

## § 148.225

(1) When tested in accordance with the trough test prescribed in Appendix 2, Section 4, of the IMSBC Code or in the UN Manual of Tests and Criteria, Part III, Subsection 38.2 (incorporated by reference, see §148.8), it is found to be free from the risk of self-sustaining decomposition.

(2) [Reserved]

(c) No fertilizer covered by this section may be transported in bulk if, when tested in accordance with the trough test prescribed in Appendix 2, Section 4, of the IMSBC Code or in the UN Manual of Tests and Criteria, Part III, Subsection 38.2 (incorporated by reference, see §148.8), it has a self-sustaining decomposition rate that is greater than 0.25 meters per hour, or is liable to self-heat sufficient to initiate decomposition.

(d) Fertilizers covered by this section must be stowed away from all sources of heat, and out of direct contact with a metal engine compartment boundary.

(e) Bunkering or transferring of fuel may not be performed during loading and unloading of fertilizer covered by this section.

(f) Fertilizer covered by this section must be segregated as prescribed in §§148.140 and 148.220(d) of this part.

## § 148.225 Calcined pyrites (pyritic ash, fly ash).

(a) This part does not apply to the shipment of calcined pyrites that are the residual ash of oil or coal fired power stations.

(b) This section applies to the stowage and transportation of calcined pyrites that are the residual product of sulfuric acid production or elemental metal recovery operations.

(c) Before loading calcined pyrites covered by this section—

(1) The cargo space must be as clean and dry as practical;

(2) The calcined pyrites must be dry; and

(3) Precautions must be taken to prevent the penetration of calcined pyrites into other cargo spaces, bilges, wells, and ceiling boards.

(d) After calcined pyrites covered by this section have been unloaded from a cargo space, the cargo space must be thoroughly cleaned. Cargo residues and sweepings must be disposed of as pre-

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scribed in 33 CFR parts 151.55 through 151.77.

## § 148.227 Calcium nitrate fertilizers.

This part does not apply to commercial grades of calcium nitrate fertilizers consisting mainly of a double salt (calcium nitrate and ammonium nitrate) and containing a maximum of 15.5 percent nitrogen and at least 12 percent of water.

## § 148.230 Calcium oxide (lime, unslaked).

(a) When transported by barge, unslaked lime (calcium oxide) must be carried in an unmanned, all steel, double-hulled barge equipped with weathertight hatches or covers. The barge must not carry any other cargo while unslaked lime is on board.

(b) The shipping paper requirements in §148.60 of this part and the dangerous cargo manifest requirements in §148.70 of this part do not apply to the transportation of unslaked lime under paragraph (a) of this section.

## § 148.235 Castor beans.

(a) This part applies only to the stowage and transportation of whole castor beans. Castor meal, castor pomace, and castor flakes may not be shipped in bulk.

(b) Persons handling castor beans must wear dust masks and goggles.

(c) Care must be taken to prevent castor bean dust from entering accommodation, control, or service spaces during cargo transfer operations.

## § 148.240 Coal.

(a) The electrical equipment in cargo holds carrying coal must meet the requirements of Subpart 111.105 of this chapter or an equivalent standard approved by the administration of the vessel's flag state.

(b) Before coal is loaded in a cargo hold, the bilges must be as clean and dry as practical. The hold must also be free of any readily combustible material, including the residue of previous cargoes if other than coal.

(c) The master of each vessel carrying coal must ensure that—

(1) All openings to the cargo hold, except for unloading gates on self-unloading vessels, are sealed before loading

the coal and, unless the coal is as described in paragraph (f) of this section, the hatches must also be sealed after loading;

(2) As far as practical, gases emitted by the coal do not accumulate in enclosed working spaces such as storerooms, shops, or passageways, and tunnel spaces on self-unloading vessels, and that such spaces are adequately ventilated;

(3) The vessel has adequate ventilation as required by paragraph (f) of this section; and

(4) If the temperature of the coal is to be monitored under paragraph (e)(2)(i) of this section, the vessel has instruments that are capable of measuring the temperature of the cargo in the range 0°–100 °C (32 °–212 °F) without entry into the cargo hold.

(d) A cargo hold containing coal must not be ventilated unless the conditions of paragraph (f) of this section are met, or unless methane is detected under paragraph (h) of this section.

(e) If coal waiting to be loaded has shown a tendency to self-heat, has been handled so that it may likely self-heat, or has been observed to be heating, the master is responsible for monitoring the temperature of the coal at several intervals during these times:

- (1) Before loading; and
- (2) During the voyage, by—

(i) Measuring the temperature of the coal;

(ii) Measuring the emission of carbon monoxide; or

(iii) Both.

(f) If coal waiting to be loaded has a potential to emit dangerous amounts of methane, for example it is freshly mined, or has a history of emitting dangerous amounts of methane, then:

(1) Surface ventilation, either natural or from fixed or portable non-sparking fans, must be provided; and

(2) The atmosphere above the coal must be monitored for the presence of methane as prescribed in paragraph (h) of this section. The results of this monitoring must be recorded at least twice in every 24-hour period, unless the conditions of paragraph (m) of this section are met.

