

Flammable and Combustible Liquids

I. General

A flammable material is any liquid, solid or gas that will ignite easily and burn rapidly. Materials that are flammable are of concern due to their ability to render damage to property and more importantly, to injure or cause death of workers. The storage, issue, use and disposal of flammable and combustible liquids falls under the rules and regulations promulgated under OSHA, the National Fire Protection Association (NFPA) and JSNN policy.

II. Responsibility

All users of flammable and combustible material must follow this section

II. Classification of Flammable and Combustible Liquids

"Flammable liquid" refers to any liquid having a flash point at or below 93 °C (199.4 °F).

"Combustible liquid" refers to any liquid having a flash point above 93 °C

Containers for flammable and combustible liquids shall not exceed the maximum capacities listed in the OSHA standards shown below. Follow the size limitations for containers to prevent ignition of flammable liquids by sparks from static discharge during pouring operations.

Maximum Capacity of Containers for Flammable and Combustible Liquids

Container Liquids Type	Flammable Liquids			Combustible	
Container Type	Class 1A	Class 1B	Class 1C	Class II	Class III
Glass or approved plastic*	1 pt	1 qt	1.1 gal	1.1 gal	5 gal
Metal	1.1 gal	5 gal	5 gal	5 gal	5 gal
Safety Cans	2.6 gal	5 gal	5 gal	5 gal	5 gal

*Approved means approved or listed by either Underwriter's Laboratories or Factory Mutual Engineering Corporation.

Exception No. 1: Glass containers as large as 1.1 gal shall be permitted to be used if needed and if the required purity would be adversely affected by storage in a metal or an approved plastic container, or if the liquid would cause excessive corrosion or degradation of a metal or an approved plastic container.

Maximum Quantities of Flammable and Combustible Liquids Permitted Outside of Storage Cabinets as Indicated By Type of Space

Maximum Total Quantities		
Types of Space and Containers	Class I and II Liquids Combined	Class III Liquid
Laboratory (instructional or research) (Liquids in containers per Table 1) Glass, approved plastic, or metal safety can	5 gal 10 gal	10 gal 20 gal
Printing Operations (Dept and similar size activities) (Liquids in containers per Table 1)	3 gal 5 gal	5 gal 10 gal
Glass, approved plastic, or metal safety can		
Shop (Departmental, instructional and similar size) (Liquids in containers per Table 1) Glass, approved plastic, or metal safety can	5 gal 10 gal	10 gal 20 gal

If quantities of flammable or combustible liquids are required more than the quantities shown in Table 2, then storage cabinets must accommodate these excess quantities.

III. Storage Outside Building

Storage of flammables and combustible liquids outside of buildings shall be only in accord with the detailed and specific requirements of OSHA and State Fire Code, as to capacity, location, construction, spill containment, security, and fire control.

IV. Pouring and Transfer of Liquids

To avoid sparks from the discharge of static electricity during pouring operations of Class I and Class II liquids, the storage containers and the container being filled must be bonded and grounded. Bonding is the provision of an electrical path between the storage container and the container being filled. Grounding is provided by an electrical path from the storage container to an earth ground.

V. Construction and Capacity of Storage Cabinet

Storage cabinets for flammable and combustible liquids shall be either metal or wood construction. Their design and construction are to limit the internal temperature to not

more than 325 when subjected to a 10-minute fire test using the standard time/temperature curve as set in the Standard Methods of Fire Tests of Building Construction and Materials: NFPA 251-1969. All joints and seams shall remain tight and the door shall remain securely closed during the fire test. Construction shall be in accordance with detailed OSHA requirements (1910.106(d)(3)).

The following is the maximum size capacity for storage cabinets of flammable and combustible liquids:

Maximum Capacities of Storage Cabinets in various Locations

Laboratories	45 gals
Printing Operations	30 gals
Shops	45 gals

The total quantity of flammable and combustible liquids in a laboratory, cabinets. There shall be no more than one 45-gallon capacity storage cabinet or two 30 gallon capacity storage cabinets in any one room. Label storage cabinets with conspicuous lettering "Flammable-Keep Fire Away." Post "No Smoking" signs in the room and on the entrance d