Flammable Liquids Storage Cabinets

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Significant fire or explosion hazard

Only a small quantity of flammable liquids is necessary to create a significant fire or explosion. Use of approved flammable liquids storage cabinets is encouraged to help reduce the hazard.

The storage requirements of flammable and combustible liquids in containers will vary depending upon the type of occupancy, the liquids classification, and the container size and construction.

Definitions

Flammable or Class I liquids are those having a flash point below 100 degrees F and a vapor pressure not exceeding 40 psia at 100 degrees F. Class I liquids are classified as follows:

Class IA Flash point below 73 degrees F and boiling point below 100 degrees F

Class IB Flash point below 73 degrees F and boiling point at or above 100 degrees F

Class IC Flash point at or above 73 degrees F and below 100 degrees F

Combustible liquids are those having a flash point at or above 100 degrees F. Combustible liquids are classified as follows:

Class II Flashpoint at or above 100 degrees F and below 140 degrees F

Class IIIA Flashpoint at or above 140 degrees F and below 200 degrees F

Class IIIB Flashpoint at or above 200 degrees F

Approved flammable liquids cabinet

Cabinets that are UL listed or FM approved or that otherwise meet NFPA 30, Flammable and Combustible Liquids Code, requirements for construction.

Control area

A building or portion of a building within which flammable and combustible liquids are allowed to be stored, dispensed, and used or handled in quantities that do not exceed the maximum allowable quantity (MAQ), based upon the type of occupancy.

Maximum Allowable Quantity (MAQ)

The quantity of flammable and combustible liquids permitted within a control area is based upon the classification of the liquids, the type of occupancy, if stored within or outside of an approved cabinet, and if the control area is protected by automatic fire sprinklers.

Quantities that exceed the MAQ trigger more stringent requirements and should be stored within an approved flammable liquids storage room or otherwise meet NFPA 30 special requirements.

Flammable and combustible liquids cabinet construction

Construction features for storage cabinets are defined by NFPA 30. Commercially available UL listed or FM approved cabinets are recommended and come in a variety of sizes. These cabinets are designed to limit the internal temperature for a 10 minute period or the cabinet is to utilize double-walled #18 gauge steel construction and a 3-point door locking mechanism. Most commercially made cabinets have a liquid tight spill control sill to retain spilled liquid inside.

The following guidelines should be employed for storage of liquids in cabinets:

- Use of a flammable liquids storage cabinet is generally advisable when 20 or more gallons of flammable liquids in containers are lying about. It is best to store all flammable and combustible liquids in an approved cabinet when not in use.
- Use only approved safety containers to carry, dispense or store liquids. Keep containers closed to prevent escaping vapors and to reduce the potential for spills. Make sure containers are properly labeled to identify the hazard.
- Flammable (Class I liquids) should not be stored in basements.
- It is acceptable to store aerosol cans in the cabinet with flammable liquids.

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- Do not store incompatible chemicals (such as oxidizers, peroxides, acids etc.) within the flammable liquids storage cabinet as if a container leaks, it could result in a chemical reaction which could lead to fire or become a health hazard.
- Cabinet doors should be kept closed and latched.
- Each cabinet should be conspicuously labeled "FLAMMABLE-KEEP FIRE AWAY".
- Vents are provided on most cabinets, but their use is not required. If vented, flame arrestors should be provided in the openings and the vent piping should be extended to discharge vapors to a safe location outside the building. Otherwise the vents should be kept closed with bung caps to prevent flammable vapors from escaping into the room.
- Make sure the quantity of liquids per cabinet and the aggregate quantity of liquids in the control area does not exceed the Maximum Allowable Quantity.
- Liquids storage and storage cabinets should never be located such that it obstructs an exit or exit path, or creates a hazard to the occupants of the premises.

General Occupancy MAQ Limits for Flammable and Combustible Liquids*

		Quantity			
		Maximum Allowed Quantity per Control Area	Permissible Quantity per "Approved Cabinet"	Aggregate Quantity in "Approved Cabinet(s)"	If Both in "Approved Cabinets" and in a Sprinklered Area**
	Class of Liquid	**Gallons**			
Flammable Liquids	IA	30	60	60	90
	IB and IC	120	120	240	360
	IA, IB, IC combined***	120	120	240	360
Combustible Liquids	II	120	120	240	360
	IIIA	330	120	660	990
	IIIB	13,200	No Limit	64,400	No Limit

**General Occupancies include industrial occupancies, but do not include mercantile or storage occupancies (refer to NFPA 30).*
***Permissible only in buildings equipped throughout with an automatic sprinkler system installed in accordance with NFPA 13,* Standard for the Installation of Sprinkler Systems.
****Quantity cannot contain more than the maximum allowable quantity per control area of Class IA, Class IB, or Class IC flammable liquids, individually.*

Special Occupancy MAQ Limits for Flammable and Combustible Liquids*

		Quantity		
		Maximum Allowed Quantity per Control Area	Permissible Quantity per "Approved Cabinet"	Aggregate Quantity in "Approved Cabinet(s)"
	Class of Liquid	**Gallons**		
Flammable Liquids	I	10	120	180
Combustible Liquids	II	10	120	180
	IIIA	60	120	180
	IIIB	120	120	No Limit**

**Special Occupancies include: Assembly, Business, Day Care, Detention & Correctional, Educational, Healthcare and Residential occupancies.*
*** For ambulatory health care, day care, educational, and health care occupancies, the MAQ is 180 gallons unless the building is protected throughout with an automatic sprinkler system installed in accordance with NFPA 13,* Standard for the Installation of Sprinkler Systems.

Reference: NFPA 30 – Standard for Flammable and Combustible Liquids Code

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