(g) Electrical equipment and cables in a hold containing a coal described in paragraph (f) of this section must be ei-

ther suitable for use in an explosive gas atmosphere or de-energized at a point outside the hold. Electrical equipment and cables necessary for continuous safe operations, such as lighting fixtures, must be suitable for use in an explosive gas atmosphere. The master of the vessel must ensure that the affected equipment and cables remain de-energized as long as this coal remains in the hold.

(h) For all coal loaded on a vessel, other than an unmanned barge, the atmosphere above the coal must be routinely tested for the presence of methane, carbon monoxide, and oxygen, following the procedures in the Appendices to the schedules for Coal and Brown Coal Briquettes as contained in the IMSBC Code (incorporated by reference, see §148.8). This testing must be performed in such a way that the cargo hatches are not opened and entry into the hold is not necessary.

(i) When carrying a coal described in paragraph (e) of this section, the atmosphere above the coal must be monitored for the presence of carbon monoxide as prescribed in paragraph (h) of this section. The results of this monitoring must be recorded at least twice in every 24-hour period, unless the conditions of paragraph (m) of this section are met. If the level of carbon monoxide is increasing rapidly or reaches 20 percent of the lower flammability limit (LFL), the frequency of monitoring must be increased.

(j) When a cargo of coal has a potential to self-heat or has been observed to be heating, the hatches should be closed and sealed and all surface ventilation halted except as necessary to remove any methane that may have accumulated.

(k) If the level of carbon monoxide monitored under paragraph (i) of this section continues to increase rapidly or the temperature of coal carried on board a vessel exceeds 55 °C (131 °F) and is increasing rapidly, the master must notify the nearest Coast Guard Captain of the Port of—

(1) The name, nationality, and position of the vessel;

(2) The most recent temperature, if measured, and levels of carbon monoxide and methane;

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(3) The port where the coal was loaded and the destination of the coal;

(4) The last port of call of the vessel and its next port of call; and

(5) What action has been taken.

(l) If the level of methane as monitored under paragraph (h) of this section reaches 20 percent of the LFL or is increasing rapidly, ventilation of the cargo hold, under paragraph (f) of this section, must be initiated. If this ventilation is provided by opening the cargo hatches, care must be taken to avoid generating sparks.

(m) The frequency of monitoring required by paragraph (f) of this section may be reduced at the discretion of the master provided that—

(1) The level of gas measured is less than 20 percent of the LFL;

(2) The level of gas measured has remained steady or decreased over three consecutive readings, or has increased by less than 5 percent over four consecutive readings spanning at least 48 hours; and

(3) Monitoring continues at intervals sufficient to determine that the level of gas remains within the parameters of paragraphs (m)(1) and (m)(2) of this section.

**§ 148.242 Copra.**

Copra must have surface ventilation. It must not be stowed against heated surfaces including fuel oil tanks which may require heating.

**§ 148.245 Direct reduced iron (DRI); lumps, pellets, and cold-molded briquettes.**

(a) Before loading DRI lumps, pellets, or cold-molded briquettes—

(1) The master must have a written certification from a competent person appointed by the shipper and recognized by the Commandant (CG-ENG-5) stating that the DRI, at the time of loading, is suitable for shipment;

(2) The DRI must be aged for at least 3 days, or be treated with an air passivation technique or some other equivalent method that reduces its reactivity to at least the same level as the aged DRI; and

(3) Each hold and bilge must be as clean and dry as practical. Other than double bottom tanks, adjacent ballast tanks must be kept empty when pos-

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sible. All wooden fixtures, such as battens, must be removed from the hold.

(b) Each boundary of a hold where DRI lumps, pellets, or cold-molded briquettes are to be carried must be resistant to fire and passage of water.

(c) DRI lumps, pellets, or cold-molded briquettes that are wet, or that are known to have been wetted, may not be accepted for transport. The moisture content of the DRI must not exceed 0.3 percent prior to loading.

(d) DRI lumps, pellets and cold-molded briquettes must be protected at all times from contact with water, and must not be loaded or transferred from one vessel to another during periods of rain or snow.

(e) DRI lumps, pellets, or cold-molded briquettes may not be loaded if their temperature is greater than 65 °C (150 °F).

(f) The shipper of DRI lumps, pellets, or cold-molded briquettes in bulk must ensure that an inert atmosphere of less than 5 percent oxygen and 1 percent hydrogen, by volume, is maintained throughout the voyage in any hold containing these materials.

(g) When DRI lumps, pellets, or cold-molded briquettes are loaded, precautions must be taken to avoid the concentration of fines (pieces less than 6.35mm in size) in any one location in the cargo hold.

(h) Radar and RDF scanners must be protected against the dust generated during cargo transfer operations of DRI lumps, pellets, or cold-molded briquettes.

**§ 148.250 Direct reduced iron (DRI); hot-molded briquettes.**

(a) Before loading DRI hot-molded briquettes—

(1) The master must have a written certification from a competent person appointed by the shipper and recognized by the Commandant (CG-ENG-5) that at the time of loading the DRI hot-molded briquettes are suitable for shipment; and

(2) Each hold and bilge must be as clean and dry as practical. Except double bottom tanks, adjacent ballast tanks must be kept empty where possible. All wooden fixtures, such as battens, must be removed.