



Maritime &
Coastguard
Agency

MARINE GUIDANCE NOTE

MGN 624 (M+F) Amendment 1 The Merchant Shipping and Fishing Vessels (Health and Safety at Work) (Carcinogens and Mutagens) Regulations 2007 as amended

Notice to all ship, yacht and fishing vessel owners, operators and managers and other employers of seafarers; masters, officers and seafarers on merchant ships and yachts; and skippers and crew of fishing vessels.

This notice should be read with the merchant shipping and fishing vessels (health and safety at work) (carcinogens & mutagens) regulations 2007¹, as amended by the carcinogens and mutagens (miscellaneous amendments) regulations 2020² and replaces MGN 624 (M+F)

Summary

This notice provides guidance on the requirements for the protection of those working on board ships from the risks related to exposure to carcinogens and mutagens at work.

This notice includes amendments introduced in January 2020.

- A risk assessment must identify the use of carcinogens or mutagens on board ship and any potential exposure. On 2 March 2020, work involving exposure to respirable crystalline silica dust generated by a work process is added to the list of substances and process to which the definition of carcinogen relates (Annex 1).
- The table of limit values is at Annex 3 and includes amendments in force from 2 March 2020.
- Where possible, carcinogens and mutagens must be replaced by less harmful substances or processes.
- Where the risk cannot be removed, other measures must be taken to minimise the risk.
- Where there is a risk to the health and safety of those working on ships from carcinogens and mutagens, the Secretary of State may require information on the risks and the measures taken for the protection of those affected.

¹ [2007/3100](#)

² [2020/40](#)

- Information must be provided to those working on ships about foreseeable exposure to such substances, and measures must be taken for their protection from both foreseeable and unforeseen exposure.
- Access to areas where there is a risk of exposure must be restricted.
- Hygiene and individual protection measures must be put in place
- Information and training must be provided, and consultation carried out, on matters covered by the carcinogens and mutagens regulations.
- Where a risk of exposure is identified, the employer must provide health surveillance to workers. If specified by a medical practitioner, health surveillance must extend beyond the period of exposure, while the individual is employed by that employer, for as long as the medical practitioner requires. Records must be kept.

Amendment 1 updates references and contact information only.

1. Introduction

1.1 The Merchant Shipping and Fishing Vessels (Health and Safety at Work) (Carcinogens and Mutagens) Regulations 2007 (SI 2007/ 3100), as amended (the “Carcinogens and Mutagens Regulations”) lay down requirements for the protection of those working on ships from the risks related to exposure to carcinogens and mutagens at work. They require that risk assessment under the Merchant Shipping and Fishing Vessels (Health and Safety at Work) Regulations 1997 considers the risks to workers arising from exposure to carcinogens and mutagens.

1.2 Since they were made in 2007, the Merchant Shipping and Fishing Vessels (Health and Safety at Work) (Carcinogens and Mutagens) Regulations 2007 have been amended by:

1.2.1 the Merchant Shipping and Fishing Vessels (Health and Safety at Work) (Miscellaneous Amendments) Regulations 2010 (S.I. 2010/1110, extending the application to hovercraft);

1.2.2 the Classification, Labelling and Packaging of Chemicals (Amendments to Secondary Legislation) Regulations 2015 (S.I. 2015/21, to reflect the introduction of the CLP Regulation – see paragraph 2.1 below); and

1.2.3 the Carcinogens and Mutagens (Miscellaneous Amendments) Regulations 2020 (S.I. 2020/40).

2. Interpretation (Regulation 2)

2.1 A carcinogen is any substance for which there is sufficient evidence to establish a link between human exposure to that substance and the development of cancer. This is defined in the carcinogens and mutagens regulations as –

a) a substance or mixture which meets the criteria for classification as a category 1A or 1B carcinogen set out in Annex I to the CLP Regulation whether or not the substance or mixture would be required to be classified under that Regulation; or

(b) a substance or mixture which is—

(i) referred to in Schedule 1; or

(ii) released by a process referred to in Schedule 1 and is a substance hazardous to health.

