L	
	aluminium, non-removable head (3B1)	60 L	60 L	60 L	
	aluminium, removable head (3B2)	prohibited	60 L	60 L	
	plastics, non-removable head (3H1)	60 L*	60 L	60 L	
	plastics, removable head (3H2)	prohibited	60 L	60 L	
Composite packagings					
	Plastics receptacle in steel or aluminium drum (6HA1, 6HB1)	250 L	250 L	250 L	
	Plastics receptacle in fibre, plastics or plywood drum (6HG1, 6HH1, 6HD1)	120 L*	250 L	250 L	
	Plastics receptacle in steel or aluminium crate or box or plastics receptacle in wood, plywood, fibreboard or solid plastics box (6HA2, 6HB2, 6HC, 6HD2, 6HG2 or 6HH2)	60 L*	60 L	60 L	
	Glass receptacle in steel, aluminium, fibre, plywood, solid plastics or expanded plastics drum (6PA1, 6PB1, 6PG1, 6PD1, 6PH1 or 6PH2) or in a steel, aluminium, wood or fibreboard box or in a wickerwork hamper (6PA2, 6PB2, 6PC, 6PG2 or 6PD2)	60 L	60 L	60 L	
Pressure receptacles, provided that the general provisions of 4.1.3.6 are met					

* Not permitted for class 3, packing group I.

RESOLUTION MSC.406(96) (adopted on 13 May 2016)
AMENDMENTS TO THE INTERNATIONAL MARITIME
DANGEROUS GOODS (IMDG) CODE

P001	PACKING INSTRUCTION (LIQUIDS) <i>(continued)</i>	P001
Special packing provisions:		
PP1	For UN Nos. 1133, 1210, 1263 and 1866 and for adhesives, printing inks, printing ink related materials, paints, paint related materials and resin solutions which are assigned to UN 3082, metal or plastics packagings for substances of packing groups II and III in quantities of 5 L or less per packaging are not required to meet the performance tests in chapter 6.1 when transported:	
	(a) in palletized loads, a pallet box or a unit load device, such as individual packagings placed or stacked and secured by strapping, shrink- or stretch-wrapping or other suitable means to a pallet. For sea transport, the palletized loads, pallet boxes or unit load devices shall be firmly packed and secured in closed cargo transport units. On roll-on/roll-off ships the unit loads may be carried in vehicles other than closed vehicles provided they are securely fenced to the full height of the cargo carried; or	
	(b) as an inner packaging of a combination packaging with a maximum net mass of 40 kg.	
PP2	For UN 3065, wooden barrels with a maximum capacity of 250 L and which do not meet the provisions of chapter 6.1 may be used.	
PP4	For UN 1774, packagings shall meet the packing group II performance level.	
PP5	For UN 1204, packagings shall be so constructed that explosion is not possible by reason of increased internal pressure. Gas cylinders and gas receptacles shall not be used for these substances.	
PP10	For UN 1791, for packing group II, the packaging shall be vented.	
PP31	For UN Nos. 1131, 1553, 1693, 1694, 1699, 1701, 2478, 2604, 2785, 3148, 3183, 3184, 3185, 3186, 3187, 3188, 3398 (PG II and III), 3399 (PG II and III), 3413 and 3414, packagings shall be hermetically sealed.	
PP33	For UN 1308, for packing groups I and II, only combination packagings with a maximum gross mass of 75 kg are allowed.	
PP81	For UN 1790 with more than 60% but not more than 85% hydrogen fluoride and UN 2031 with more than 55% nitric acid, the permitted use of plastics drums and jerricans as single packagings shall be two years from their date of manufacture	
PP93	For UN Nos. 3532 and 3534, packagings shall be designed and constructed to permit the release of gas or vapour to prevent a build-up of pressure that could rupture the packagings in the event of loss of stabilization.	

