Maritime & Coastguard Agency

MARINE GUIDANCE NOTE

MGN 547 (M)

SOLID BULK CARGOES - SAFE CARRIAGE OF BAUXITE

Notice to all all ship owners, ship operators, terminal operators, port authorities, classification societies, agents, charterers, shippers, consignors, training providers, masters, officers and crews of merchant ships and all other parties involved in the transportation of solid bulk cargoes by sea.

Summary

The purpose of this Marine Guidance Note is to advise industry of the circular issued by the International Maritime Organization (IMO) Sub-Committee on Carriage of Cargoes and Containers, CCC.1/Circ.2, on safe carriage of bauxite and raise awareness of the possible dangers of liquefaction associated with carriage of bauxite.

1. Introduction/ Background

1.1 Cargoes which contain a certain proportion of fine particles and a certain amount of moisture may liquefy if shipped with a moisture content in excess of their transportable moisture limit. Such cargoes may appear to be dry when loaded, and yet may contain sufficient moisture to saturate parts of the cargo which can become fluid under the stimulus of compaction and vibration during a voyage.

1.2 On the 2nd January 2015, the Bahamas-registered bulk carrier BULK JUPITER carrying a cargo of approximately 46,400 tonnes of bauxite on a voyage from Kuantan, Malaysia, to Qingdao, People's Republic of China, sank approximately 150 nautical miles off the coast of Vietnam with the loss of 18 lives from a crew of 19. A marine safety investigation carried out by the vessel's flag State has uncovered evidence to suggest that the loss of the vessel may have been caused by liquefaction of the cargo.

1.3 For a number of years IMO has regulated the transportation of solid bulk cargo through the International Maritime Solid Bulk Cargoes (IMSBC) Code. Awareness of the properties of materials, and potential risks is continually developing and this is particularly true in regard to the risk of liquefaction.

1.4 The bulk ore industry in Australia and Brazil commenced research work related to the properties of BAUXITE in 2013 as a result of the outcome of the earlier research on IRON ORE FINES and continued reports of incidents have highlighted the need to complete this work as quickly as possible.

1.5 While noting that this work is under way, the IMO Sub-Committee on the Carriage of Cargoes and Containers (CCC) issued a circular entitled “CARRIAGE OF BAUXITE THAT MAY LIQUEFY” advising the industry of the need to exercise care and take appropriate action consistent with the relevant IMO instruments, when handling and carrying bauxite in bulk.

2. CCC Circular ,CCC.1/Circ.2, CARRIAGE OF BAUXITE THAT MAY LIQUEFY

2.1 The potential for bauxite to liquefy is not specifically addressed in the IMSBC Code, with the material only being identified as Group C.

2.2 If a Group A cargo is shipped with moisture content in excess of its transportable moisture limit (TML) there is a risk of cargo shift; which may result in capsizing.

2.3 The Master should not accept this cargo for loading unless:

2.3.1 The moisture content of the cargo indicated in the certificate is less than the indicative moisture limit of 10% and the particle size distribution as is detailed in the individual schedule for BAUXITE in the IMSBC Code; or

2.3.2 The cargo is declared as Group A and the shipper declares the TML and moisture content in accordance with section 4.3.1 of the IMSBC Code; or

2.3.3 The competent authority has assessed the cargo and determines that the particular cargo does not present Group A properties. Such assessments shall be provided by the shipper to the Master as required by section 1.2.1 of the IMSBC Code.

2.4 If the master has reason to doubt that the cargo being loaded is consistent with the shipper’s declaration then the master should stop loading and have the shipper verify the properties of the cargo. If necessary, advice should be sought from the competent authority of the country of loading.

2.5 If the cargo is declared as Group A, the master should refer to section 7 of the IMSBC Code, which warns about cargoes that may liquefy.

The CCC Circular,CCC.1/Circ.2, is attached which sets out the full details.

