

§ 173.313

(ii) Each fire extinguisher manufactured on and after January 1, 1976, must be designed and fabricated with a burst pressure of not less than six times its charged pressure at 21 °C (70 °F) when shipped;

(iii) Each fire extinguisher must be tested, without evidence of failure or damage, to at least three times its charged pressure at 21 °C (70 °F) but not less than 825 kPa (120 psig) before initial shipment, and must be marked to indicate the year of the test (within 90 days of the actual date of the original test) and with the words "MEETS DOT REQUIREMENTS." This marking is considered a certification that the fire extinguisher is manufactured in accordance with the requirements of this section. The words "This extinguisher meets all requirements of 49 CFR 173.306" may be displayed on fire extinguishers manufactured prior to January 1, 1976; and

(iv) For any subsequent shipment, each fire extinguisher must be in compliance with the retest requirements of the Occupational Safety and Health Administration Regulations of the Department of Labor, 29 CFR 1910.157(e).

(4) Specification 2P or 2Q (§§178.33 and 178.33a of this subchapter) inner nonrefillable metal packagings are authorized for use as fire extinguishers subject to the following conditions:

(i) The liquid portion of the gas plus any additional liquid or solid may not completely fill the packaging at 55 °C (130 °F);

(ii) Pressure in the packaging shall not exceed 1250 kPa (181 psig) at 55 °C (130 °F). If the pressure exceeds 920 kPa (141 psig) at 55 °C (130 °F), but does not exceed 1100 kPa (160 psig) at 55 °C (130 °F), a specification DOT 2P inner metal packaging must be used; if the pressure exceeds 1100 kPa (160 psig) at 55 °C (130 °F), a specification DOT 2Q inner metal packaging must be used. The metal packaging must be capable of withstanding, without bursting, a pressure of one and one-half times the equilibrium pressure of the contents at 55 °C (130 °F); and

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(iii) Each completed inner packaging filled for shipment must have been heated until the pressure in the container is equivalent to the equilibrium pressure of the contents at 55 °C (130 °F) without evidence of leakage, distortion, or other defect.

(b) Specification 3A, 3AA, 3E, 3AL, 4B, 4BA, 4B240ET or 4BW (§§178.36, 178.37, 178.42, 178.46, 178.50, 178.51, 178.55 and 178.61 of this subchapter) cylinders are authorized for use as fire extinguishers.

[Amdt. 173–235, 58 FR 50503, Sept. 27, 1993, as amended by Amdt. 173–138, 59 FR 49134, Sept. 26, 1994; Amdt. 173–258, 61 FR 51240, Oct. 1, 1996; 66 FR 45380, 45381, Aug. 28, 2001]

§ 173.313 UN Portable Tank Table for Liquefied Compressed Gases.

The UN Portable Tank Table for Liquefied Compressed Gases is referenced in §172.102(c)(7)(iii) of this subchapter for portable tanks that are used to transport liquefied compressed gases. The table applies to each liquefied compressed gas that is identified with Special Provision T50 in Column (7) of the §172.101 Table. In addition to providing the UN identification number and proper shipping name, the table provides maximum allowable working pressures, bottom opening requirements, pressure relief device requirements, and degree of filling requirements for liquefied compressed gas permitted for transportation in a T50 portable tank. In the minimum test pressure column, "small" means a portable tank with a diameter of 1.5 meters or less when measured at the widest part of the shell, "sunshield" means a portable tank with a shield covering at least the upper third of the shell, "bare" means no sunshield or insulation is provided, and "insulated" means a complete cladding of sufficient thickness of insulating material necessary to provide a minimum conductance of not more than 0.67 w/m²/k. In the pressure relief requirements column, the word "Normal" denotes that a frangible disc as specified in §178.276(e)(3) of this subchapter is not required.

UN PORTABLE TANK TABLE FOR LIQUEFIED COMPRESSED GASES

UN No.	Non-refrigerated liquefied compressed gases	Minimum design pressure (bar) small; bare; sunshield; insulated	Openings below liquid level	Pressure relief requirements (See § 178.276(e))	Maximum filling density (kg/l)
1005	Ammonia, anhydrous	29.0 25.7 22.0 19.7 38.0	Allowed	§ 178.276(e)(3)	0.53
1009	Bromotrifluoromethane or Refrigerant gas R 13B1.	34.0 30.0 27.5	Allowed	Normal	1.13
1010	Butadienes, stabilized	7.5 7.0 7.0 7.0	Allowed	Normal	0.55
1011	Butane	7.0 7.0 7.0	Allowed	Normal	0.51
1012	Butylene	7.0 8.0 7.0 7.0	Allowed	Normal	0.53
1017	Chlorine	19.0 17.0 15.0 13.5 26.0	Not Allowed	§ 178.276(e)(3)	1.25
1018	Chlorodifluoromethane or Refrigerant gas R 22.	24.0 21.0 19.0	Allowed	Normal	1.03
1020	Chloropentafluoroethane or Refrigerant gas R 115.	23.0 20.0 18.0 16.0 10.3	Allowed	Normal	1.06
1021	1-Chloro-1,2,2,2-tetrafluoroethane or Refrigerant gas R 124.	9.8 7.9 7.0	Allowed	Normal	1.2
1027	Cyclopropane	18.0 16.0 14.5 13.0	Allowed	Normal	0.53
1028	Dichlorodifluoromethane or Refrigerant gas R 12.	16.0 15.0 13.0 11.5	Allowed	Normal	1.15
1029	Dichlorofluoromethane or Refrigerant gas R 21.	7.0 7.0 7.0	Allowed	Normal	1.23
1030	1,1-Difluoroethane or Refrigerant gas R 152a.	16.0 14.0 12.4 11.0	Allowed	Normal	0.79
1032	Dimethylamine, anhydrous	7.0 7.0 7.0	Allowed	Normal	0.59
1033	Dimethyl ether	15.5 13.8 12.0 10.6	Allowed	Normal	0.58
1036	Ethylamine	7.0 7.0	Allowed	Normal	0.61

UN PORTABLE TANK TABLE FOR LIQUEFIED COMPRESSED GASES—Continued

UN No.	Non-refrigerated liquefied compressed gases	Minimum design pressure (bar) small; bare; sunshield; insulated	Openings below liquid level	Pressure relief requirements (See § 178.276(e))	Maximum filling density (kg/l)
1037	Ethyl chloride	7.0 7.0 7.0 7.0 7.0	Allowed	Normal	0.8
1040	Ethylene oxide with nitrogen up to a total pressure of 1MPa (10 bar) at 50 °C.	Only authorized in 10 bar insulated portable tanks—	Not Allowed	§ 178.276(e)(3)	0.78
1041	Ethylene oxide and carbon dioxide mixture with more than 9% but not more than 87% ethylene oxide.	See MAWP definition in § 178.276(a)	Allowed	Normal	See § 173.32(f)
1055	Isobutylene	8.1 7.0 7.0 7.0	Allowed	Normal	0.52
1060	Methyl acetylene and propadiene mixture, stabilized.	28.0 24.5 22.0 20.0	Allowed	Normal	0.43
1061	Methylamine, anhydrous	10.8 9.6 7.8 7.0	Allowed	Normal	0.58
1062	Methyl bromide	7.0	Not Allowed	§ 178.276(e)(3)	1.51
1063	Methyl chloride or Refrigerant gas R 40 ...	7.0 7.0 7.0 14.5 12.7 11.3 10.0	Allowed	Normal	0.81
1064	Methyl mercaptan	7.0	Not Allowed	§ 178.276(e)(3)	0.78
1067	Dinitrogen tetroxide	7.0 7.0 7.0 7.0	Not Allowed	§ 178.276(e)(3)	1.3
1075	Petroleum gas, liquefied	7.0 7.0 7.0	Allowed	Normal	See § 173.32(f)
1077	Propylene	See MAWP definition in § 178.276(a) 28.0 24.5 22.0 20.0	Allowed	Normal	0.43
1078	Refrigerant gas, n.o.s.	See MAWP definition in § 178.276(a)	Allowed	Normal	See § 173.32(f)
1079	Sulphur dioxide	11.6	Not Allowed	§ 178.276(e)(3)	1.23
1082	Trifluorochloroethylene, stabilized or Refrigerant gas R 1113.	10.3 8.5 7.6 17.0	Not Allowed	§ 178.276(e)(3)	1.13
1083	Trimethylamine, anhydrous	15.0 13.1 11.6 7.0 7.0 7.0	Allowed	Normal	0.56
1085	Vinyl bromide, stabilized	7.0	Allowed	Normal	1.37

