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every liquid and vapor connection, except the safety relief valve;

(12) Have no bypass opening on any excess flow valve.

(e) Cargo transfer operations:

(1) May not be conducted with more than one cargo tank at a time unles each tank is filled from or discharged to shore tanks through separate lines;

(2) Must be conducted with connections between fixed barge piping and shore piping of either Schedule 40 pipe having flexible metallic joints that meet §151.04–5(h) or of flexible metallic hose that is acceptable to the Commandant (G–MSO);

(3) From barge to shore must be by pressurization with an oil free, non-reactive gas that has a maximum of 100 ppm moisture;

(4) Must be conducted with vapor return to shore connections that ensure that all vapor is returned to shore; and

(5) Must be conducted with every person on the barge carrying a respiratory protective device that protects the wearer against sulfur dioxide vapors and provides respiratory protection for emergency escape from a contaminated area that results from cargo leakage.

(f) Respiratory protective equipment must be of a size and weight that allows unrestricted movement and wearing of a lifesaving device.

(g) After the completion of cargo transfer, all liquid sulfur dioxide in the cargo piping must be removed and cargo transfer piping must be disconnected at the cargo tanks. After the cargo piping is disconnected, both ends of the line must be plugged or fitted with blind flanges.

[CGD 80–001, 46 FR 63280, Dec. 31, 1981, as amended by CGD 82–063b, 48 FR 4781, Feb. 3, 1983; CGD 88–100, 54 FR 40041, Sept. 29, 1989; 55 FR 17276, Apr. 24, 1990]

§151.50–86 Alkyl (C7–C9) nitrates.

(a) The carriage temperature of octyl nitrates must be maintained below 100°C (212°F) in order to prevent the occurrence of a self-sustaining exothermic decomposition reaction.

(b) Octyl nitrates may not be carried in a deck tank unless the tank has a combination of insulation and a water deluge system sufficient to maintain the tank's cargo temperature below 100°C (212°F) and the cargo temperature rise at or below 1.5°C (2.7°F)/hour, for a fire of 650°C (1200°F).

[CGD 88–100, 54 FR 40040, Sept. 29, 1989; CGD 92–100, 59 FR 17028, Apr. 11, 1994]

Subpart 151.55—Special Requirements for Materials of Construction

§151.55–1 General.

(a) This section provides special requirements for the materials of construction of equipment that may come into contact with various cargoes. Table 151.05 contains specific requirements for various cargoes.

(b) Copper, copper alloys, zinc, and aluminum shall not be used as materials of construction for tanks, pipelines, valves, fittings, and other items of equipment that may come in contact with the cargo liquid or vapor. (Equivalent to §151.56–1(a),(b), and (c).)

(c) Copper, copper alloys, zinc, galvanized steel, and mercury shall not be used as materials of construction for tanks, pipelines, valves, fittings, and other items of equipment that may come in contact with the cargo liquid or vapor. (Equivalent to §151.56–1(b),(c), and (g).)

(d) Aluminum, magnesium, zinc, and lithium shall not be used as materials of construction for tanks, pipelines, valves, fittings, and other items of equipment that may come in contact with the cargo liquid or vapor. (Equivalent to §151.56–1(a),(c), and (d).)

(e) Copper and copper bearing alloys shall not be used as materials of construction for tanks, pipelines, valves, fittings, and other items of equipment that may come in contact with the cargo liquid or vapor. (Equivalent to §151.56–1(b).)

(f) Aluminum or copper or alloys of either shall not be used as materials of construction for tanks, pipelines, valves, fittings, and other items of equipment that may come in contact with the cargo vapor or liquid. (Equivalent to §151.56–1(a) and (b).)

(g) Aluminum, stainless steel, or steel covered with a suitable protective lining or coating shall be used as materials of construction for tanks, pipelines, valves fittings, and other items of equipment that may come in contact

with the cargo liquid or vapor. (Equivalent to § 151.58–1(a).)

(h) Alkaline or acidic materials, such as caustic soda or sulfuric acid, should not be allowed to contaminate this cargo.

(i) For concentrations of 98 percent or greater, aluminum or stainless steel shall be used as materials of construction. For concentrations of less than 98 percent, 304L or 316 stainless steel shall be used as materials of construction.

(j) Zinc, alloys that have more than 10 percent zinc by weight, and aluminum may not be used as materials of construction for tanks, pipelines, valves, fittings, and other items of equipment that may come in contact with cargo liquid or vapor. (Equivalent to § 151.56–1(a) and (c).)

[CGFR 70–10, 35 FR 3714, Feb. 25, 1970, as amended by CGD 73–275R, 41 FR 3087, Jan. 21, 1976; CGD 75–223, 42 FR 8378, Feb. 10, 1977; CGD 88–100, 54 FR 40041, Sept. 29, 1989]

Subpart 151.56—Prohibited Materials of Construction

§ 151.56–1 Prohibited materials.

When one of the following paragraphs of this section is referenced in table 151.05, the materials listed in that paragraph may not be used in components that contact the cargo or its vapor:

(a) Aluminum or aluminum alloys.

(b) Copper or copper alloys.

(c) Zinc, galvanized steel, or alloys having more than 10 percent zinc by weight.

(d) Magnesium.

(e) Lead.

(f) Silver or silver alloys.

(g) Mercury.

[CGD 88–100, 54 FR 40041, Sept. 29, 1989]

Subpart 151.58—Required Materials of Construction

§ 151.58–1 Required materials.

When one of the following paragraphs of this section is referenced in table 151.05, only those materials listed in that paragraph may be used in components that contact the cargo or its vapor:

(a) Aluminum, stainless steel, or steel covered with a protective lining or coating. (See § 151.15–3(f)(2).)

(b)–(c) [Reserved]

(d) Solid austenitic stainless steel.

(e) Stainless steel or steel covered with a suitable protective lining or coating. (See § 151.15–3(f)(2).)

[CGD 88–100, 54 FR 40041, Sept. 29, 1989]

PART 152 [RESERVED]

PART 153—SHIPS CARRYING BULK LIQUID, LIQUEFIED GAS, OR COMPRESSED GAS HAZARDOUS MATERIALS

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