Schedule 1 of the Carcinogens and Mutagens Regulations is repeated at Annex 1 of this MGN.

“CLP Regulation” means Regulation (EC) No 1272/2008 of the European Parliament and of the Council of 16 December 2008 on classification, labelling and packaging of substances and mixtures, amending and repealing Directives 67/548/EEC and 1999/45/EC and amending Regulation (EC) No 1907/2006. Articles 6(5), 11(3), 12, 14, 18(3)(b), 23, 25 to 29, 35(2) second and third sub-paragraphs and Annexes I to VII of Regulation (EC) No 1272/2008 are to be read in their latest version, as they may be amended from time to time.

The CLP Regulation implements a harmonised system for classification, labelling and packaging of substances and mixtures, in line with the UN Global Harmonised System.

2.2 A mutagen is a substance for which there is sufficient evidence to establish a link between human exposure to that substance and heritable genetic damage. This is defined in the Carcinogens and Mutagens Regulations as –

- a substance or mixture which meets the criteria for classification as a category 1A or 1B germ cell mutagen set out in Annex I to the CLP Regulation, whether or not the substance or mixture would be required to be classified under that Regulation.

2.3 In the Carcinogens and Mutagens Regulations, “worker” means a person employed under a contract of employment, whether express or implied, and if express whether oral or in writing, to work on activities to which these Regulations apply.

“worker” includes a trainee or apprentice so employed except a trainee training on a sailing training vessel (as defined in the Regulations).

3. Application (Regulation 3)

3.1 The Carcinogens and Mutagens Regulations generally apply to all activities of workers on UK registered vessels wherever they are in the world and certain provisions also apply to non-UK ships in UK waters. The application covers all types of commercial vessel and includes those on inland waters. Exceptions to the Regulations cover:

- workers exposed to radiation covered by the Treaty establishing the European Atomic Energy Community
- land-based workers who are subject HSE's Control of Substances Hazardous to Health Regulations 2002 (S.I. 2002/2677) or the Northern Ireland Control of Substances Hazardous to Health Regulations (Northern Ireland) 2003 (S.R. 2003/34).

3.2 In addition to the exceptions referred to in paragraph 3.1, regulation 3(2) provides for a limited derogation from the requirements of the Carcinogens and Mutagens Regulations for vessels being used in the course of public service activities or activities for the purpose of civil protection services (ambulance or search and rescue or security services) where because of characteristics peculiar to those activities full compliance with the Carcinogens and Mutagens Regulations is not possible.

3.3 The derogations referred to in paragraphs 3.2 above only apply to the specific provision, or part thereof, where compliance is not possible because of the activity being carried out and only for the length of time when compliance is not possible. All other provisions are to be complied with in full and even for those provisions where full compliance is not possible the employer must ensure that the health and safety of workers who are or who are likely to be exposed to risks from carcinogens and mutagens as a result is protected so far as is reasonably practicable.

3.4 In addition, the Merchant Shipping (Maritime Labour Convention) (Health and Safety) (Amendments) Regulations 2014 (S.I. 2014/1616) extended duties imposed on employers under the Carcinogens and Mutagens Regulations. Where a duty is owed by an employer to a worker in respect of workplace health and safety under the Carcinogens and Mutagens Regulations and at least one seafarer who is not a worker is also exposed to the risk that workers are exposed to, unless it is not reasonably practicable and appropriate, the shipowner must ensure that any action taken to discharge the duty is also taken in respect of such seafarers. In general, references to employers in this notice therefore include shipowners, and references to workers include seafarers who are not workers.

4. Assessment of Health Risks (Regulation 4)

4.1 The employer needs to decide how to conduct a risk assessment to take account of possible exposure to carcinogens and mutagens and whether specialist advice is needed. As a minimum, the risk assessment is likely to involve:

- checking products carried on board, either for use on the vessel or as cargo, to see whether they have a warning symbol on the label which indicates that there is a potential risk to health and safety
- where such symbols are present, obtaining Safety Data Sheets from the respective manufacturers/suppliers, unless sufficient information is provided on the product itself.
- paying special attention to those at particular risk such as potential, new or expectant mothers, young persons, and take account of the desirability of not employing such workers in areas where they may come into contact with carcinogens or mutagens; and
- considering all possible routes of exposure, including absorption into or through the skin.