P002	PACKING INSTRUCTION (SOLIDS)	P002		
The following packagings are authorized provided the general provisions of 4.1.1 and 4.1.3 are met.				
Combination packagings		Maximum net mass (see 4.1.3.3)		
Inner packagings	Outer packagings	Packing group I	Packing group II	Packing group III
Glass	10 kg	Drums		
Plastics ¹	30 kg	steel (1A1, 1A2)	125 kg	400 kg
Metal	40 kg	aluminium (1B1, 1B2)	125 kg	400 kg
Paper ^{1, 2, 3}	50 kg	other metal (1N1, 1N2)	125 kg	400 kg
Fibre ^{1, 2, 3}	50 kg	plastics (1H1, 1H2)	125 kg	400 kg
		plywood (1D)	125 kg	400 kg
		fibre (1G)	125 kg	400 kg
		Boxes		
		steel (4A)	125 kg	400 kg
		aluminium (4B)	125 kg	400 kg
		other metal (4N)	125 kg	400 kg
		natural wood (4C1)	125 kg	400 kg
		natural wood with sift-proof walls (4C2)	250 kg	400 kg
		plywood (4D)	125 kg	400 kg
		reconstituted wood (4F)	125 kg	400 kg
		fibreboard (4G)	75 kg	400 kg
		expanded plastics (4H1)	40 kg	60 kg
		solid plastics (4H2)	125 kg	400 kg
		Jerricans		
		steel (3A1, 3A2)	75 kg	120 kg
		aluminium (3B1, 3B2)	75 kg	120 kg
		plastics (3H1, 3H2)	75 kg	120 kg
Single packagings				
Drums				
	steel (1A1 or 1A2 ⁴)		400 kg	400 kg
	aluminium (1B1 or 1B2 ⁴)		400 kg	400 kg
	metal, other than steel or aluminium (1N1 or 1N2 ⁴)		400 kg	400 kg
	plastics (1H1 or 1H2 ⁴)		400 kg	400 kg
	fibre (1G ⁵)		400 kg	400 kg
	plywood (1D ⁵)		400 kg	400 kg
	⁴ These packagings shall not be used for substances of packing group I that may become liquid during transport (see 4.1.3.4).			
	⁵ These packagings shall not be used when the substances being transported may become liquid during transport (see 4.1.3.4).			

