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hydrostatically to 1½ times the maximum allowable pressure as determined by the safety relief valve setting.

(q) During each internal inspection, each cargo tank excess flow valve and safety relief valve must be inspected and tested in accordance with paragraphs (g) and (i) of §151.04–5 of this chapter.

(r) When periodic inspection indicates that a cargo tank has deteriorated in service, the maximum allowable pressure shall be recalculated, using the minimum thickness found by actual measurement. The recalculated maximum allowable pressure shall be not less than 275 pounds per square inch gauge. If the recalculated maximum allowable pressure is less than 275 pounds per square inch gauge, the cargo tanks shall be withdrawn from service.

(s) The following substances shall not be carried as stores on board barges transporting chlorine in bulk: hydrogen, methane, liquefied petroleum gases, coal gas, acetylene, ammonia, turpentine, compounds containing metallic powders, finely divided metals or finely divided organic materials.

(t) The requirements of §151.50–30 for compressed gases are also applicable to the shipment of chlorine.

[CGFR 70—10, 35 FR 3714, Feb. 25, 1970, as amended by CGD 85–061, 54 FR 50966, Dec. 11, 1989; CGD 85–061, 55 FR 41918, Oct. 16, 1990]

§151.50–32 Ammonia, anhydrous.

(a) The anhydrous ammonia tanks may be installed in the bulk liquid cargo tanks provided the liquid surrounding the enclosed anhydrous ammonia tanks complies with the following chemical and physical properties:

(1) Boiling point above 125°F. atmospheric pressure.

(2) Inert to ammonia at 100°F. at atmospheric pressure.

(3) Noncorrosive in the liquid and vapor phase to the ammonia tanks and piping.

(b) Copper, copper alloys, 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 anhydrous ammonia liquid or vapor.

(c) Valves, flanges and pipe fittings shall be of the tongue and groove or raised-face type, fitted with suitable gasket material. Welded fittings shall be used wherever possible and the number of pipe joints shall be held to a minimum. Threaded joints are not permitted for pipe diameters exceeding 2 inches. Brazed joints are prohibited.

(d) All enclosed spaces containing cargo tanks fitted with bottom outlet connections shall be provided with mechanical ventilation of sufficient capacity to assure a change of air every 3 minutes.

(e) Each cargo tank shall be electrically grounded to the hull.

(f) When transferring cargo, a hose shall be connected to a water supply so that if leakage of anhydrous ammonia occurs the vapor may be dispersed by the use of water fog. This requirement can be met by facilities provided from shore.

(g) During cargo transfer operations, every person on the vessel shall carry on his person or have close at hand at all times a canister mask approved for ammonia or each person shall carry on his person a respiratory protective device which will protect the wearer against ammonia vapors and will provide respiratory protection for emergency escape from a contaminated area resulting from cargo leakage. This respiratory protective equipment shall be of such size and weight that the person wearing it will not be restricted in movement or in the wearing of a lifesaving device.

(h) [Reserved]

(i) The requirements of §151.50–30 for compressed gases are also applicable to the shipment of anhydrous ammonia.

[CGFR 70—10, 35 FR 3714, Feb. 25, 1970, as amended by CGD 85–061, 54 FR 50966, Dec. 11, 1989]

§151.50–34 Vinyl chloride (vinyl chloride monomer).

(a) Copper, aluminum, magnesium, mercury, silver, and their 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 vinyl chloride liquid or vapor.

(b) Valves, flanges, and pipe fittings shall be of the tongue and groove or

raised-face type, fitted with suitable gasket material. Welded fittings shall be used wherever possible and the number of pipe joints shall be held to a minimum. Threaded joints are not permitted for pipe diameters exceeding 2 inches. Brazed joints are prohibited.

(c) Each cargo tank shall be electrically grounded to the hull.

(d) The vessel shall be electrically bonded to the shore piping prior to connecting the cargo hose. This electrical bonding shall be maintained until after the cargo hose has been disconnected and any spillage has been removed.

(e) To the extent he deems it necessary, the Officer in Charge, Marine Inspection, may require that sufficient insulation shall be removed from insulated tanks at least once in each 8 calendar years to permit spot external examination of the tanks and insulation in accordance with §151.04–5(c).

(f) The requirements of §151.50–30 for compressed gases are also applicable to the shipment of vinyl chloride.

(g) The person in charge of cargo transfer shall ensure that:

(1) Cargo vapors are returned to the cargo tank or shore disposition for reclamation or destruction during cargo transfer operations;

(2) Continuous monitoring for vinyl chloride vapor leaks is conducted aboard a tank barge undergoing vinyl chloride transfer operations. Fixed or portable instrumentation may be utilized to ensure that personnel are not exposed to vinyl chloride vapor concentrations in excess of 1 ppm averaged over any eight hour period of 5 ppm averaged over any period not exceeding 15 minutes. The method of monitoring and measurement shall have an accuracy (with a confidence level of 95 percent) of not less than plus or minus 50 percent from 0.25 through 0.5 ppm, plus or minus 35 percent from over 0.5 ppm through 1.0 ppm, and plus or minus 25 percent over 1.0 ppm;

(3) Cargo transfer operation is discontinued or corrective action is initiated by the person in charge to minimize exposure to personnel whenever a vinyl chloride vapor concentration in excess of 1 ppm is detected. If the vinyl chloride vapor concentration exceeds 5 ppm for over 15 minutes, action to reduce the leak can be continued only if the respiratory protection requirements of 29 CFR 1910.1017 are met by all personnel in the area of the leak;

(4) Those portions of cargo lines which will be open to the atmosphere after piping is disconnected are free of vinyl chloride liquid and that the vinyl chloride vapor concentration in the area of the cargo piping disconnect points is not greater than 5 ppm;

(5) Any restricted gauge fitted on a tank containing vinyl chloride is effectively out of service by locking or sealing the device so that it cannot be used; and

(6) A restricted gauge is not to be used as a ''check'' on the required closed gauge, nor as a means or sampling.

(h) The words ''CANCER—SUSPECT AGENT'' must be added to the warning signs required by 46 CFR 151.45–2(e).

(i) Signs bearing the legend:

CANCER—SUSPECT AGENT IN THIS AREA

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must be posted whenever hazardous operations, such as tank cleaning, are in progress.

(j) A tank barge undergoing cargo transfer operations must be designated a ''regulated area'' having access limited to authorized persons and requiring a daily roster of authorized persons who may board the barge.

(k) Employees engaged in hazardous operations, such as tank cleaning, must be provided, and be required to wear and use respiratory protection in accordance with the provisions of 29 CFR 1910.1017 and protective garments, provided clean and dry for each use, to prevent skin contact with liquid vinyl chloride.

[CGFR 70–10, 35 FR 3714, Feb. 25, 1970, as amended by CGD 74–167R, 40 FR 17026, Apr. 16, 1975; CGD 88–100, 54 FR 40040, Sept. 29, 1989]

§151.50–36 Argon or nitrogen.

(a) A cargo tank that contains argon or nitrogen and that has a maximum allowable working pressure of 172 kPa (25 psig) or greater must have one of the following arrangements: