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number (*i.e.*, T\*\*\*), in association with the basic description.

(2) In addition to the requirements of subpart D of part 172, a lighter design test report identifier (see paragraph (b)(4)(i)(C) of this section) or, if applicable, the previously issued approval number (*i.e.*, T\*\*\*), must be marked on a package containing lighters.

(3) For transportation by vessel in a closed transport vehicle or a closed freight container, the following warning must be affixed to the access doors:

WARNING—MAY CONTAIN EXPLOSIVE MIXTURES WITH AIR—KEEP IGNITION SOURCES AWAY WHEN OPENING

The warning must be on a contrasting background and must be in letters measuring at least 12.7 mm (0.5 inch) in height.

(e) *Exceptions*—(1) *Common or contract carriage*. For highway transportation by common or contract carrier, when no more than 1,500 lighters covered by this section are transported in one motor vehicle, the requirements of subparts C through H of part 172, and part 177 of this subchapter do not apply. Lighters transported in accordance with this paragraph are also excepted from the specification packaging, shipping paper, and marking requirements specified in §173.308(c) and (d). Inner packagings must conform to paragraph (c)(1) of this section. Lighters must be further packaged in rigid, strong outer packagings meeting the general packaging requirements of subpart B of part 173. Outer packagings must be plainly and durably marked, on two opposing sides or ends, with the word “LIGHTERS” and the number of devices contained therein in letters measuring at least 20 mm (0.79 in) in height. In addition, the package must include the test report identifier for each lighter design as specified in paragraph (b)(4)(i)(C) of this section or, if applicable, the previously issued approval number (*i.e.*, T\*\*\*). The test report identifier or approval number must be durable, legible, in English, and located in, attached to, or marked directly on the package. No person may offer for transportation or transport the lighters or prepare the lighters for shipment unless that person has been specifically

informed of the requirements of this section.

(2) *Private carriage*. For highway transportation by a private carrier, lighters that have been examined and successfully tested in accordance with this section are not subject to any other requirements of this subchapter under the following conditions:

(i) No person may offer for transportation or transport the lighters or prepare the lighters for shipment unless that person has been specifically informed of the requirements of this section;

(ii) Lighters must be placed in an inner packaging that is designed to prevent accidental activation of the ignition device or valve, release of gas, and movement of the lighters (*e.g.*, tray, blister pack, etc.);

(iii) Inner packagings must be placed in a securely closed rigid outer packaging that limits movement of the inner packagings and protects them from damage;

(iv) The outer package may contain not more than 300 lighters;

(v) A transport vehicle may carry not more than 1,500 lighters at any one time;

(vi) The lighters may not be placed in an outer packaging with other hazardous materials; and

(vii) Outer packagings must be plainly and durably marked with the words “LIGHTERS, excepted quantity.”

[71 FR 3427, Jan. 23, 2006, as amended at 73 FR 57006, Oct. 1, 2008]

§ 173.309 Fire extinguishers.

(a) 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 manufacture and use as fire extinguishers under the following conditions:

(1) Extinguishing agents must be nonflammable, non-poisonous, non-corrosive, and commercially free from corroding components;

(2) Each fire extinguisher must be charged with a nonflammable, non-poisonous, dry gas that has a dew-point at or below minus 46.7 °C (minus 52 °F) at 101 kPa (1 atmosphere) and is free of corroding components, to not more

than the service pressure of the cylinder;

(3) A fire extinguisher may not contain more than 30% carbon dioxide by volume or any other corrosive extinguishing agent; and

(4) Each fire extinguisher must be protected externally by suitable corrosion-resisting coating.

(5) Specification 3E and 4BA cylinders must be packed in strong non-bulk outer packagings. The outside of the combination packaging must be marked with an indication that the inner packagings conform to the prescribed specifications.

(b) Specification 2P or 2Q (§§178.33 and 178.33a of this subchapter) inner non-refillable metal packagings are authorized as fire extinguishers subject to the following conditions:

(1) Extinguishing agents must be nonflammable, non-poisonous, and non-corrosive as defined in this subchapter;

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

(3) Pressure in the packaging must 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);

(4) 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; and

(5) Specification 2P and 2Q cylinders must be packed in strong non-bulk outer packagings. The outside of the combination packaging must be marked with an indication that the inner packagings conform to the prescribed specifications.

