(iii) Inside boxes, partitions or metal clips must be packed in securely-closed strong outside packagings;
(iv) Maximum gross weight is limited to 30 kg (66 pounds) per package; and
(v) Cartridges, power devices which are used to project fastening devices and 22 caliber rim-fire cartridges may be packaged loose in strong outside packagings.

(c)–(e) [Reserved]

(f) Detonators containing no more than 1 g explosive (excluding ignition and delay charges) that are electric blasting caps with leg wires 4 feet long or longer, delay connectors in plastic sheaths, or blasting caps with empty plastic tubing 12 feet long or longer may be packed as follows in which case they are excepted from the packaging requirements of §173.62:
(1) No more than 50 detonators in one inner packaging;
(2) IME Standard 22 container (IBR, see §171.7 of this subchapter) or compartment is used as the outer packaging;
(3) No more than 1000 detonators in one outer packaging; and
(4) No material may be loaded on top of the IME Standard 22 container and no material may be loaded against the outside door of the IME Standard 22 compartment.

(g) Detonators that are classed as 1.4B or 1.4S and contain no more than 1 g of explosive (excluding ignition and delay charges) may be packed as follows in which case they are excepted from the packaging requirements of §173.62:
(1) No more than 50 detonators in one inner packaging;
(2) IME Standard 22 container is used as the outer packaging;
(3) No more than 1000 detonators in one outer packaging; and
(4) Each inner packaging is marked “1.4B Detonators” or “1.4S Detonators”, as appropriate.

[Amdt. 173–224, 55 FR 52634 Dec. 21, 1990, unless otherwise noted.]

§ 173.115 Class 2, Divisions 2.1, 2.2, and 2.3—Definitions.

(a) Division 2.1 (Flammable gas). For the purpose of this subchapter, a flammable gas (Division 2.1) means any material which is a gas at 20 °C (68 °F) or less and 101.3 kPa (14.7 psia) of pressure (a material which has a boiling point of 20 °C (68 °F) or less at 101.3 kPa (14.7 psia)) which—
(1) Is ignitable at 101.3 kPa (14.7 psia) when in a mixture of 13 percent or less by volume with air; or
(2) Has a flammable range at 101.3 kPa (14.7 psia) with air of at least 12 percent regardless of the lower limit. Except for aerosols, the limits specified in paragraphs (a)(1) and (a)(2) of this section shall be determined at 101.3 kPa (14.7 psia) of pressure and a temperature of 20 °C (68 °F) in accordance with the ASTM E681–85, Standard Test Method for Concentration Limits of Flammability of Chemicals or other equivalent method approved by the Associate Administrator. The flammability of aerosols is determined by the tests specified in §173.115 (k) of this section.

(b) Division 2.2 (non-flammable, nonpoisonous compressed gas—including compressed gas, liquefied gas, pressurized cryogenic gas, compressed gas in solution, asphyxiant gas and oxidizing gas). For the purpose of this subchapter, a non-flammable, nonpoisonous compressed gas (Division 2.2) means any material (or mixture) which—
(1) Exerts in the packaging an absolute pressure of 280 kPa (40.6 psia) or greater at 20 °C (68 °F), and
(2) Does not meet the definition of Division 2.1 or 2.3.

(c) Division 2.3 (Gas poisonous by inhalation). For the purpose of this subchapter, a gas poisonous by inhalation (Division 2.3) means a material which is a gas at 20 °C (68 °F) or less and a
§ 173.115

pressure of 101.3 kPa (14.7 psia) (a material which has a boiling point of 20 °C (68 °F) or less at 101.3 kPa (14.7 psia)) and which—

(1) Is known to be so toxic to humans as to pose a hazard to health during transportation, or

(2) In the absence of adequate data on human toxicity, is presumed to be toxic to humans because when tested on laboratory animals it has an LC50 value of not more than 5000 mL/m³ (see §173.116(a) of this subpart for assignment of Hazard Zones A, B, C or D).

(b) Non-liquefied compressed gas. A gas, which when packaged under pressure for transportation is entirely gaseous at −50 °C (−58 °F) with a critical temperature less than or equal to −50 °C (−58 °F), is considered to be a non-liquefied compressed gas.

(c) Liquefied compressed gas. A gas, which when packaged under pressure for transportation is partially liquid at temperatures above −50 °C (−58 °F), is considered to be a liquefied compressed gas.

(d) Liquefied compressed gas. A gas which when packaged under pressure for transportation is entirely gaseous at −50 °C (−58 °F) with a critical temperature less than or equal to −50 °C (−58 °F), is considered to be a non-liquefied compressed gas.

