

SUPPLEMENT #1

Classification of Flammable and Combustible Liquids

FLAMMABLE LIQUIDS

“Class I” FLAMMABLE LIQUID refers to any liquid having a flash point below 100°F and is subdivided into three classes with some examples listed below:

Class IA Flash point below 73 F, boiling point below 100 F

| | | |
|----------------|---------------------|--------------------|
| acetaldehyde | ethyl chloride | methyl ethyl ether |
| collodion | ethyl ether | pentane |
| chloroethane | diethyl ethyl ether | pentene |
| ethylamine | furfuran | petroleum ether |
| ethylene oxide | isopropyl chloride | propylene oxide |

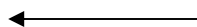
Must ALWAYS be stored in approved* flammable storage cabinet –regardless of amount



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

| | | |
|---------------|-------------------------------|---------------------|
| acetone | dichloroethane | isopropyl alcohol |
| acrolein | ethyl acetate | methyl alcohol |
| acrylonitrile | ethyl alcohol | methyl ethyl ketone |
| acetonitrile | ethylene glycol dimethylether | methylcyclohexane |
| benzene | gasoline | tetrahydrofuran |
| butyl alcohol | hexane | toluene |

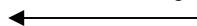
Should be stored in approved* flammable storage cabinet . Containers > 4 gal MUST be stored in approved* flammables cabinet.or solvent storage room.



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

| | | |
|---------------|--------------|------------|
| amyl acetate | chlorohexane | styrene |
| amyl alcohol | naptha | turpentine |
| dibutyl ether | | xylene |

Should be stored in approved* flammable storage cabinet or container. > 4 gal MUST be stored in flammables cabinet or solvent storage room.



COMBUSTIBLE LIQUIDS

"Combustible liquid" refers to any liquid having a flash point at or above 100°F and are subdivided as follows:

Class II Flash point at or above 100 F and below 140 F

| | | |
|-----------------------|-----------------|-----------------|
| acetic acid (glacial) | fuel oil no. 44 | mineral spirits |
| camphor oil | methyl lactate | varsol |
| cyclohexane | hydrazine | kerosene |

Class IIIA Flash point at or above 140 F and below 200 F

| | | |
|---------------|------------------|--------------|
| aniline | dichlorobenzene | naphthalenes |
| benzaldehyde | formic acid | phenol |
| carbolic acid | furfuryl alcohol | pine oil |

***Note:**

An approved flammable storage cabinet is one which has self-closing doors and is in compliance with OSHA 29 CFR 1910.106(d)(3), NFPA 30, and UFC 79.

Classification of Flammable and Combustible Liquids (CONTINUED)

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
TABLE 1

| Container Liquids Type | Flammable Liquids | | | Combustible | |
|-----------------------------|-------------------|----------|----------|-------------|-----------|
| | Class 1A | Class 1B | Class 1C | Class II | Class III |
| Container Type | | | | | |
| Glass or approved plastic * | 1 pt | 1 qt | 1.1 gal | 1.1 gal | 5 gal |
| ** Exception No. 1 Glass | 1 gal | 1 gal | 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.

TABLE 2

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

| Maximum Total Quantities | | | |
|---|-----------------------|-----------------|---------------------------|
| Types of Space and Containers | Room Size | Class I Liquids | Class I, II, III Combined |
| Laboratory (instructional) (Liquids in containers per Table 1) Glass, approved plastic, or metal safety can | > 600 ft ² | 6 gal | 10 gal |
| Laboratory (research) (Liquids in containers per Table 1) Glass, approved plastic, or metal safety can | < 600 ft ² | 6 gal | 12 gal |
| | > 600 ft ² | 10 gal | 20 gal |
| Shop (Departmental, instructional and similar size) (Liquids in containers per Table 1) Glass, approved plastic, or metal safety can | > 600 ft ² | 10 gal | 20 gal |

*Note: Quantity limits are for rooms without sprinklers. (NFPA 45)