§ 154.1415  Air compressor.

Each vessel must have an air compressor to recharge the bottles for the air-breathing apparatus.

§ 154.1420  Stretchers and equipment.

Each vessel must have:
(a) Two stretchers or wire baskets; and
(b) Equipment for lifting an injured person from a cargo tank, hold, or void space.

§ 154.1430  Equipment locker.

One of each item of equipment under §§154.1400 and 154.1420 must be stowed in a marked locker:
(a) On the open deck in or adjacent to the cargo area; or
(b) In the accommodation house, near to a door that opens onto the main deck.

§ 154.1435  Medical first aid guide.

Each vessel must have a copy of the IMO Medical First Aid Guide for Use in Accidents Involving Dangerous Goods, printed by IMO, London, U.K.

§ 154.1440  Antidotes.

Each vessel must have the antidotes prescribed in the IMO Medical First Aid Guide for Use in Accidents Involving Dangerous Goods, printed by IMO, London, U.K. for the cargoes being carried.

Subpart D—Special Design and Operating Requirements

§ 154.1700  Purpose.

This subpart prescribes design and operating requirements that are unique for certain cargoes regulated by this part.

§ 154.1702  Materials of construction.

When Table 4 references one of the following paragraphs in this section, the materials in the referenced paragraph must not be in components that contact the cargo liquid or vapor:
(a) Aluminum and aluminum bearing alloys.
(b) Copper and copper bearing alloys.
(c) Zinc or galvanized steel.
(d) Magnesium.
(e) Mercury.

(f) Acetylide forming materials, such as copper, silver, and mercury.

§ 154.1705  Independent tank type C.

The following cargoes must be carried in an independent tank type C that meets §154.701(a):
(a) Ethylene oxide.
(b) Methyl bromide.
(c) Sulfur dioxide.

§ 154.1710  Exclusion of air from cargo tank vapor spaces.

When a vessel is carrying acetaldehyde, butadiene, ethylene oxide, or vinyl chloride, the master shall ensure that air is:
(a) Purged from the cargo tanks and associated piping before the cargo is loaded; and
(b) Excluded after the cargo is loaded by maintaining a positive pressure of at least 13.8 kPa gauge (2 psig) by:
   (1) Introducing a gas that:
      (i) Is not reactive;
      (ii) Is not flammable; and
      (iii) Does not contain more than 0.2% oxygen by volume; or
   (2) Controlling the cargo temperature.

§ 154.1715  Moisture control.

When a vessel is carrying sulfur dioxide, the master shall ensure that:
(a) A cargo tank is dry before it is loaded with sulfur dioxide; and
(b) Air or inert gas admitted into a cargo tank carrying sulfur dioxide during discharging or tank breathing has a moisture content equal to or less than the moisture content of air with a dew point of −45 °C (−49 °F) at atmospheric pressure.


§ 154.1720  Indirect refrigeration.

A refrigeration system that is used to cool acetaldehyde, ethylene oxide, or methyl bromide, must be an indirect refrigeration system that does not use vapor compression.

§ 154.1725  Ethylene oxide.

(a) A vessel carrying ethylene oxide must:
§ 154.1735 Methyl acetylene-propadiene mixture.

(a) The composition of the methyl acetylene-propadiene mixture at loading must be within the following limits or specially approved by the Commandant (CG–OES):

(1) One composition is:
   (i) Maximum methyl acetylene and propadiene molar ratio of 3 to 1;
   (ii) Maximum combined concentration of methyl acetylene and propadiene of 65 mole percent;
   (iii) Minimum combined concentration of propane, butanes, and isobutane of 24 mole percent, of which at least one-third (on a molar basis) must be butanes and one-third propane; and
   (iv) Maximum combined concentration of propylene and butadiene of 15 mole percent.

(2) A second composition is:
   (i) Maximum methyl acetylene and propadiene combined concentration of 30 mole percent;
   (ii) Maximum methyl acetylene concentration of 20 mole percent;
   (iii) Maximum propadiene concentration of 20 mole percent;
   (iv) Maximum propylene concentration of 45 mole percent;
   (v) Maximum butadiene and butylenes combined concentration of 2 mole percent;
   (vi) A minimum saturated C₄ hydrocarbon concentration of 4 mole percent; and
   (vii) A minimum propane concentration of 25 mole percent.

(b) A vessel carrying a methyl acetylene-propadiene mixture must have a refrigeration system without vapor compression or have a refrigeration system with the following features:

(1) A vapor compressor that does not raise the temperature and pressure of

§ 154.1730 Ethylene oxide: Loading and off loading.

(a) The master shall ensure that before ethylene oxide is loaded into a cargo tank:

(1) The tank is thoroughly clean, dry, and free of rust;
(2) The hold spaces are inerted with an inert gas that meets §154.1710(b)(1); and
(3) The cargo tank vapor space is inerted with nitrogen.

(b) Ethylene oxide must be off loaded by a deepwell pump or inert gas displacement.

(c) Ethylene oxide must not be carried in deck tanks.