4.2 With regard to those at particular risk, it is desirable not to employ such workers in areas where they may come into contact with carcinogens or mutagens, and account must be taken of this in the risk assessment.

4.3 In some cases, more complex issues may need to be considered, for example in the case of substances which are not hazardous on their own but have the potential to become so if mixed with other substances. In such cases appropriate expert advice should be sought from qualified persons such as consultants or occupational health practitioners. More detailed guidance on the identification of hazards and the assessment of risks can be found in the International Maritime Dangerous Goods Code and the Code of Safe Working Practices for Merchant Seafarers.

4.4 A list of the information to be included in a Safety Data Sheet is at Annex 2. HSE also produce an "Approved Supply List" which is a comprehensive list indicating the risk category of a wide range of products, not just those which are classified as carcinogens or mutagens.

4.5 The risk assessment must be renewed regularly, and in any event when any change occurs in the conditions which may affect workers' exposure.

5. Reduction and replacement of Carcinogens and Mutagens (Regulation 5)

5.1 Where potential risks from carcinogens and mutagens are identified employers are required to take appropriate measures to:

- (a) remove the risk entirely by replacing them with substances, preparations or processes which, under their conditions of use, are not dangerous; or where that is not possible,
- (b) reduce the risk by replacing them, in so far as it is technically possible, by substances, preparations or processes which, under their conditions of use, are less dangerous to workers' health or safety.

The reference to replacement by "less dangerous" substances in paragraph 5.1 means replacement by a substance that is the least dangerous in the circumstances.

6. Prevention and reduction of exposure (Regulation 6)

6.1 Where the risk assessment required by regulation 4 reveals a risk to workers' health or safety from carcinogens and mutagens, and the measures required by paragraph 5.1 above, do not result in the complete removal of that risk but only reduce it, employers are required to;

- (a) ensure that the carcinogen or mutagen is, so far as technically possible, manufactured or used in a closed system;

- (b) ensure that the level of exposure of workers is reduced to as low a level as is technically possible; and
- (c) ensure that in no circumstances does the exposure exceed the limit values set out in the table in Schedule 2 to the Regulations (replicated at Annex 3 to this MGN). (NOTE - In this context "limit value" means, unless otherwise specified, the limit of the time-weighted average of the concentration for a carcinogen or mutagen in the air within the breathing zone of a worker in relation to a specified reference period as set out in that Schedule).

6.2 In addition, wherever a carcinogen or mutagen is used, employers shall take all the measures specified in Schedule 3 to the Regulations (replicated at Annex 4 to this MGN). The list is not an exhaustive list of measures and it is for the employer to decide whether any additional measures might be appropriate in the individual circumstances.

7. Information for the Secretary of State (Regulation 7)

Where the risk assessment reveals a risk to workers' health and safety, the Maritime and Coastguard Agency, on behalf of the Secretary of State, may request the employer to provide the following information:-

- the activities or industrial processes assessed, including the reasons for using carcinogens or mutagens;
- the quantities of substances or preparations manufactured or used which contain carcinogens or mutagens;
- the number of workers exposed;
- the preventive measures taken;
- the type of protective equipment used;
- the nature and degree of exposure;
- the cases of replacement.

8. Unforeseen Exposure (Regulation 8) and Foreseeable Exposure (Regulation 9)

8.1 The employer is required to inform workers and take appropriate precautions, to restrict the exposure of workers, if an unforeseeable event or accident may result in an abnormal exposure of workers (e.g. leakage of a hazardous cargo).

8.2 The employer is required to put in place appropriate measures to deal with activities for which there is a foreseeable risk of exposure.

9. Access to Risk Areas (Regulation 10)

9.1 The employer is required to restrict access to areas where there is a risk of exposure to carcinogens and mutagens to only those workers who are required to enter them in pursuance of their work or duties.