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P002	PACKING INSTRUCTION (SOLIDS) <i>(continued)</i>			P002
The following packagings are authorized provided the general provisions of 4.1.1 and 4.1.3 are met.				
Single packagings <i>(continued)</i>		Maximum net mass (see 4.1.3.3)		
	Packing group I	Packing group II	Packing group III	
Jerricans				
steel (3A1 or 3A2 ⁴)	120 kg	120 kg	120 kg	
aluminium (3B1 or 3B2 ⁴)	120 kg	120 kg	120 kg	
plastics (3H1 or 3H2 ⁴)	120 kg	120 kg	120 kg	
Boxes				
steel (4A) ⁵	Not allowed	400 kg	400 kg	
aluminium (4B) ⁵	Not allowed	400 kg	400 kg	
other metal (4N) ⁵	Not allowed	400 kg	400 kg	
natural wood (4C1) ⁵	Not allowed	400 kg	400 kg	
natural wood with sift-proof walls (4C2) ⁵	Not allowed	400 kg	400 kg	
plywood (4D) ⁵	Not allowed	400 kg	400 kg	
reconstituted wood (4F) ⁵	Not allowed	400 kg	400 kg	
fibreboard (4G) ⁵	Not allowed	400 kg	400 kg	
solid plastics (4H2) ⁵	Not allowed	400 kg	400 kg	
Bags				
bags (5H3, 5H4, 5L3, 5M2) ⁵	Not allowed	50 kg	50 kg	
Composite packagings				
Plastics receptacle in steel, aluminium, plywood, fibre or plastics drum (6HA1, 6HB1, 6HG1 ⁵ , 6HD1 ⁵ , or 6HH1)	400 kg	400 kg	400 kg	
Plastics receptacle in steel or aluminium crate or box, wooden box, plywood box, fibreboard box or solid plastics box (6HA2, 6HB2, 6HC, 6HD2 ⁵ , 6HG2 ⁵ or 6HH2)	75 kg	75 kg	75 kg	
Glass receptacle in steel, aluminium, plywood or fibre drum (6PA1, 6PB1, 6PD1 ⁵ or 6PG1 ⁵) or in steel, aluminium, wood, or fibreboard box or in wickerwork hamper (6PA2, 6PB2, 6PC, 6PG2 ⁵ or 6PD2 ⁵) or in solid or expanded plastics packaging (6PH2 or 6PH1 ⁵)	75 kg	75 kg	75 kg	
⁴ These packagings shall not be used for substances of packing group I that may become liquid during transport (see 4.1.3.4).				
⁵ These packagings shall not be used when the substances being transported may become liquid during transport (see 4.1.3.4).				
Pressure receptacles, provided that the general provisions of 4.1.3.6 are met.				
Special packing provisions:				
PP7	For UN 2000, celluloid may be transported unpacked on pallets, wrapped in plastic film and secured by appropriate means, such as steel bands, as a single commodity in closed cargo transport units. Each pallet shall not exceed 1000 kg.			
PP8	For UN 2002, packagings shall be so constructed that explosion is not possible by reason of increased internal pressure. Gas cylinders and gas receptacles shall not be used for these substances.			
PP9	For UN Nos. 3175, 3243 and 3244, packagings shall conform to a design type that has passed a leakproofness test at the packing group II performance level. For UN 3175 the leakproofness test is not required when the liquids are fully absorbed in solid material contained in sealed bags.			
PP11	For UN 1309, packing group III, and UN Nos. 1361 and 1362, 5M1 bags are allowed if they are overpacked in plastic bags and are wrapped in shrink or stretch wrap on pallets.			
PP12	For UN Nos. 1361, 2213 and 3077, 5H1, 5L1 and 5M1 bags are allowed when transported in closed cargo transport units.			
PP13	For articles classified under UN 2870, only combination packagings meeting the packing group I performance level are authorized.			
PP14	For UN Nos. 2211, 2698 and 3314, packagings are not required to meet the performance tests in chapter 6.1.			
PP15	For UN Nos. 1324 and 2623, packagings shall meet the packing group III performance level.			
PP20	For UN 2217, any sift-proof, tearproof receptacle may be used.			
PP30	For UN 2471, paper or fibre inner packagings are not permitted.			
PP31	For UN Nos. 1362, 1463, 1565, 1575, 1626, 1680, 1689, 1698, 1868, 1889, 1932, 2471, 2545, 2546, 2881, 3048, 3088, 3170, 3174, 3181, 3182, 3189, 3190, 3205, 3206, 3341, 3342, 3448, 3449 and 3450, packagings shall be hermetically sealed.			
PP34	For UN 2969 (as whole beans), 5H1, 5L1 and 5M1 bags are permitted.			
PP37	For UN Nos. 2590 and 2212, 5M1 bags are permitted. All bags of any type shall be transported in closed cargo transport units or be placed in closed rigid overpacks.			
PP38	For UN 1309, bags are permitted only in closed cargo transport units or as unit loads.			
PP84	For UN 1057, rigid outer packagings meeting the packing group II performance level shall be used. The packagings shall be designed and constructed and arranged to prevent movement, inadvertent ignition of the devices or inadvertent release of flammable gas or liquid.			
PP85	For UN Nos. 1748, 2208, 2880, 3485, 3486 and 3487, bags are not allowed.			
PP92	For UN Nos. 3531 and 3533, packagings shall be designed and constructed to permit the release of gas or vapour to prevent a build-up of pressure that could rupture the packagings in the event of loss of stabilization.			
PP100	For UN numbers 1309, 1323, 1333, 1376, 1435, 1449, 1457, 1472, 1476, 1483, 1509, 1516, 1567, 1869, 2210, 2858, 2878, 2968, 3089, 3096 and 3125, flexible, fibreboard or wooden packagings shall be sift-proof and water-resistant or shall be fitted with a sift-proof and water-resistant liner.			

