

Flammable liquids are present in nearly every workplace. Gasoline, diesel fuel, and many common products like solvents, thinners, cleaners, adhesives, paints, and polishes may be flammable. Flammable liquid containers are used to limit the fuel that is available to start or feed a fire. A key to avoiding catastrophic losses involving these liquids is to prevent their involvement in a fire through use of approved equipment and handling practices.

Update: It is important to note that in 2012, in response to OSHA's revised Hazard Communication standard (Globally Harmonized System [GHS]), OSHA revised their standard 1910.106. The standard has been changed from "Flammable and Combustible Liquids" to "Flammable Liquids." One significant change is the revised regulation lists liquids as "categories" rather than "classes."

(per OSHA 1910.106): A liquid with a flashpoint at or below 199.4° F. (93° C). Flammable liquids are divided into four (4) categories:

Category	Flashpoint	Boiling Point	Example
1	< 73.4° F (23° C)	< 73.4° F (23° C)	Ethyl ether, heptane, pentane, propylene oxide, vinyl chloride
2	< 73.4° F (23° C)	> 95° F (35° C)	Acetone, ethanol, gasoline, isopropyl alcohol, methano
3	> 73.4° F (23° C) and < 140° F (60° C)		Isobutyl alcohol, mineral spirits, turpentine, diesel fuel, motor oil, kerosene
4	> 140° F (60° C) and < 199.4° F (93° C)		Furfural, linseed oil, mineral oil, oil based paints, ethylene glycol, glycerine



Flammable Liquid Storage

- The flashpoint and boiling point together, determine how substances are stored. This would include container capacity, spacing, and maximum amount per location.
- The H-Tables in 1910.106 help you determine storage limits, allowable sizes of containers, and more...

(Table H-12 Maximum Allowable Size of Containers and Portable Tanks for Flammable Liquids)

Container type	Category 1	Category 2	Category 3	Category 4
Glass or approved plastic	1 pt.	1 qt.	1 gal.	1 gal.
Metal (other than DOT drums)	1 gal.	5 gal.	5 gal.	5 gal.
Safety cans	2 gal.	5 gal.	5 gal.	5 gal.
Metal drums (DOT specifications)	60 gal.	60 gal.	60 gal.	60 gal.
Approved portable tanks	660 gal.	660 gal.	660 gal.	660 gal.

Note: Container exemptions: (a) Medicines, beverages, foodstuffs, cosmetics, and other common consumer items, when packaged according to commonly accepted practices, shall be exempt from the requirements of 1910.106(d)(2)(i) and (ii).

Construction of Cabinet

Flammable liquids should be stored in safety containers specifically built for handling these types of liquids. These containers are made with solid construction designed to prevent leaking when bumped or dropped; pressure relief areas and spark arrestors prevent the containers from exploding caused by fire.



Type I storage containers have one opening and are intended to pour and fill from the same opening. These are best used when dispensing liquids into vessels with a relatively large opening



Type II storage containers have two openings, one for pouring and one for filling and venting. These containers are designed for more accurate pouring and usually feature a flexible hose to dispense through

There are also containers used for the disposal of solvent soaked rags. If not properly disposed of these soaked rags can spontaneously combust. This is where the rags undergo a chemical reaction that can generate enough heat to cause a fire.



Oily Waste Can



Plunger Can



Disposal Can



Bench Can



Swab Pail

These types of containers improve safety because they reduce the potential for spills, limit vapor release, and limit exposed surface area. They can also decrease the amount of flammable liquid lost due to evaporation. The type of safety container chosen for use should be listed or approved by an independent testing lab such as "UL."

Safety Container Maintenance

- Flammable storage containers require regular inspection. Things that should be inspected are:
 - Self-closing covers to make sure they fully close when released
 - Flame arrestors for damage or holes
 - Check seals around spouts and any openings
 - Look for dents, cracks, or corrosion that could compromise the container.

References

- OSHA standard is 29 CFR 1910.106–Flammable Liquids

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