10. Hygiene and Individual Protection Measures (Regulation 11)

10.1 Where there is a risk of exposure to carcinogens and mutagens, employer must also put hygiene and individual protection measures in place, including ensuring that:-

- (a) workers do not eat, drink or smoke in areas where there is a risk of contamination by carcinogens or mutagens;
- (b) workers are provided with appropriate special clothing;
- (c) separate storage places are provided for working or protective clothing and for other clothes;
- (d) workers are provided with appropriate and adequate washing and toilet facilities;

- (e) protective equipment is properly stored in a well-defined place and is checked and cleaned, if possible before, and in any case after each use; and
- (f) defective equipment is properly repaired or replaced before further use.

11. Information and Training of Workers (Regulation 12)

- 11.2 In particular, this must include information and instructions on –
- potential risks to health, including the additional risks due to tobacco consumption;
 - precautions to prevent exposure;
 - the requirements of hygiene;
 - the wearing and use of protective clothing; and
 - the steps to be taken by workers, including rescue workers, in the case of incidents and to prevent incidents.
- 11.3 Such training provided must be adapted to take account of new or changed risks and repeated periodically if necessary.
- 11.4 Information must be provided on where any installations, containers and packages containing carcinogens or mutagens are on board. The installations, containers and packages must be clearly and legibly labelled with clearly visible warning and hazard signs displayed on them.
- 11.5 The employer must ensure that workers or their representatives can verify that these Regulations are being applied or can be involved in their application. In particular it is important that workers are involved in consideration of -
- 11.5.1 the consequences for workers' safety and health of the selection, wearing and use of protective clothing and equipment; and
- 11.5.2 the measures to be determined by the employer for protecting workers from foreseeable exposure (see section 8).
- 11.6 Workers or their representatives must be informed as quickly as possible of abnormal exposures, of their causes and the corrective measures to be taken.
- 11.7 The employer must keep an up-to-date list of the workers engaged in activities as respects a risk to the health or safety of workers, has been identified through risk assessment, including (if the information is available) the exposure to which they have been subjected. The doctor or the Secretary of State as well as any other person with responsibility for the health and safety of workers at work must have access to that list. Any worker must have access to the information on the list that relates to him personally; and workers or their representatives must have access to anonymous collective information.

12. Consultation with workers (Regulation 13)

- 12.1 Employers must consult with workers and their representatives on matters covered by the Regulations as required by Regulation 20 of the Merchant Shipping and Fishing Vessels (Health and Safety at Work) Regulations 1997.

13. Health Surveillance (Regulation 14)

- 13.1 Where a risk assessment identifies a risk of exposure to carcinogens or mutagens, health surveillance must be provided to workers. For example, an employer must provide health surveillance if their risk assessment identifies that workers have been or may be exposed to a carcinogenic substance during their work activities. Health surveillance may be provided "in house", perhaps by a company-employed doctor or occupational health care professional or may be contracted out to a health care provider or other body.

Those carrying out health surveillance must have regard to the following practical recommendations:

13.2.1 Any doctor or body undertaking health surveillance of workers exposed to carcinogens or mutagens should be familiar with the exposure conditions or circumstances of each worker.

13.2.2 In addition, health monitoring of workers should be carried out in accordance with the principles and practices of occupational medicine and must include at least the following measures—

- keeping records of a worker's medical and occupational history;
- a personal interview;
- where appropriate, biological monitoring, as well as detection of early and reversible effects.

13.2.3 Further tests may be decided upon for each worker when he is the subject of health monitoring, in the light of the most recent knowledge available to occupational medicine.

13.2 Whatever method of health surveillance is provided, the primary requirement is that a worker should be able to undergo appropriate health screening before exposure and at regular intervals thereafter in a manner which permits the implementation of individual and occupational hygiene measures.

13.3 If a worker is found to be suffering from an abnormality which is suspected to be the result of exposure to carcinogens or mutagens, the doctor or body responsible for the health surveillance should be able to request that other workers who have been similarly exposed should undergo health surveillance.