UN PORTABLE TANK TABLE FOR LIQUEFIED COMPRESSED GASES—Continued

UN No.	Non-refrigerated liquefied compressed gases	Minimum design pressure (bar) small; bare; sunshield; insulated	Openings below liquid level	Pressure relief requirements (See § 178.276(e))	Maximum filling density (kg/l)
1086	Vinyl chloride, stabilized	7.0 7.0 7.0 10.6	Allowed	Normal	0.81
1087	Vinyl methyl ether, stabilized	9.3 8.0 7.0 7.0 7.0	Allowed	Normal	0.67
1581	Chloropicrin and methyl bromide mixture	7.0	Not Allowed	§ 178.276(e)(3)	1.51
1582	Chloropicrin and methyl chloride mixture	7.0 7.0 7.0 19.2	Not Allowed	§ 178.276(e)(3)	0.81
1858	Hexafluoropropylene compressed or Refrigerant gas R 1216.	16.9 15.1 13.1 19.2	Allowed	Normal	1.11
1912	Methyl chloride and methylene chloride mixture.	16.9 15.1 13.1 15.2	Allowed	Normal	0.081
NA, 1954	Insecticide gases, <i>flammable</i> , n.o.s.	13.0 11.6 10.1 See MAWP definition in § 178.276(a)	Allowed	Normal	§ 173.32(f)
1958	1,2-Dichloro-1,1,2,2-tetrafluoroethane or Refrigerant gas R 114.	7.0	Allowed	Normal	1.3
1965	Hydrocarbon gas, mixture liquefied, n.o.s.	7.0 7.0 7.0 See MAWP definition in § 178.276(a)	Allowed	Normal	See § 173.32(f)
1969	Isobutane	8.5 7.5 7.0 7.0	Allowed	Normal	0.49
1973	Chlorodifluoromethane and chloropentafluoroethane mixture with fixed boiling point, with approximately 49% chlorodifluoromethane or Refrigerant gas R 502.	28.3	Allowed	Normal	1.05
1974	Chlorodifluorobromomethane or Refrigerant gas R 12B1.	25.3 22.8 20.3 7.4	Allowed	Normal	1.61
1976	Octafluorocyclobutane or Refrigerant gas RC 318.	7.0 7.0 7.0 8.8	Allowed	Normal	1.34
1978	Propane	7.8 7.0 7.0 22.5 20.4 18.0 16.5	Allowed	Normal	0.42