(c) Non-specification cylinders are authorized as fire extinguishers subject to the following conditions:

(1) Extinguishing agents must be nonflammable, non-poisonous, and non-corrosive as defined in this subchapter;

(2) The internal volume of each cylinder may not exceed 18 L (1,100 cubic inches). For fire extinguishers not exceeding 900 mL (55 cubic inches) capacity, the liquid portion of the gas plus any additional liquid or solid must not completely fill the container at 55 °C (130 °F). Fire extinguishers exceeding 900 mL (55 cubic inches) capacity may not contain any liquefied compressed gas;

(3) 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;

(4) 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;

(5) Each non-specification fire extinguisher must be packaged as an inner packaging within a combination outer packaging. Examples of acceptable outer packagings for non-specification fire extinguishers include large cartons, racks, cages or other suitable enclosures; and

(6) 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.

(d) Limited quantities: Fire extinguishers otherwise conforming to paragraph (a), (b), or (c) of this section and are charged with a limited quantity of

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compressed gas to not more than 1660 kPa (241 psig) at 21 °C (70 °F) are excepted from shipping papers (except when offered for transportation by aircraft or vessel), labeling (except when offered for transportation by aircraft), placarding, the specification packaging requirements of this subchapter, and are eligible for the exceptions provided in §173.156 when offered for transportation in accordance with this paragraph (d). Limited quantity shipments conforming to this paragraph are not subject to parts 174 and 177 of this subchapter when transported by highway or rail. In addition, limited quantity packages of fire extinguishers are subject to the following conditions, as applicable:

(1) Extinguishing agents must be nonflammable, non-poisonous, and non-corrosive as defined in this subchapter; and

(2) Packages must be marked as specified for limited quantities in §172.315 of this subchapter.

[78 FR 1116, Jan. 7, 2013]

### § 173.310 Exceptions for radiation detectors.

Radiation detectors, radiation sensors, electron tube devices, or ionization chambers, herein referred to as "radiation detectors," that contain only Division 2.2 gases, are excepted from the specification packaging in this subchapter and, except when transported by air, from labeling and placarding requirements of this subchapter when designed, packaged, and transported as follows:

(a) Radiation detectors must be single-trip, hermetically sealed, welded metal inside containers that will not fragment upon impact.

(b) Radiation detectors must not have a design pressure exceeding 4.83 MPa (700 psig) and a capacity exceeding 355 fluid ounces (641 cubic inches). They must be designed and fabricated with a burst pressure of not less than three times the design pressure if the radiation detector is equipped with a pressure relief device, and not less than four times the design pressure if the detector is not equipped with a pressure relief device.

(c) Radiation detectors must be shipped in a strong outer packaging ca-

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pable of withstanding a drop test of at least 1.2 meters (4 feet) without breakage of the radiation detector or rupture of the outer packaging. If the radiation detector is shipped as part of other equipment, the equipment must be packaged in strong outer packaging or the equipment itself must provide an equivalent level of protection.

(d) Emergency response information accompanying each shipment and available from each emergency response telephone number for radiation detectors must identify those receptacles that are not fitted with a pressure relief device and provide appropriate guidance for exposure to fire.

[75 FR 27215, May 14, 2010]

### § 173.311 Metal hydride storage systems.

The following packing instruction is applicable to transportable UN Metal hydride storage systems (UN3468) with pressure receptacles not exceeding 150 liters (40 gallons) in water capacity and having a maximum developed pressure not exceeding 25 MPa. Metal hydride storage systems must be designed, constructed, initially inspected and tested in accordance with ISO 16111 (IBR, see §171.7 of this subchapter) as authorized under §178.71(m) of this subchapter. Steel pressure receptacles or composite pressure receptacles with steel liners must be marked in accordance with §173.301b(f) of this part which specifies that a steel UN pressure receptacle bearing an "H" mark must be used for hydrogen bearing gases or other gases that may cause hydrogen embrittlement. Requalification intervals must be no more than every five years as specified in §180.207 of this subchapter in accordance with the requalification procedures prescribed in ISO 16111.

[76 FR 3381, Jan. 19, 2011, as amended at 76 FR 82178, Dec. 30, 2011]

### § 173.312 Requirements for shipment of MEGCs.

(a) *General requirements.* (1) Unless otherwise specified, a MEGC is authorized for the shipment of liquefied and non-liquefied compressed gases. Each pressure receptacle contained in a MEGC must meet the requirements in