



MARITIME AND PORT AUTHORITY OF SINGAPORE
SHIPPING CIRCULAR
NO. 19 OF 2017

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02 Nov 2017

Applicable to: Shipowners, shipmanagers, operators, agents and masters of Singapore-registered ships

CARRIAGE OF AMMONIUM NITRATE BASED FERTILIZER (non-hazardous)

This circular brings to the attention of the shipping community on the safety precautions about the carriage of ammonium nitrate based fertilizer (non-hazardous) with regard to the recent accidents involving the carriage of ammonium nitrate based fertilizer (non-hazardous) which is classified as Group C cargo under the IMSBC Code.

2. The measures listed in the individual schedule for ammonium nitrate based fertilizer (non-hazardous) in Appendix 1 of the current IMSBC Code should be applied carefully even though this cargo is classified as Group C cargo. Some fertilizers which have passed the prescribed tests have shown the potential to still undergo decomposition.
3. The shipping community involved in the carriage of ammonium nitrate based fertilizer (non-hazardous) is advised to take into consideration the guidance contained in document [CCC.1/Cir.4](#), taking into account the provisions of relevant IMO instruments, and to exercise care when handling and carrying such cargo.
4. Queries relating to this circular should be directed to Mr. Zong Xingdong (Tel: 6375 6212) or email: shipping@mpa.gov.sg.

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CCC.1/Circ.4
22 September 2017

CARRIAGE OF AMMONIUM NITRATE BASED FERTILIZER (non-hazardous)

1 The Sub-Committee on Carriage of Cargoes and Containers (CCC), at its fourth session (11 to 15 September 2017), considered matters related to the carriage of AMMONIUM NITRATE BASED FERTILIZER (non-hazardous).

2 AMMONIUM NITRATE BASED FERTILIZER (non-hazardous) is described as a Group C cargo in the International Maritime Solid Bulk Cargoes (IMSBC) Code. In this connection, the Sub-Committee noted the accidents involving the **MV Purple Beach** (2015) and **MV Cheshire** (2017) and the carriage of AMMONIUM NITRATE BASED FERTILIZER (non-hazardous). The Sub-Committee also noted that the accident investigation reports were pending and the need for further examination of the properties of this cargo was raised in order to ensure its safe carriage and to address awareness of the risks.

3 According to the Guidance for sea transport of AMMONIUM NITRATE BASED FERTILIZERS by the Organization Fertilizers Europe*, the safety principles for this cargo are as follows:

- .1 avoidance of storage of combustible substances near fertilizers;
- .2 avoidance of storage of incompatible substances near fertilizers;
- .3 avoidance of cross contamination with remains of previous cargoes;
- .4 avoidance of cross contamination of next cargo with fertilizer;
- .5 avoidance of sources of heat likely to affect the fertilizer; and
- .6 avoidance of application of heat (e.g. welding) to any section which may have trapped/confined fertilizer.

4 The measures listed in the individual schedule for AMMONIUM NITRATE BASED FERTILIZER (non-hazardous) in appendix 1 of the current IMSBC Code should be applied carefully even though it is classified as Group C. Some fertilizers which have passed the prescribed tests have shown the potential to still undergo decomposition.

* Refer to the Guidance available at:
http://fertilizerseurope.com/fileadmin/user_upload/publications/technical_publications/guidance_techn_documentation/Guidance_for_sea_transport_of_ammonium_nitrate_based_fertilizers_01.pdf

5 The gas clouds produced during the aforementioned accidents were large enough to envelop the ship, and cover the sea area surrounding the ship. The vapour emitted was highly toxic. Such conditions could affect the safe abandonment of the ship and hinder rescue and firefighting efforts. In such events, cargo decomposition may last for multiple days and the temperatures in cargo holds may reach in excess of 500°C.

6 The best protection for seafarers is awareness of the decomposition process to allow it to be identified at an early stage. Regular monitoring of the cargo throughout the voyage is crucial to detect beginning of decomposition.

7 When heated strongly, this cargo may decompose and release toxic gases. Timely opening of cargo hatches can prevent the build-up of pressure and help cool the cargo, impeding the development of cargo decomposition.

8 In case of decomposition or fire involving this cargo:

- .1 provide maximum ventilation to remove the gases resulting from decomposition. These gases may include toxic fumes of ammonia and oxides of nitrogen and sulphur;
- .2 wear, as necessary, protective clothing and self-contained breathing apparatus;
- .3 application of water is most effective where injection pipes are used to deliver water to hot spots. Water spraying may not be sufficient to control the decomposition;
- .4 flooding of the cargo space may be considered, giving due consideration to the ship's stability and structural strength; and
- .5 the ship's gas firefighting installation will be ineffective.

9 Member States 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 and the information above when handling and carrying AMMONIUM NITRATE BASED FERTILIZER (non-hazardous) in bulk.
