

(i) Piping with a diameter of 2 inches or more must conform to ASTM A 53 Schedule 40 or ASTM A106 Schedule 40 (IBR, see §171.7 of this subchapter).

(ii) Piping with a diameter of less than 2 inches must conform to ASTM A 53 Schedule 80 or ASTM A 106 Schedule 80 (IBR, see §171.7 of this subchapter).

(iii) The words “Inhalation Hazard” must be marked as required in special provision 13 in §172.102 of this subchapter and, when practicable, within 24 inches of the placard.

(b) *Refrigeration systems placed into service prior to June 1, 1991.* (1) For refrigeration systems placed into service prior to June 1, 1991, each pressure vessel and associated piping for the condensing line (“high side”) must be rated at an MAWP of not less than 250 psig. Each pressure vessel and associated piping for the evaporating line (“low side”) must be rated at an MAWP of not less than 150 psig, except that each pressure vessel or associated piping that will contain refrigerant gas during transportation must be rated at an MAWP of not less than 250 psig. During transportation, pressure in the components that are part of the evaporating line may not exceed 150 psig.

(2) Each pressure vessel and associated piping that is part of the evaporating line must be marked “LOW SIDE” in a permanent and clearly visible manner. The evaporating line must have a pressure gauge with corresponding temperature markings mounted so as to be easily readable when standing on the ground. The gauge must be permanently marked or tagged “SATURATION GAUGE”.

(3) Each pressure vessel and associated piping with an MAWP of 250 psig or greater containing liquid anhydrous ammonia must be isolated using appropriate means from piping and components marked “LOW SIDE”.

(4) Liquid lading is only authorized in system components with a rated MAWP of not less than 250 psig.

(5) Prior to transportation, each pressure vessel and associated piping with a rated MAWP of less than 250 psig must be relieved of enough gaseous lading to ensure that the MAWP is not exceeded at transport temperatures up to 54 °C (130 °F).

(6) Refrigeration systems placed into service prior to June 1, 1991, may continue in service until October 1, 2017.

(c) Prior to transportation over public highways, each pressure vessel and associated piping must be drained of refrigerant gas or liquid anhydrous ammonia to the extent practicable. Drained contents must be recovered in conformance with all applicable environmental regulations. Residual liquid anhydrous ammonia in each component may not exceed one percent of the component's total volumetric capacity or 10 gallons, whichever is less.

(d) *System inspection and testing.* (1) Each refrigeration system authorized under this section must be visually inspected every year. The visual inspection must include items listed in §180.407(d)(2) of this subchapter applicable to refrigeration systems. A certificate of the annual visual inspection must be dated and signed by the person performing the inspection and must contain that person's company affiliation. The certificate must remain at the equipment owner's office.

(2) Each refrigeration system authorized under this section must be proof pressure tested every two years beginning with the initial pressure test performed after manufacture. Additional pressure tests must be performed after any modification, repair or damage to a part of the system pressurized with refrigerant gas. System test pressures may not be less than one-and-one-half (1.50) times the rated MAWP of the system component or piping.

(3) Pressure relief valves must be successfully tested every two years at the MAWP for the components or piping to which they are attached. Pressure relief valves may be replaced and marked every 5 years with valves certified at the appropriate MAWP, in which case the valves need not be tested every two years. Valves that do not pass the test must be repaired or replaced.

(e) *Test markings and reports.* (1) Evidence of testing specified in paragraph (d) of this section must be marked on the right forward side of the refrigeration system with 2 inch high letters indicating type of last test (V = visual; P = pressure: hydrostatic or pneumatic) and the month/year in which it was performed. Reports and all of the requirements for records of inspections including markings must be completed as specified in part 180.

(2) Pressure relief valves must be durably marked with either the date of last test, set-pressure and testing company or the date of last replacement, set-pressure, and certifying company, as applicable.

[74 FR 16142, Apr. 9, 2009]

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§173.6 Materials of trade exceptions.

When transported by motor vehicle in conformance with this section, a material of trade (see §171.8 of this subchapter) is not subject to any other requirements of this subchapter besides those set forth or referenced in this section.