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P003	PACKING INSTRUCTION	P003
<p>Dangerous goods shall be placed in suitable outer packagings. The packagings shall meet the provisions of 4.1.1.1, 4.1.1.2, 4.1.1.4, 4.1.1.8 and 4.1.3 and be so designed that they meet the construction provisions of 6.1.4. Outer packagings constructed of suitable material, and of adequate strength and design in relation to the packaging capacity and its intended use, shall be used. Where this packing instruction is used for the transport of articles or inner packagings of combination packagings, the packaging shall be designed and constructed to prevent inadvertent discharge of articles during normal conditions of transport.</p>		
<p>Special packing provisions:</p> <p>PP16 For UN 2800, batteries shall be protected from short circuit within the packagings.</p> <p>PP17 For UN 2037, packages shall not exceed 55 kg net mass for fibreboard packagings or 125 kg net mass for other packagings.</p> <p>PP18 For UN 1845, packagings shall be designed and constructed to permit the release of carbon dioxide gas to prevent a build-up of pressure that could rupture the packagings.</p> <p>PP19 For UN Nos. 1327, 1364, 1365, 1856 and 3360, transport as bales is authorized.</p> <p>PP20 For UN Nos. 1363, 1386, 1408 and 2793, any sift-proof, tearproof receptacle may be used.</p> <p>PP32 UN Nos. 2857 and 3358 may be transported unpackaged, in crates or in appropriate overpacks.</p> <p>PP90 For UN 3506, sealed inner liners or bags of strong leakproof and puncture resistant material impervious to mercury which will prevent escape of the substance from the package irrespective of the position of the package shall be used.</p> <p>PP91 For UN 1044, large fire extinguishers may also be transported unpackaged provided that the requirements of 4.1.3.8.1.1 to 4.1.3.8.1.5 are met, the valves are protected by one of the methods in accordance with 4.1.6.1.8.1 to 4.1.6.1.8.4 and other equipment mounted on the fire extinguisher is protected to prevent accidental activation. For the purpose of this special packing provision, "large fire extinguishers" means fire extinguishers as described in subparagraphs .3 to .5 of special provision 225 of chapter 3.3.</p> <p>PP100 For UN Nos. 1408 and 2793 flexible, fibreboard or wooden packagings shall be sift-proof and water-resistant or shall be fitted with a sift-proof and water-resistant liner.</p>		

P004	PACKING INSTRUCTION	P004
<p>This instruction applies to UN Nos. 3473, 3476, 3477, 3478 and 3479.</p>		
<p>The following packagings are authorized:</p> <p>(1) For fuel cell cartridges, provided that the general provisions of 4.1.1.1, 4.1.1.2, 4.1.1.3, 4.1.1.6 and 4.1.3 are met: Drums (1A2, 1B2, 1N2, 1H2, 1D, 1G); Boxes (4A, 4B, 4N, 4C1, 4C2, 4D, 4F, 4G, 4H1, 4H2); Jerricans (3A2, 3B2, 3H2). Packagings shall conform to the packing group II performance level.</p> <p>(2) For fuel cell cartridges packed with equipment: strong outer packagings which meet the general provisions of 4.1.1.1, 4.1.1.2, 4.1.1.6 and 4.1.3. When fuel cell cartridges are packed with equipment, they shall be packed in inner packagings or placed in the outer packaging with cushioning material or divider(s) so that the fuel cell cartridges are protected against damage that may be caused by the movement or placement of the contents within the outer packaging. The equipment shall be secured against movement within the outer packaging. For the purpose of this packing instruction, "equipment" means apparatus requiring the fuel cell cartridges with which it is packed for its operation.</p> <p>(3) For fuel cell cartridges contained in equipment: strong outer packagings which meet the general provisions of 4.1.1.1, 4.1.1.2, 4.1.1.6 and 4.1.3. Large robust equipment (see 4.1.3.8) containing fuel cell cartridges may be transported unpackaged. For fuel cell cartridges contained in equipment, the entire system shall be protected against short circuit and inadvertent operation.</p>		

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P005	PACKING INSTRUCTION	P005
This instruction applies to UN Nos. 3528, 3529 and 3530.		
<p>If the engine or machinery is constructed and designed so that the means of containment containing the dangerous goods affords adequate protection, an outer packaging is not required.</p> <p>Dangerous goods in engines or machinery shall otherwise be packed in outer packagings constructed of suitable material, and of adequate strength and design in relation to the packaging capacity and its intended use, and meeting the applicable requirements of 4.1.1.1, or they shall be fixed in such a way that they will not become loose during normal conditions of transport, e.g. in cradles or crates or other handling devices.</p> <p>In addition, the manner in which means of containment are contained within the engine or machinery, shall be such that under normal conditions of transport, damage to the means of containment containing the dangerous goods is prevented; and in the event of damage to the means of containment containing liquid dangerous goods, no leakage of the dangerous goods from the engine or machinery is possible (a leakproof liner may be used to satisfy this requirement).</p> <p>Means of containment containing dangerous goods shall be so installed, secured or cushioned as to prevent their breakage or leakage and so as to control their movement within the engine or machinery during normal conditions of transport. Cushioning material shall not react dangerously with the content of the means of containment. Any leakage of the contents shall not substantially impair the protective properties of the cushioning material.</p>		
Additional requirement:		
Other dangerous goods (e.g. batteries, fire extinguishers, compressed gas accumulators or safety devices) required for the functioning or safe operation of the engine or machinery shall be securely mounted in the engine or machine.		