UN PORTABLE TANK TABLE FOR LIQUEFIED COMPRESSED GASES—Continued

UN No.	Non-refrigerated liquefied compressed gases	Minimum design pressure (bar) small; bare; sunshield; insulated	Openings below liquid level	Pressure relief requirements (See § 178.276(e))	Maximum filling density (kg/l)
1983	1-Chloro-2,2,2-trifluoroethane or Refrigerant gas R 133a.	7.0	Allowed	Normal	1.18
2035	1,1,1-Trifluoroethane compressed or Refrigerant gas R 143a.	7.0 7.0 7.0 31.0	Allowed	Normal	0.76
2424	Octafluoropropane or Refrigerant gas R 218.	27.5 24.2 21.8 23.1	Allowed	Normal	1.07
2517	1-Chloro-1,1-difluoroethane or Refrigerant gas R 142b.	20.8 18.6 16.6 8.9	Allowed	Normal	0.99
2602	Dichlorodifluoromethane and difluoroethane azeotropic mixture with approximately 74% dichlorodifluoromethane or Refrigerant gas R 500.	7.8 7.0 7.0 20.0	Allowed	Normal	1.01
3057	Trifluoroacetyl chloride	18.0 16.0 14.5 14.6	Not allowed	§ 178.276(e)(3)	1.17
3070	Ethylene oxide and dichlorodifluoromethane mixture with not more than 12.5% ethylene oxide.	12.9 11.3 9.9 14.0	Allowed	§ 178.276(e)(3)	1.09
3153	Perfluoro (methyl vinyl ether)	12.0 11.0 9.0 14.3	Allowed	Normal	1.14
3159	1,1,1,2-Tetrafluoroethane or Refrigerant gas R 134a.	13.4 11.2 10.2 17.7	Allowed	Normal	1.04
3161	Liquefied gas, flammable, n.o.s.	15.7 13.8 12.1 See MAWP definition in § 178.276(a)	Allowed	Normal	§ 173.32(f)
3163	Liquefied gas, n.o.s.	See MAWP definition in § 178.276(a)	Allowed	Normal	§ 173.32(f)
3220	Pentafluoroethane or Refrigerant gas R 125.	34.4 30.8 27.5 24.5	Allowed	Normal	0.95
3252	Difluoromethane or Refrigerant gas R 32	43.0 39.0 34.4 30.5	Allowed	Normal	0.78
3296	Heptafluoropropane or Refrigerant gas R 227.	16.0 14.0 12.5 11.0	Allowed	Normal	1.2

UN PORTABLE TANK TABLE FOR LIQUEFIED COMPRESSED GASES—Continued

UN No.	Non-refrigerated liquefied compressed gases	Minimum design pressure (bar) small; bare; sunshield; insulated	Openings below liquid level	Pressure relief requirements (See § 178.276(e))	Maximum filling density (kg/l)
3297	Ethylene oxide and chlorotetrafluoroethane mixture, with not more than 8.8% ethylene oxide.	8.1 7.0 7.0 7.0	Allowed	Normal	1.16
3298	Ethylene oxide and pentafluoroethane mixture, with not more than 7.9% ethylene oxide.	25.9 23.4 20.9 18.6	Allowed	Normal	1.02
3299	Ethylene oxide and tetrafluoroethane mixture, with not more than 5.6% ethylene oxide.	16.7 14.7 12.9 11.2	Allowed	Normal	1.03
3318	Ammonia solution, relative density less than 0.880 at 15 °C in water, with more than 50% ammonia.	See MAWP definition in § 178.276(a)	Allowed	§ 178.276(e)(3)	§ 173.32(f)
3337	Refrigerant gas R 404A	31.6 28.3 25.3 22.5	Allowed	Normal	0.84
3338	Refrigerant gas R 407A	31.3 28.1 25.1 22.4	Allowed	Normal	0.95
3339	Refrigerant gas R 407B	33.0 29.6 26.5 23.6	Allowed	Normal	0.95
3340	Refrigerant gas R 407C	29.9 26.8 23.9 21.3	Allowed	Normal	0.95

[69 FR 76174, Dec. 20, 2004, as amended at 70 FR 34399, June 14, 2005]

§ 173.314 Compressed gases in tank cars and multi-unit tank cars.

(a) *Definitions.* For definitions of compressed gases, see § 173.115.

(b) *General requirements.* (1) Tank car tanks containing compressed gases must not be shipped unless they were loaded by or with the consent of the owner thereof.

(2) Tank car tanks must not contain gases capable of combining chemically and must not be loaded with any gas which combines chemically with the gas previously loaded therein, until all residue has been removed and interior of tank thoroughly cleaned.

(3) For tanks of the DOT-106A and 110A class, the tanks must be placed in

position and attached to car structure by the shipper.

(4) Wherever the word “approved” is used in this part of the regulations, it means approval by the Association of American Railroads Committee on Tank Cars as prescribed in § 179.3 of this subchapter.

(5) Each tank car used for the transportation of anhydrous ammonia or any material that meets the criteria of Division 2.1 or 2.3 must have gaskets for manway cover plates and for mounting of fittings designed (for temperature, application, media, pressure, and size) to create a positive seal so that, under conditions normally incident to transportation, there will not be an identifiable release of the material to the environment. The use of sealants to install gaskets is prohibited.