13.4 Where health surveillance is carried out, the person or body responsible should ensure that an individual medical record is kept for each person undergoing such surveillance (having regard to the need to ensure the confidentiality of such information). Additionally, the doctor or authority responsible for health surveillance must be in a position to propose that any protective or preventive measures be taken in respect of any individual worker. Workers must be given access to the results of health surveillance which concern them and the workers or the employer may request a review of the results of health surveillance.

13.5 If the doctor responsible for the health surveillance of a worker records in that worker's individual medical record that the health surveillance of the worker should continue after exposure has ended, the worker's employer must comply with that recommendation, for as long as the doctor recommends, provided that the worker remains employed by the employer.

13.6 All cases of cancer which can be identified as resulting from occupational exposure to a carcinogen or mutagen are required to be notified to the Secretary of State for Transport (Maritime and Coastguard Agency.)

14. Record Keeping (Regulation 15)

14.1 The list of workers engaged in work in relation to which a risk of exposure has been identified and what carcinogen or mutagen they have been exposed to (paragraph 11.7) and the individual medical records from health surveillance (paragraph 13.5) are required to be kept for at least 40 years following the end of exposure and are to be made available to the Secretary of State for Transport (in practice the Maritime and Coastguard Agency) should the employer cease trading.

15. Persons on whom duties are imposed (Regulation 16)

15.1 It is the duty of every employer, and any other person on whom a duty is imposed by the Carcinogens and Mutagens Regulations to comply with the relevant provisions of those Regulations.

15.2 Where any duty under the Carcinogens and Mutagens Regulations is imposed on individuals who do not have responsibility for the operation of the ship, such duty is extended to any person who does have control of the matter to which the Regulation in question relates, which may be a particular employer or employers or some other party.

15.3 In addition to the responsibility placed on the employer(s) there is a responsibility placed on every worker to which the Regulations apply to make full and proper use of all protective equipment provided by the employer, and to give effect to all instruction and training with which the worker has been provided.

16. Offences and penalties (Regulations 17 - 19)

16.1 Regulations 17 to 19 are the enforcement provisions; any contravention of the Carcinogens and Mutagens Regulations is an offence. There is also provision for corporate offences and where any proceedings are instituted for an offence under the Carcinogens and Mutagens Regulations which consists of a failure to comply with a duty or requirement to do something so far as is reasonably practicable, it will be for the defendant to prove that compliance with that duty or requirement was not reasonably practicable.

17. Work involving exposure to respirable crystalline silica dust generated by a work process

17.1 Work involving exposure to respirable crystalline silica (RCS) dust generated by a work process is included in the list of substances and activities included in the definition of a carcinogen. RCS dust can be created by the sanding or chipping of marine paints. Chapter 25 of the Code of Safe Working Practices for Merchant Seafarers recommends that painted surfaces should always be rubbed down wet to reduce dust from the old paint which may be toxic. Respiratory protection of at least FFP2 or P2 standard should be worn.

18. Medicinal Use of Coal Tar

18.1 Schedule 1 to the Carcinogens and Mutagens Regulations (set out at Annex 1 to this MGN) specifically lists polycyclic aromatic hydrocarbons present in coal soot, coal tar or coal pitch as substances to which the definition of carcinogen relates. Having taken medical advice on this the Department considers that it should be noted that, for the purposes of the Carcinogen & Mutagen Regulations, the reference to coal tar does not apply to coal tar used for the medical treatment of Psoriasis.

19. Additional Guidance

19.1 Further information on carcinogens and mutagens, Safety Data Sheets, and risk assessments can be obtained from a variety of sources including the internet. Some sources of additional information/guidance are set out at Annex 5 to this MGN.

More information

Seafarer Safety and Health Branch
Maritime and Coastguard Agency
Bay 2/17
Spring Place
105 Commercial Road
Southampton
SO15 1EG

Telephone: +44 (0)203 81 72250

Email: seafarersafety@mcga.gov.uk

Website: www.gov.uk/mca

General enquiries: infoline@mcga.gov.uk

Please note that all addresses and telephone numbers are correct at time of publishing.