More Information

Environmental Policy Branch
Maritime and Coastguard Agency
Bay 2/29
Spring Place
105 Commercial Road
Southampton
SO15 1EG

Tel : +44 (0) 23 8032 9481
Fax : +44 (0) 23 8032 9204
e-mail: reza.nosrati@mcga.gov.uk

Website Address: www.gov.uk/government/organisations/maritime-and-coastguard-agency

General Inquiries: infoline@mcga.gov.uk

File Ref: MS 029/013/0001

Published: April 2016
Please note that all addresses and
telephone numbers are correct at time of publishing

Safer Lives, Safer Ships, Cleaner Seas

INTERNATIONAL MARITIME ORGANIZATION

E

4 ALBERT EMBANKMENT
LONDON SE1 7SR
Telephone: +44 (0)20 7735 7611 Fax: +44 (0)20 7587 3210

CCC.1/Circ.2
20 October 2015

CARRIAGE OF BAUXITE THAT MAY LIQUEFY

1 The Sub-Committee on Carriage of Cargoes and Containers (CCC), at its second session (14 to 18 September 2015), considered submissions made by the Bahamas in document CCC 2/5/16 relating to the carriage of this cargo, including some initial considerations of the circumstances surrounding the loss of the 10-year-old Bahamas flag Supramax bulk carrier **BULK JUPITER** with the loss of 18 lives on 2 January 2015.

2 The cargo of bauxite was declared as a Group C cargo under the International Maritime Solid Bulk Cargoes (IMSBC) Code. However, the Sub-Committee noted the information in the Bahamas document CCC 2/5/16 that loss of the vessel may have been caused by liquefaction of the cargo. The Sub-Committee also considered proposals made by Australia and co-sponsors with respect to the properties of bauxite and the need for the cargoes material properties to be further examined in order to ensure that the cargo can be carried safely.

3 Pending the outcome of ongoing research, the Sub-Committee concluded that:

.1 there is a need to raise awareness, despite the efforts to date made by the Member clubs of the International Group of P&I Clubs, of the possible dangers of liquefaction associated with carriage of bauxite;

.2 the potential for bauxite to liquefy is not specifically addressed in the IMSBC Code, since it is only classified as Group C cargo;

.3 if a Group A cargo is shipped with moisture content in excess of its transportable moisture limit (TML) there is a risk of cargo shift, which may result in capsizing;

.4 the master should not accept this cargo for loading unless:

.1 the moisture content of the cargo indicated in the certificate is less than the indicative moisture limit of 10% and the particle size distribution as is detailed in the individual schedule for BAUXITE in the IMSBC Code; or

.2 the cargo is declared as Group A and the shipper declares the TML and moisture content in accordance with paragraph 4.3.1 of the IMSBC Code; or

.3 the competent authority has assessed the cargo and determines that the particular cargo does not present Group A properties. Such assessments shall be provided by the shipper to the master as required by paragraph 1.2.1 of the IMSBC Code;

.5 if the master has reason to doubt that the cargo being loaded is consistent with the shipper's declaration then the master should stop loading and have the shipper verify the properties of the cargo[1]. If necessary, advice should be sought from the competent authority of the country of loading; and

.6 if the cargo is declared as Group A, the master should refer to section 7 of the IMSBC Code, which warns about cargoes that may liquefy.

4 The International Maritime Organization is taking action to investigate the hazards and risks associated with the carriage of bauxite and, upon finalizing that investigation, would consider any necessary amendments to the IMSBC Code[2].

5 Member Governments are invited to bring the above information to the attention of shippers, terminal operators, shipowners, ship operators, charterers, shipmasters and all other entities concerned, requesting that extreme care and appropriate action be taken, taking into account the provisions of relevant IMO instruments when handling and carrying bauxite in bulk.

---

1 Refer to regulation 2 of chapter VI of SOLAS 1974, as amended.

2 The CCC Sub-Committee has established a correspondence group (CG) and Member Governments and international organizations are invited to submit relevant information regarding the safe handling and carriage of this cargo, at their earliest convenience, to the Organization. The outcome of the CG will be considered by the Sub-Committee at its third session in September 2016.