(e) Liquefied compressed gas. A gas, which when packaged under pressure for transportation is partially liquid at temperatures above −50 °C (−58 °F), is considered to be a liquefied compressed gas. A liquefied compressed gas is further categorized as follows:

(1) High pressure liquefied gas which is a gas with a critical temperature between −50 °C (−58 °F) and + 65 °C (149 °F), and

(2) Low pressure liquefied gas which is a gas with a critical temperature above + 65 °C (149 °F).

(f) Compressed gas in solution. A compressed gas in solution is a non-liquefied compressed gas which is dissolved in a solvent.

(g) Cryogenic liquid. A cryogenic liquid means a refrigerated liquefied gas having a boiling point colder than −90 °C (−130 °F) at 101.3 kPa (14.7 psia) absolute. A material meeting this definition is subject to requirements of this subchapter without regard to whether it meets the definition of a non-flammable, non-poisonous compressed gas in paragraph (b) of this section.

(h) Flammable range. The term flammable range means the difference between the minimum and maximum volume percentages of the material in air that forms a flammable mixture.

(i) Service pressure. The term service pressure means the authorized pressure marking on the packaging. For example, for a cylinder marked “DOT 3A1800”, the service pressure is 12410 kPa (1800 psig).

(j) Refrigerant gas or Dispersant gas. The terms Refrigerant gas and Dispersant gas apply to all nonpoisonous refrigerant gases; dispersant gases (fluorocarbons) listed in §172.101 of this subchapter and §§173.304, 173.314(c), 173.315(a), and 173.315(h) and mixtures thereof; and any other compressed gas having a vapor pressure not exceeding 260 psia at 54 °C(130 °F), used only as a refrigerant, dispersant, or blowing agent.

(k) The following applies to aerosols (see §171.8 of this subchapter):

(1) An aerosol must be assigned to Division 2.1 if the contents include 85% by mass or more flammable components and the chemical heat of combustion is 30 kJ/g or more;

(2) An aerosol must be assigned to Division 2.2 if the contents contain 1% by mass or less flammable components and the heat of combustion is less than 20 kJ/g.

(3) Aerosols not meeting the provisions of paragraphs (a) or (b) of this section must be classed in accordance with the appropriate tests of the UN Manual of Tests and Criteria (IBR, see §171.7 of this subchapter). An aerosol which was tested in accordance with the requirements of this subchapter in effect on December 31, 2005 is not required to be retested.

(4) Division 2.3 gases may not be transported in an aerosol container.

(5) When the contents are classified as Division 6.1 or Class 8, PG III, the aerosol must be assigned a subsidiary hazard of Division 6.1 or Class 8.

(6) Substances of Division 6.1, PG I or II, and substances of Class 8, PG I are forbidden from transportation in an aerosol container.

(7) Flammable components are Class 3 flammable liquids, Class 4.1 flammable solids, or Division 2.1 flammable gases. The chemical heat of combustion must be determined in accordance
with the UN Manual of Tests and Criteria (IBR, see §171.7 of this subchapter).


§ 173.116 Class 2—Assignment of hazard zone.

(a) The hazard zone of a Class 2, Division 2.3 material is assigned in column 7 of the §172.101 table. There are no hazard zones for Divisions 2.1 and 2.2. When the §172.101 table provides more than one hazard zone for a Division 2.3 material, or indicates that the hazard zone be determined on the basis of the grouping criteria for Division 2.3, the hazard zone shall be determined by applying the following criteria:

<table>
<thead>
<tr>
<th>Hazard zone</th>
<th>Inhalation toxicity</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>LC₅₀ less than or equal to 200 ppm.</td>
</tr>
<tr>
<td>B</td>
<td>LC₅₀ greater than 200 ppm and less than or equal to 1000 ppm.</td>
</tr>
<tr>
<td>C</td>
<td>LC₅₀ greater than 1000 ppm and less than or equal to 3000 ppm.</td>
</tr>
<tr>
<td>D</td>
<td>LC₅₀ greater than 3000 ppm or less than or equal to 5000 ppm.</td>
</tr>
</tbody>
</table>

(b) The criteria specified in paragraph (a) of this section are represented graphically in §173.133, Figure 1.


§§ 173.117–173.119 [Reserved]

§ 173.120 Class 3—Definitions.

(a) Flammable liquid. For the purpose of this subchapter, a flammable liquid (Class 3) means a liquid having a flash point of not more than 60.5 °C (141 °F) or higher, that make up at least 99 percent of the total volume of the mixture, if the mixture is not offered for transportation or transported at or above its flash point.

(b) Combustible liquid. (1) For the purpose of this subchapter, a combustible liquid means any liquid that does not meet the definition of any other hazard class specified in this subchapter and has a flash point above 60.5 °C (141 °F) and below 93 °C (200 °F).

(c) Flash point. (1) Flash point means the minimum temperature at which a