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## **SOLID BULK CARGOES - Guidelines for developing and approving procedures for sampling, testing and controlling the moisture content for solid bulk cargoes which may liquefy - MSC.1/Circ.1454**

**Notice to all ship owners, ship operators, terminal operators, port authorities, classification societies, agents, charterers, shippers, consignors, masters and all other parties involved in the transport of solid bulk cargoes by sea.**

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### **Summary**

Liquefaction of fine particle cargoes, resulting in cargo movement and loss of stability has been associated with the loss of life in numerous, recent marine casualties. The purpose of this Marine Guidance Note is to advise of guidelines prepared by the International Maritime Organization (IMO) on the preparation, approval and implementation of procedures for sampling, testing and controlling moisture content for solid bulk cargoes which may liquefy.

The main objective of the Guidelines is to ensure safe transport of such cargoes and to complement the provisions of the International Maritime Solid Bulk Cargoes (IMSBC) Code by:

- assisting shippers in preparing procedures for sampling, testing and controlling moisture content as required by paragraph 4.3.3 of the IMSBC Code; and
- assisting competent authorities of ports of loading when approving and checking the implementation of such procedures in accordance with paragraph 4.3.3 of the IMSBC Code.

## **1. Introduction/ Background**

- 1.1 The International Maritime Solid Bulk Cargoes (IMSBC) Code establishes international provisions for the safe loading, trimming, carriage and discharge of solid bulk cargoes when transported by sea, ensuring compliance with the provisions of the SOLAS Convention and identifies the risks associated with such cargoes with the aim of taking measures to minimize and to control them.



- 1.2 In a dry, granular, cargo the individual particles are in contact with each other such that frictional forces prevent them sliding over one another. However, if there is enough moisture present then there is the potential for the cargo to behave like a liquid. This is because settling of the cargo occurs under the influences of vibration, over stowage and the motion of the ship. As such, the spaces between the particles reduce in size with an accompanying increase in water pressure between the particles. This results in a reduction in friction between the particles and can allow the cargo to shift suddenly.
- 1.3 This cargo movement can result in a loss of stability and over recent years, has been associated with the loss of life in numerous marine casualties. Such cargoes are identified as Group A cargoes in the IMSBC Code.

## **2. International Maritime Organization Guidelines**

- 2.1 The International Maritime Organization (IMO) has published guidelines on the preparation, approval and implementation of procedures for sampling, testing and controlling moisture content for solid bulk cargoes which may liquefy – See MSC.1/Circ.1454, attached.
- 2.2 The main objectives of the Guidelines are to ensure safe transport of such cargoes and to complement the provisions of the IMSBC Code by:
- assisting shippers in preparing procedures for sampling, testing and controlling moisture content as required by paragraph 4.3.3 of the IMSBC Code; and
  - assisting competent authorities of ports of loading when approving and checking the implementation of such procedures in accordance with paragraph 4.3.3 of the IMSBC Code.
- 2.3 Liquefaction may occur when the moisture content of the cargo exceeds the Transportable Moisture Limit (TML). Therefore, except for specially constructed or fitted cargo ships as described in subsection 7.3.2 of the IMSBC Code, it is particularly important to ensure that the moisture content is less than the TML of the cargo and to control its moisture content until it is on board the ship.
- 2.4 For this purpose, it is required by the IMSBC Code to determine by a test the acceptability of consignments for safe shipment. Considering that the determination of the acceptability is fundamental to avoid liquefaction during transport, the shipper should establish procedures for sampling, testing and controlling moisture content. These procedures should be approved and their implementation checked by the competent authority of the port of loading.
- 2.5 Sections 2, 3 and 4 of the Circular contain guidance to develop such procedures for sampling, testing and the control of moisture content respectively.

## **3 Implementation**

- 3.1 Mandatory entry into force date of these guidelines is 1 January 2015. Operators are advised to implement these guidelines as soon as possible after 1 January 2014 on a voluntary basis.



## **More Information**

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