

must not be introduced until fire is apparent, to avoid the possibility of igniting the solvent vapors by the generation of static electricity.

(i) Seed cake must be carried under the terms of a Special Permit issued by the Commandant (CG-5223) per subpart B of this part if—

(1) The oil was mechanically expelled; and

(2) It contains more than 10 percent vegetable oil or more than 20 percent vegetable oil and moisture combined.

§ 148.315 Sulfur.

(a) This part applies to lump or coarse grain powder sulfur only. Fine-grained powder (“flowers of sulfur”) may not be transported in bulk.

(b) After the loading or unloading of lump or coarse grain powder sulfur has been completed, sulfur dust must be removed from the vessel’s decks, bulkheads, and overheads. Cargo residues and deck sweepings must be disposed of pursuant to 33 CFR 151.55 through 151.77.

(c) A cargo space that contains sulfur or the residue of a sulfur cargo must be adequately ventilated, preferably by mechanical means. Each ventilator intake must be fitted with a spark-arresting screen.

§ 148.320 Tankage; garbage tankage; rough ammonia tankage; or tankage fertilizer.

(a) This part applies to rough ammonia tankage in bulk that contains 7 percent or more moisture by weight, and garbage tankage and tankage fertilizer that contains 8 percent or more moisture by weight.

(b) Tankage to which this part applies may not be loaded in bulk if its temperature exceeds 38 °C (100 °F).

(c) During the voyage, the temperature of the tankage must be monitored often enough to detect spontaneous heating.

§ 148.325 Wood chips; wood pellets; wood pulp pellets.

(a) This part applies to wood chips and wood pulp pellets in bulk that may oxidize, leading to depletion of oxygen and an increase in carbon dioxide in the cargo hold.

(b) No person may enter a cargo hold containing wood chips, wood pellets, or wood pulp pellets, unless—

(1) The atmosphere in the cargo hold has been tested and contains enough oxygen to support life; or

(2) The person entering the cargo hold is wearing the appropriate self-contained breathing apparatus.

§ 148.330 Zinc ashes; zinc dross; zinc residues; zinc skimmings.

(a) The shipper must inform the cognizant Coast Guard Captain of the Port in advance of any cargo transfer operations involving zinc ashes, zinc dross, zinc residues, or zinc skimmings (collectively, “zinc material”) in bulk.

(b) Zinc material must be aged by exposure to the elements for at least one year before shipment in bulk.

(c) Before loading in bulk, zinc material must be stored under cover for a period of time to ensure that it is as dry as practical. No zinc material that is wet may be accepted for shipment.

(d) Zinc material may not be loaded in bulk if its temperature is greater than 11.1 °C (52 °F) in excess of the ambient temperature.

(e) Paragraphs (e)(1) through (e)(5) of this section apply only when zinc materials are carried by a cargo vessel:

(1) Zinc material in bulk must be stowed in a mechanically ventilated hold that—

(i) Is designed for at least one complete air change every 30 minutes based on the empty hold;

(ii) Has explosion-proof motors approved for use in Class I, Division 1, Group B atmospheres or equivalent motors approved by the vessel’s flag state administration for use in hydrogen atmospheres; and

(iii) Has nonsparking fans.

(2) Combustible gas detectors capable of measuring hydrogen concentrations of 0 to 4.1 percent by volume must be permanently installed in holds that will carry zinc material. If the concentration of hydrogen in the space above the cargo exceeds 1 percent by volume, the ventilation system must be run until the concentration drops below 1 percent by volume.

(3) Thermocouples must be installed approximately 6 inches below the surface of the zinc material or in the space

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immediately above the zinc material. If an increase in temperature is detected, the mechanical ventilation system required by paragraph (d) of this section must be used until the temperature of the zinc material is below 55 °C (131 °F).

(4) Except as provided in paragraph (e)(5) of this section, the cargo hatches of holds containing zinc material must remain sealed to prevent the entry of seawater.

(5) If the concentration of hydrogen is near 4.1 percent by volume and increasing, despite ventilation, or the temperature of the zinc material reaches 65 °C (150 °F), the cargo hatches should be opened provided that weather and sea conditions are favorable. When hatches are opened take care to prevent sparks and minimize the entry of water.

Subpart F—Additional Special Requirements

§ 148.400 Applicability.

Unless stated otherwise, the requirements of this subpart apply only to the shipment or loading of materials, listed in Table 148.10 of this part, for which Table 148.10 contains a reference to a section or paragraph of this subpart.

§ 148.405 Sources of ignition.

(a) Except in an emergency, no welding, burning, cutting, chipping, or other operations involving the use of fire, open flame, sparks, or arc-producing equipment, may be performed in a cargo hold containing a Table 148.10 material or in an adjacent space.

(b) A cargo hold or adjacent space must not have any flammable gas concentrations over 10 percent of the LFL before the master may approve operations involving the use of fire, open flame, or spark- or arc-producing equipment in that hold or adjacent space.

§ 148.407 Smoking.

When Table 148.10 of this part associates a material with a reference to this section, and that material is being loaded or unloaded, smoking is prohibited anywhere on the weatherdeck of the vessel. While such a material is on board the vessel, smoking is prohibited

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in spaces adjacent to the cargo hold and on the vessel's deck in the vicinity of cargo hatches, ventilator outlets, and other accesses to the hold containing the material. "NO SMOKING" signs must be displayed in conspicuous locations in the areas where smoking is prohibited.

§ 148.410 Fire hoses.

When Table 148.10 of this part associates a material with a reference to this section, a fire hose must be available at each hatch through which the material is being loaded.

§ 148.415 Toxic gas analyzers.

When Table 148.10 of this part associates a material with a reference to a paragraph in this section, each vessel transporting the material, other than an unmanned barge, must have on board a gas analyzer appropriate for the toxic gas listed in that paragraph. At least two members of the crew must be knowledgeable in the use of the equipment. The equipment must be maintained in a condition ready for use and calibrated according to the instructions of its manufacturer. The atmosphere in the cargo hold and adjacent spaces must be tested before a person is allowed to enter these spaces. If toxic gases are detected, the space must be ventilated and retested before entry. The toxic gases for which the requirements of this section must be met are:

- (a) Arsine;
- (b) Carbon monoxide;
- (c) Hydrogen cyanide;
- (d) Hydrogen sulfide;
- (e) Phosphine; and
- (f) Sulfur dioxide.

§ 148.420 Flammable gas analyzers.

When Table 148.10 of this part associates a material with a reference to a paragraph in this section, each vessel transporting the material, other than an unmanned barge, must have on board a gas analyzer appropriate for the flammable gas listed in that paragraph. At least two members of the crew must be knowledgeable in the use of the equipment. The equipment must be maintained in a condition ready for use, capable of measuring 0 to 100 percent LFL for the gas indicated, and