

§ 173.313

49 CFR Ch. I (10–1–13 Edition)

§§ 173.301, 173.301b, 173.302b and 173.304b, as applicable.

(2) The MEGC must conform to the design, construction, inspection and testing requirements prescribed in § 178.75 of this subchapter.

(3) No person may offer or accept a hazardous material for transportation in a MEGC that is damaged to such an extent that the integrity of the pressure receptacles or the MEGC's structural or service equipment may be affected.

(4) No person may fill or offer for transportation a pressure receptacle in a MEGC if the pressure receptacle or the MEGC is due for periodic requalification, as prescribed in subpart C to part 180 of this subchapter. However, this restriction does not preclude transportation of pressure receptacles filled and offered for transportation prior to the requalification due date.

(5) Prior to filling and offering a MEGC for transportation, the MEGC's structural and service equipment must be visually inspected. Any unsafe condition must be corrected before the MEGC is offered for transportation. All required markings must be legible.

(6) Except for Division 2.2 permanent gases, each pressure receptacle must be equipped with an individual shutoff valve that must be tightly closed while in transit. For Division 2.1, Division 2.2 liquefied gases and 2.3 gases, the manifold must be designed so that each pressure receptacle can be filled separately and be kept isolated by a valve capable of being closed during transit. For Division 2.1 gases, the pressure receptacles must be isolated by a valve into assemblies of not more than 3,000 L.

(b) *Filling.* (1) A MEGC may not be filled to a pressure greater than the lowest marked working pressure of any pressure receptacle. A MEGC may not be filled above its marked maximum permissible gross mass.

(2) After each filling, the shipper must verify the leakproofness of the

closures and equipment. Each fill opening must be closed by a cap or plug.

(c) *Damage protection.* During transportation, a MEGC must be protected against damage to the pressure receptacles and service equipment resulting from lateral and longitudinal impact and overturning as prescribed in § 178.75 of this subchapter.

[71 FR 33884, June 12, 2006]

§ 173.313 UN Portable Tank Table for Liquefied Compressed Gases and Chemical Under Pressure.

The UN Portable Tank Table for Liquefied Compressed Gases and chemical under pressure is referenced in § 172.102(c)(7)(iii) of this subchapter for portable tanks that are used to transport liquefied compressed gases and chemicals under pressure. The table applies to each liquefied compressed gas and chemical under pressure that are identified with Special Provision T50 in Column (7) of the § 172.101 Hazardous Materials 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 and chemical under pressure 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 AND CHEMICALS UNDER PRESSURE

| 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 16.0 | Allowed | Normal | 0.53 |
| 1028 | Dichlorodifluoromethane or Refrigerant gas R 12. | 15.0 13.0 11.5 7.0 | Allowed | Normal | 1.15 |
| 1029 | Dichlorofluoromethane or Refrigerant gas R 21. | 7.0 7.0 7.0 16.0 | Allowed | Normal | 1.23 |
| 1030 | 1,1-Difluoroethane or Refrigerant gas R 152a. | 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 7.0 7.0 | Allowed | Normal | 0.58 |
| 1036 | Ethylamine | 7.0 | Allowed | Normal | 0.61 |

UN PORTABLE TANK TABLE FOR LIQUEFIED COMPRESSED GASES AND CHEMICALS UNDER PRESSURE—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 | Allowed | Normal | 0.43 |
| 1061 | Methylamine, anhydrous | 24.5 22.0 20.0 10.8 9.6 7.8 7.0 | Allowed | Normal | 0.58 |
| 1062 | Methyl bromide | 7.0 7.0 7.0 7.0 | Not Allowed | § 178.276(e)(3) | 1.51 |
| 1063 | Methyl chloride or Refrigerant gas R 40 | 14.5 12.7 11.3 10.0 | Allowed | Normal | 0.81 |
| 1064 | Methyl mercaptan | 7.0 7.0 7.0 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 | See MAWP definition in § 178.276(a) | Allowed | Normal | See § 173.32(f) |
| 1077 | Propylene | 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 10.3 8.5 7.6 17.0 | Not Allowed | § 178.276(e)(3) | 1.23 |
| 1082 | Trifluorochloroethylene, stabilized or Refrigerant gas R 1113. | 15.0 13.1 11.6 7.0 7.0 7.0 | Not Allowed | § 178.276(e)(3) | 1.13 |
| 1083 | Trimethylamine, anhydrous | 7.0 7.0 7.0 7.0 | Allowed | Normal | 0.56 |
| 1085 | Vinyl bromide, stabilized | 7.0 7.0 | Allowed | Normal | 1.37 |