Other substance and processes to which the definition of carcinogen relates

- Aflatoxins.
- Arsenic.
- Auramine manufacture.
- Work involving exposure to dusts, fumes and sprays produced during the roasting and electro-refining of cupro-nickel mattes.
- Work involving exposure to polycyclic aromatic hydrocarbons present in coal soot, coal tar or coal pitch.
- Hardwoods dusts.
- Work involving exposure to respirable crystalline silica dust generated by a work process. Isopropyl alcohol manufacture (strong acid process).
- Leather dust in boot and shoe manufacture, arising during preparation and finishing. Magenta manufacture.
- Mustard gas (beta, beta'- dichlorodiethyl sulphide).
- Rubber manufacturing and processing giving rise to rubber process dust and rubber fume. Used engine oils.
- The following polychlorodibenzodioxins—
 - 2,3,7,8-TCCD
 - 1,2,3,7,8-PeCDD
 - 1,2,3,4,7,8-HxCDD
 - 1,2,3,6,7,8-HxCDD
 - 1,2,3,7,8,9-HxCDD
 - 1,2,3,4,6,7,8-HpCDD OCDD.
- The following polychlorodibenzofurans—
 - 2,3,7,8-TCDF
 - 2,3,4,7,8-PeCDF
 - 1,2,3,7,8-PeCDF
 - 1,2,3,4,7,8-HxCDF
 - 1,2,3,7,8,9-HxCDF
 - 1,2,3,6,7,8-HxCDF
 - 2,3,4,6,7,8-HxCDF
 - 1,2,3,4,6,7,8-HpCDF
 - 1,2,3,4,7,8,9-HpCDF
 - OCDF.

Where T=tetra, Pe=penta, Hx=hexa, Hp=hepta and O=octa.

Safety Data Sheets

Under the REACH Regulations, suppliers of chemicals must provide an up to date safety data sheet if a substance is dangerous for supply. A safety data sheet must contain the information under the following obligatory headings:

1. identification of the substance/preparation and of the company/undertaking;
2. hazards identification;
3. composition/information on ingredients;
4. first-aid measures;
5. fire-fighting measures;
6. accidental release measures;
7. handling and storage;
8. exposure controls/personal protection;
9. physical and chemical properties;
10. stability and reactivity;
11. toxicological information;
12. ecological information;
13. disposal considerations;
14. transport information;
15. regulatory information;
16. other information.

Table of Limit Values

Name of agent	EC No ⁽¹⁾	CAS No (2)	Limit values ⁽³⁾			Notation	Transitional measures
			mg/m ³ (4)	ppm ⁽⁵⁾	f/ml ⁽⁶⁾		
Hardwood dusts	—	—	2 (7)	—	—	—	Limit value 3 mg/m ³ until 17 January 2023
Chromium (VI) compounds which are carcinogens within the meaning of point (i) of Article 2(a) (as chromium)	—	—	0,005	—	—	—	Limit values: 0,025 mg/m ³ for welding or plasma cutting processes or similar work processes that generate fume until 17 January 2025, and 0,010 mg/m ³ until 17 January 2025 in all other cases
Refractory ceramic fibres which are carcinogens within the meaning of point (i) of Article 2(a)	—	—	—	—	0,3	—	
Respirable crystalline silica dust	—	—	0,1 (8)	—	—	—	
Benzene	200-753-7	71-43-2	3,25	1	—	skin (9)	
Vinyl chloride monomer	200-831-0	75-01-4	2,6	1	—	—	
Ethylene oxide	200-849-9	75-21-8	1,8	1	—	skin (9)	
1,2-Epoxypropane	200-879-2	75-56-9	2,4	1	—	—	
Acrylamide	201-173-7	79-06-1	0,1	—	—	skin (9)	
2-Nitropropane	201-209-1	79-46-9	18	5	—	—	
o-Toluidine	202-429-0	95-53-4	0,5	0,1	—	skin (9)	
1,3-Butadiene	203-450-8	106-99-0	2,2	1	—	—	
Hydrazine	206-114-9	302-01-2	0,013	0,01	—	skin (9)	
Bromoethylene	209-800-6	593-60-2	4,4	1	—	—	

(1) EC No, i.e. EINECS, ELINCS or NLP, is the official number of the substance within the European Union, as defined in Section 1.1.1.2 in Annex VI, Part 1, to Regulation (EC) No 1272/2008.