(a) *Materials and amounts.* A material of trade is limited to the following:

(1) A Class 3, 8, 9, Division 4.1, 5.1, 5.2, 6.1, or ORM-D material contained in a packaging having a gross mass or capacity not over—

(i) 0.5 kg (1 pound) or 0.5 L (1 pint) for a Packing Group I material;

(ii) 30 kg (66 pounds) or 30 L (8 gallons) for a Packing Group II, Packing Group III, or ORM-D material;

(iii) 1500 L (400 gallons) for a diluted mixture, not to exceed 2 percent concentration, of a Class 9 material.

(2) A Division 2.1 or 2.2 material in a cylinder with a gross weight not over 100 kg (220 pounds), in a Dewar flask meeting the requirements of §173.320, or a permanently mounted tank manufactured to the ASME Code of not more than 70 gallon water capacity for a non-liquefied Division 2.2 material with no subsidiary hazard.

(3) A Division 4.3 material in Packing Group II or III contained in a packaging having a gross capacity not exceeding 30 mL (1 ounce).

(4) A Division 6.2 material, other than a Category A infectious substance, contained in human or animal samples (including, but not limited to, secreta, excreta, blood and its components, tissue and tissue fluids, and body parts) being transported for research, diagnosis, investigational activities, or disease treatment or prevention, or is a biological product or regulated medical waste. The material must be contained in a combination packaging. For liquids, the inner packaging must be leakproof, and the outer packaging must contain sufficient absorbent material to absorb the entire contents of the inner packaging. For sharps, the inner packaging (sharps container) must be constructed of a rigid material resistant to punctures and securely closed to prevent leaks or punctures, and the outer packaging must be securely closed to prevent leaks or punctures. For solids, liquids, and sharps, the outer packaging must be a strong, tight packaging securely closed and secured against shifting, including relative motion between packages, within the vehicle on which it is being transported.

(i) For other than a regulated medical waste, the amount of Division 6.2 material in a combination packaging must conform to the following limitations:

(A) One or more inner packagings, each of which may not contain more than 0.5 kg (1.1 lbs) or 0.5 L (17 ounces), and an outer packaging containing not more than 4 kg (8.8 lbs) or 4 L (1 gallon); or

(B) A single inner packaging containing not more than 16 kg (35.2 lbs) or 16 L (4.2 gallons) in a single outer packaging.

(ii) For a regulated medical waste, a combination packaging must consist of one or more inner packagings, each of which may not contain more than 4 kg (8.8 lbs) or 4 L (1 gallon), and an outer packaging containing not more than 16 kg (35.2 lbs) or 16 L (4.2 gallons).

(5) This section does not apply to a hazardous material that is self-reactive (see §173.124), poisonous by inhalation (see §173.133), or a hazardous waste.

(6) A limited quantity package prepared in accordance with §173.63(b), §173.150, §173.151(b) and (c), §173.152, §173.153, §173.154, §173.155, §173.161, §173.165, §173.167, §173.306(i), or §173.309(d) of this subchapter. Division 4.3 substances must be prepared in accordance with paragraph (a)(3) of this section. Class 7 (radioactive) substances, instruments and articles are not authorized under the provisions of this section.

(b) *Packaging.* (1) Packagings must be leak tight for liquids and gases, sift proof for solids, and be securely closed, secured against shifting, and protected against damage.

(2) Each material must be packaged in the manufacturer's original packaging, or a packaging of equal or greater strength and integrity.

(3) Outer packagings are not required for receptacles (e.g., cans and bottles) that are secured against shifting in cages, carts, bins, boxes or compartments.

(4) For gasoline, a packaging must be made of metal or plastic and conform to the requirements of this subchapter or to the requirements of the Occupational Safety and Health Administration of the Department of Labor contained in 29 CFR

1910.106(d)(2) or 1926.152(a)(1).

(5) A cylinder or other pressure vessel containing a Division 2.1 or 2.2 material must conform to packaging, qualification, maintenance, and use requirements of this subchapter, except that outer packagings are not required. Manifolding of cylinders is authorized provided all valves are tightly closed.