UN PORTABLE TANK TABLE FOR LIQUEFIED COMPRESSED GASES AND CHEMICALS UNDER PRESSURE—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 10.6 9.3 8.0 7.0 | Allowed | Normal | 0.81 |
| 1087 | Vinyl methyl ether, stabilized | 7.0 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 7.0 7.0 | Allowed | Normal | 1.3 |
| 1965 | Hydrocarbon gas, mixture liquefied, n.o.s. | 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 AND CHEMICALS UNDER PRESSURE—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 7.0 7.0 7.0 | Allowed | Normal | 1.18 |
| 2035 | 1,1,1-Trifluoroethane compressed or Refrigerant gas R 143a. | 31.0 27.5 24.2 21.8 | Allowed | Normal | 0.76 |
| 2424 | Octafluoropropane or Refrigerant gas R 218. | 23.1 20.8 18.6 16.6 | Allowed | Normal | 1.07 |
| 2517 | 1-Chloro-1,1-difluoroethane or Refrigerant gas R 142b. | 8.9 7.8 7.0 7.0 | Allowed | Normal | 0.99 |
| 2602 | Dichlorodifluoromethane and difluoroethane azeotropic mixture with approximately 74% dichlorodifluoromethane or Refrigerant gas R 500. | 20.0 18.0 16.0 14.5 | Allowed | Normal | 1.01 |
| 3057 | Trifluoroacetyl chloride | 14.6 12.9 11.3 9.9 | Not allowed | § 178.276(e)(3) | 1.17 |
| 3070 | Ethylene oxide and dichlorodifluoromethane mixture with not more than 12.5% ethylene oxide. | 14.0 12.0 11.0 9.0 | Allowed | § 178.276(e)(3) | 1.09 |
| 3153 | Perfluoro (methyl vinyl ether) | 14.3 13.4 11.2 10.2 | Allowed | Normal | 1.14 |
| 3159 | 1,1,1,2-Tetrafluoroethane or Refrigerant gas R 134a. | 17.7 15.7 13.8 12.1 | Allowed | Normal | 1.04 |
| 3161 | Liquefied gas, flammable, n.o.s. | 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 | 0.87 | |
| 3252 | Difluoromethane or Refrigerant gas R 32. | 43.0 39.0 34.4 30.5 | Normal 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 AND CHEMICALS UNDER PRESSURE—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 | Allowed | Normal | 1.16 |
| 3298 | Ethylene oxide and pentafluoroethane mixture, with not more than 7.9% ethylene oxide. | 7.0 7.0 7.0 25.9 | Allowed | Normal | 1.02 |
| 3299 | Ethylene oxide and tetrafluoroethane mixture, with not more than 5.6% ethylene oxide. | 23.4 20.9 18.6 16.7 | Allowed | Normal | 1.03 |
| 3318 | Ammonia solution, relative density less than 0.880 at 15 °C in water, with more than 50% ammonia. | 14.7 12.9 11.2 | Allowed | § 178.276(e)(3) | § 173.32(f) |
| 3337 | Refrigerant gas R 404A | See MAWP definition in § 178.276(a) 31.6 28.3 25.3 | Allowed | Normal | 0.84 |
| 3338 | Refrigerant gas R 407A | 22.5 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 |
| 3500 | Chemical under pressure, n.o.s | See MAWP definition in § 178.276(a) | Allowed | § 178.276(e)(3) | See TP4 in § 172.102(c) |
| 3501 | Chemical under pressure, flammable, n.o.s. | See MAWP definition in § 178.276(a) | Allowed | § 178.276(e)(3) | See TP4 in § 172.102(c) |
| 3502 | Chemical under pressure, toxic, n.o.s ... | See MAWP definition in § 178.276(a) | Allowed | § 178.276(e)(3) | See TP4 in § 172.102(c) |
| 3503 | Chemical under pressure, corrosive, n.o.s. | See MAWP definition in § 178.276(a) | Allowed | § 178.276(e)(3) | See TP4 in § 172.102(c) |
| 3504 | Chemical under pressure, flammable, toxic, n.o.s. | See MAWP definition in § 178.276(a) | Allowed | § 178.276(e)(3) | See TP4 in § 172.102(c) |
| 3505 | Chemical under pressure, flammable, corrosive, n.o.s. | See MAWP definition in § 178.276(a) | Allowed | § 178.276(e)(3) | See TP4 in § 172.102(c) |

[69 FR 76174, Dec. 20, 2004, as amended at 70 FR 34399, June 14, 2005; 78 FR 1091, Jan. 7, 2013]

§ 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