(2) CAS No: Chemical Abstract Service Registry Number.

- (3) Measured or calculated in relation to a reference period of eight hours.
- (4) mg/m³ = milligrams per cubic metre of air at 20 °C and 101,3 kPa (760 mm mercury pressure).
- (5) ppm = parts per million by volume in air (ml/m³).
- (6) f/ml = fibres per millilitre.
- (7) Inhalable fraction: if hardwood dusts are mixed with other wood dusts, the limit value shall apply to all wood dusts present in that mixture.
- (8) Respirable fraction.
- (9) Substantial contribution to the total body burden via dermal exposure possible.

ANNEX 4

Measures to be taken by the employer to prevent or limit exposure to carcinogens and mutagens

1. Limitation of the quantities of a carcinogen or mutagen at the place of work.
2. Keeping as low as possible the number of workers exposed or likely to be exposed,
3. Design of work processes and engineering control measures so as to avoid or minimise the release of carcinogens or mutagens into the place of work.
4. Evacuation of carcinogens or mutagens at source, local extraction system or general ventilation, all such methods to be appropriate and compatible with the need to protect public health and the environment.
5. Use of existing appropriate procedures for the measurement of carcinogens or mutagens, in particular for the early detection of abnormal exposures resulting from an unforeseeable event of an accident.
6. Application of suitable working procedures and methods.
7. Collective protection measures.
8. Where exposure cannot be avoided by other means, individual protection measures taken on their own or together with collective protection measures.
9. Hygiene measures, including in particular regular cleaning of floors, walls and other surfaces.
10. Information for workers.
11. Demarcation of risk areas and use of adequate warning and safety signs including no smoking signs in areas where workers are exposed or likely to be exposed to carcinogens or mutagens.
12. Drawing up plans to deal with emergencies likely to result in abnormally high exposure.
13. Means of safe storage and disposal of waste by workers, including the use of sealed and clearly and visibly labelled containers.

Useful sources of information

MCA Publications

Merchant Shipping Notices, Marine Guidance Notes and Marine Information Notes are available at; <https://www.gov.uk/government/organisations/maritime-and-coastguard-agency>

[Code of Safe Working Practices for Merchant Seafarers](#) - copies of this document are required to be carried on board all UK registered ships except fishing vessels.

Copies can also be purchased from the MCA's official publisher TSO;

Tel: +44(0)333 202 5070

Website: www.tsoshop.co.uk

E-mail: customer.services@tso.co.uk

HSE Publications

[HSE List of Legal Publications](#)

Approved supply list 8th edition - Information approved for the classification and labelling of substances and preparations dangerous for supply - Chemicals (Hazard Information and Packaging for Supply) Regulations 2002 (as amended) – Ref: L142 ISBN 0717661385

Approved classification and labelling guide - Chemicals (Hazard Information and Packaging for Supply) Regulations 2002 – Ref: L131 ISBN 0717623696

[EH40/2005](#) Workplace exposure limits. Containing the list of workplace exposure limits for use with the Control of Substances Hazardous to Health Regulations 2002 (as amended) - ISBN 9780717667031

[Biological monitoring in the workplace](#). A guide to its practical application to chemical exposure. - ISBN 9780717612796

[Seven steps to successful substitution](#) of hazardous substances

The above HSE documents can be obtained through good booksellers or from the HSE Books website; <https://books.hse.gov.uk/>

Free leaflets can also be found and downloaded from HSE's main website.

Website: www.hse.gov.uk

NOTE - The above list is not exhaustive and further useful information may be obtainable from other sources.