P010	PACKING INSTRUCTION	P010	
The following packagings are authorized, provided that the general provisions of 4.1.1 and 4.1.3 are met.			
Combination packagings		Maximum net mass (see 4.1.3.3)	
Inner packagings	Outer packagings		
Glass 1 L Steel 40 L	Drums		
		steel (1A1, 1A2)	400 kg
		plastics (1H1, 1H2)	400 kg
		plywood (1D)	400 kg
		fibre (1G)	400 kg
	Boxes		
		steel (4A)	400 kg
		natural wood (4C1, 4C2)	400 kg
		plywood (4D)	400 kg
		reconstituted wood (4F)	400 kg
		fibreboard (4G)	400 kg
		expanded plastics (4H1)	60 kg
		solid plastics (4H2)	400 kg
	Single packagings		Maximum capacity (see 4.1.3.3)
Drums			
	steel, non-removable head (1A1)	450 L	
Jerricans			
	steel, non-removable head (3A1)	60 L	
Composite packagings			
	plastics receptacle in steel drums (6HA1)	250 L	
Steel pressure receptacles			
provided that the general provisions of 4.1.3.6 are met.			

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P099	PACKING INSTRUCTION	P099
<p>Only packagings which are approved for these goods by the competent authority may be used (see 4.1.3.7). A copy of the competent authority approval shall accompany each consignment or the transport document shall include an indication that the packaging was approved by the competent authority.</p>		

P101	PACKING INSTRUCTION	P101
<p>Only packagings which are approved by the competent authority may be used. The State's distinguishing sign for motor vehicles in international traffic of the country for which the authority acts shall be marked on the transport documents as follows: "Packaging approved by the competent authority of ..."</p>		

P110(a)	PACKING INSTRUCTION	P110(a)
<p>The following packagings are authorized, provided the general packing provisions of 4.1.1, 4.1.3 and special packing provisions of 4.1.5 are met.</p>		
Inner packagings	Intermediate packagings	Outer packagings
Bags plastics textile, plastic coated or lined rubber textile, rubberized textile Receptacles wood	Bags plastics textile, plastic coated or lined rubber textile, rubberized Receptacles plastics metal wood	Drums steel (1A1, 1A2) metal, other than steel or aluminium (1N1, 1N2) plastics (1H1, 1H2)
<p>Additional provisions:</p> <ol style="list-style-type: none"> 1 The intermediate packagings shall be filled with water-saturated material such as an anti-freeze solution or wetted cushioning. 2 Outer packagings shall be filled with water-saturated material such as an anti-freeze solution or wetted cushioning. Outer packagings shall be constructed and sealed to prevent evaporation of the wetting solution, except for UN 0224 when transported dry. 		

P110(b)	PACKING INSTRUCTION	P110(b)
<p>The following packagings are authorized, provided the general packing provisions of 4.1.1, 4.1.3 and special packing provisions of 4.1.5 are met.</p>		
Inner packagings	Intermediate packagings	Outer packagings
Receptacles metal wood rubber, conductive plastics, conductive Bags rubber, conductive plastics, conductive	Dividing partitions metal wood plastics fibreboard	Boxes natural wood, sift-proof wall (4C2) plywood (4D) reconstituted wood (4F)
<p>Special packing provision:</p> <p>PP42 For UN Nos. 0074, 0113, 0114, 0129, 0130, 0135 and 0224, the following conditions shall be met:</p> <ol style="list-style-type: none"> .1 inner packagings shall not contain more than 50 g of explosive substance (quantity corresponding to dry substance); .2 compartments between dividing partitions shall not contain more than one inner packaging, firmly fitted; and .3 the outer packaging may be partitioned into up to 25 compartments. 		

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