

## Abstracts from Regulations and Standards

### OSHA 29 CODE OF FEDERAL REGULATION

#### ■ 1910.106(a)(5)

Boiling point shall mean the boiling point of a liquid at a pressure of 14.7 pounds per square inch absolute (p.s.i.a.) (760 mm.). Where an accurate boiling point is unavailable for the material in question, or for mixtures which do not have a constant boiling point, for purposes of this section the 10 percent point of a distillation performed in accordance with the Standard Method of Test for Distillation of Petroleum Products, ASTM D-86-62, which is incorporated by reference as specified in Sec. 1940.6, may be used as the boiling point of the liquid.

#### ■ 1910.106(a)(12)

Fire area shall mean an area of a building separated from the remainder of the building by construction having a fire resistance of at least 1 hour and having all communicating openings properly protected by an assembly having a fire resistance rating of at least 1 hour.

#### ■ 1910.106(a)(14)

"Flashpoint" means the minimum temperature at which a liquid gives off vapor within a test vessel in sufficient concentration to form an ignitable mixture with air near the surface of the liquid, and shall be determined as follows:

(i) For a liquid which has a viscosity of less than 45 SUS at 100 deg. F. (37.8 deg. C.), does not contain suspended solids, and does not have a tendency to form a surface film while under test, the procedure specified in the Standard Method of Test for Flashpoint by Tag Closed Tester (ASTM D-56-70), which is incorporated by reference as specified in Sec. 1910.6, shall be used.

(ii.) For a liquid which has a viscosity of 45 SUS or more at 100 deg. F. (37.8 deg. C.) or contains suspended solids, or has a tendency to form a surface film while under test, the Standard Method of Test for Flashpoint by Pensky-Martens Closed Tester (ASTM D-93-71) shall be used, except that the methods specified in Note 1 to section 1.1 of ASTM D-93-71 may be used for the respective materials specified in the Note. The preceding ASTM standards are incorporated by reference as specified in Sec. 1910.6.

(iii) For a liquid that is a mixture of compounds that have different volatilities and flashpoints, its flashpoint shall be determined by using the procedure specified in paragraph (a)(14) (i) or (ii) of this section on the liquid in the form it is shipped. If the flashpoint, as determined by this test, is 100 deg. F. (37.8 deg. C.), or higher, an additional flashpoint determination shall be run on a sample of the liquid evaporated to 90 percent of its original volume, and the lower value of the two tests shall be considered the flashpoint of the material.

(iv) Organic peroxides, which undergo auto accelerating thermal decomposition, are excluded from any of the flashpoint determination methods specified in this subparagraph.

#### ■ 1910.106(a)(18)

"Combustible liquid" means any liquid having a flashpoint at or above 100 deg. F. (37.8 deg. C.) Combustible liquids shall be divided into two classes as follows:

(i) "Class II liquids" shall include those with flashpoints at or above 100 deg. F. (37.8 deg. C.), and below 140 deg. F. (60 deg. C.), except any mixture having the components with flashpoints of 200 deg. F. (93.3 deg. C.) or higher, the volume of which make up 99 percent or more of the total volume of the mixture.

(ii) "Class III liquids" shall include those with flashpoints at or above 140 deg. F. (60 deg. C.). Class III liquids are subdivided into two subclasses:

(ii)(a) "Class IIIA liquids" shall include those with flashpoints at or above 140 deg. F. (60 deg. C.) and below 200 deg. F. (93.3 deg. C.), except any mixture having components with flashpoints of 200 deg. F. (93.3 deg. C.), or higher, the total volume of which make up 99 percent or more of the total volume of the mixture.

(ii)(b) "Class IIIB liquids" shall include those with flashpoints at or above 200 deg. F. (93.3 deg. C.). This section does not cover Class IIIB liquids. Where the term "Class III liquids" is used in this section, it shall mean only Class IIIA liquids.

(iii) When a combustible liquid is heated for use to within 30 deg. F. (16.7 deg. C.) of its flashpoint, it shall be handled in accordance with the requirements for the next lower class of liquids.

#### ■ 1910.106(a)(19)

"Flammable liquid" means any liquid having a flashpoint below 100 deg. F. (37.8 deg. C.), except any mixture having components with flashpoints of 100 deg. F. (37.8 deg. C.) or higher, the total of which make up 99 percent or more of the total volume of the mixture. Flammable liquids shall be known as Class I liquids.

Class I liquids are divided into three classes as follows:

(i) Class IA shall include liquids having flashpoints below 73 deg. F. (22.8 deg. C.) and having a boiling point below 100 deg. F. (37.8 deg. C.).

(ii) Class IB shall include liquids having flashpoints below 73 deg. F. (22.8 deg. C.) and having a boiling point at or above 100 deg. F. (37.8 deg. C.).

(iii) Class IC shall include liquids having flashpoints at or above 73 deg. F. (22.8 deg. C.) and below 100 deg. F. (37.8 deg. C.).

#### ■ 1910.106(a)(35)

Approved unless otherwise indicated, approved, or listed by a nationally recognized testing laboratory. Refer to 1910.7 for definition of nationally recognized testing laboratory.

#### ■ 1910.106(d)

"Container and portable tank storage" –

(i) "General" This paragraph shall apply only to the storage of flammable or combustible liquids in drums or other containers (including flammable aerosols, not exceeding 60 gallons individual capacity and those portable tanks not exceeding 660 gallons individual capacity).

(ii) "Exceptions" This paragraph shall not apply to the following:

(ii)(a) Storage of containers in bulk plants, service stations, refineries, chemical plants, and distilleries;

(ii)(b) Class I or Class II liquids in the fuel tanks of a motor vehicle, aircraft, boat, or portable or stationary engine;

(ii)(c) Flammable or combustible paints, oils,

varnishes, and similar mixtures used for painting or maintenance when not kept for a period in excess of 30 days;

(ii)(d) Beverages when packaged in individual containers not exceeding 1 gallon in size.

#### ■ OSHA 29 CFR 1910.106(e)(2)(iii):

Separation and protection. Areas in which flammable or combustible liquids are transferred from one tank or container to another container shall be separated from other operations in the building by adequate distance or by construction having adequate fire resistance. Drainage or other means shall be provided to control spills. Adequate natural or mechanical ventilation shall be provided.

#### ■ OSHA 29 CFR 1910.106(d)(4)(v):

Storage in inside storage rooms. In every inside storage room there shall be maintained one clear aisle at least 3 feet wide. Containers over 30 gallons capacity shall not be stacked one upon the other. Dispensing shall be by approved pump or self-closing faucet only.

#### ■ OSHA 29 CFR 1910.106(e)(2)(iv)(d):

Flammable or combustible liquids shall be drawn from or transferred into vessels, containers, or portable tanks within a building only through a closed piping system, from safety cans, by means of a device drawing through the top, or from a container or portable tanks by gravity through an approved self-closing valve. Transferring by means of air pressure on the container or portable tanks shall be prohibited.

#### ■ OSHA 29 CFR 1910.106(d)(2)(ii):

Emergency venting. Each portable tank shall be provided with one or more devices installed in the top with sufficient emergency venting capacity to limit internal pressure under fire exposure conditions to 10 psig, or 30 percent of the bursting pressure of the tank, whichever is greater. The total venting capacity shall be not less than that specified in paragraphs (b)(2)(v)(c) or (e) of this section. At least one pressure-activated vent having a minimum capacity of 6,000 cubic feet of free air (14.7 psia and 60°F) shall be used. It shall be set to open at not less than 5 psig. If fusible vents are used, they shall be actuated by elements that operate at a temperature not exceeding 300°F.

#### ■ OSHA 29 CFR 1910.106(e)(6)(ii):

Grounding. Class I liquids shall not be dispensed into containers unless the nozzle and container are electrically interconnected. Where the metallic floorplate on which the container stands while filling is electrically connected to the fill stem or where the fill stem is bonded to the container during filling operations by means of a bond wire, the provisions of this section shall be deemed to have been complied with.

#### ■ OSHA 29 CFR 1910.106(e)(2)(ii)(b): Incidental storage or use of flammable and combustible liquids.

(b) The quantity of liquid that may be located outside of an inside storage room or storage cabinet in a building or in any one fire area of a building shall not exceed:

(1) 25 gallons of Class IA liquids in containers