(c) *Hazard communication.* (1) A non-bulk packaging other than a cylinder (including a receptacle transported without an outer packaging) must be marked with a common name or proper shipping name to identify the material it contains, including the letters "RQ" if it contains a reportable quantity of a hazardous substance.

(2) A bulk packaging containing a diluted mixture of a Class 9 material must be marked on two opposing sides with the four-digit identification number of the material. The identification number must be displayed on placards, orange panels or, alternatively, a white square-on-point configuration having the same outside dimensions as a placard (at least 273 mm (10.8 inches) on a side), in the manner specified in §172.332 (b) and (c) of this subchapter.

(3) A DOT specification cylinder (except DOT specification 39) must be marked and labeled as prescribed in this subchapter. Each DOT-39 cylinder must display the markings specified in 178.65(i).

(4) The operator of a motor vehicle that contains a material of trade must be informed of the presence of the hazardous material (including whether the package contains a reportable quantity) and must be informed of the requirements of this section.

(d) *Aggregate gross weight.* Except for a material of trade authorized by paragraph (a)(1)(iii) of this section, the aggregate gross weight of all materials of trade on a motor vehicle may not exceed 200 kg (440 pounds).

(e) *Other exceptions.* A material of trade may be transported on a motor vehicle under the provisions of this section with other hazardous materials without affecting its eligibility for exceptions provided by this section.

[Amdt. 173-259, 62 FR 1216, Jan. 8, 1997, as amended by Amdt. 173-262, 62 FR 49566, Sept. 22, 1997; 62 FR 51560, Oct. 1, 1997; Amdt. 173-259, 63 FR 8142, Feb. 18, 1998; 63 FR 52849, Oct. 1, 1998; 66 FR 45381, Aug. 28, 2001; 67 FR 53137, Aug. 14, 2002; 68 FR 75742, Dec. 31, 2003; 68 FR 61941, Oct. 30, 2003; 71 FR 32258, June 2, 2006; 72 FR 55692, Oct. 1, 2007; 78 FR 1113, Jan. 7, 2013; 78 FR 15326, Mar. 11, 2013; 78 FR 65478, Oct. 31, 2013]

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§173.7 Government operations and materials.

(a) Hazardous materials offered for transportation by, for, or to the Department of Defense (DOD) of the U.S. Government, including commercial shipments pursuant to a DOD contract, must be packaged in accordance with the regulations in this subchapter or in packagings of equal or greater strength and efficiency as certified by DOD in accordance with the procedures prescribed by "Packaging of Hazardous Material, DLAD 4145.41/AR 700-143/AFJI 24-210/NAVSUPINST 4030.55B/MCO 4030.40B (IBR, see §171.7 of this subchapter)." Hazardous materials offered for transportation by DOD under this provision may be reshipped by any shipper to any consignee provided the original packaging has not been damaged or altered in any manner.

(1) Hazardous materials sold by the DOD in packagings that are not marked in accordance with the requirements of this subchapter may be shipped from DOD installations if the DOD certifies in writing that the packagings are equal to or greater in strength and efficiency than the packaging prescribed in this subchapter. The shipper shall obtain such a certification in duplicate for each shipment. He shall give one copy to the originating carrier and retain the other for no less than 1 year.

(2) [Reserved]

(b) Shipments of hazardous materials, made by or under the direction or supervision of the U.S. Department of Energy (DOE) or the Department of Defense (DOD), for the purpose of national security, and which are escorted by personnel specifically designated by or under the authority of those agencies, are not subject to the requirements of this subchapter. For transportation by a motor vehicle or a rail car, the escorts must be in a separate transport vehicle from the transport vehicle carrying the hazardous materials that are excepted by this paragraph. A document certifying that the shipment is for the purpose of national security must be in the possession of the person in charge of providing security during transportation.

(c) Shipments of explosive samples, not exceeding 1 g net weight, offered by and consigned to the Bureau of Alcohol, Tobacco and Firearms (ATF) of the Department of the Treasury are not otherwise subject to the regulations in parts 110-189 of this subchapter when placed in a specifically designed multi-unit assembly packed in a strong outer packaging. The packaging must be of a type accepted by ATF as capable of precluding a propagation of any explosion outside the