

UNIVERSITY OF HAWAII AT MANOA

REQUIREMENTS FOR STORAGE AND HANDLING OF
FLAMMABLE AND COMBUSTIBLE LIQUIDS



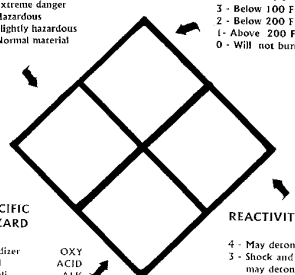
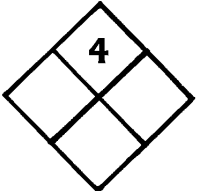
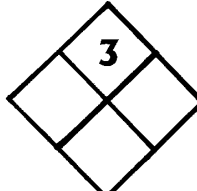
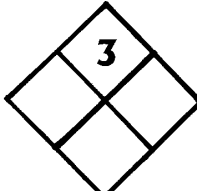
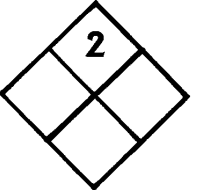
STORAGE REQUIREMENTS

- 1 Flammable and/or combustible liquids stored in the open in a laboratory work area or inside any building shall be kept to the minimum necessary for the work being done.
- 2 Maximum quantity permitted in labs and other areas of use is limited to a total of 10 gallons, all classifications combined, outside of a flammable storage cabinet or approved flammable storage room. Please refer to Table 1.
- 3 Quantities stored in flammable storage cabinets shall be limited to 60 gallons of class I or II liquids and the total of all liquids shall not exceed 120 gallons. Please refer to Table 1 for maximum allowable container size for each class. Not more than three cabinets shall be located in the same fire area.
- 4 Quantities exceeding the above must be stored in an approved flammable storage room meeting the requirements of the Uniform Building and Fire Codes.
- 5 Flammable and combustible liquids shall not be stored near exit doorways, stairways, in exit corridors, or in a location that would impede egress from the building.
- 6 Flammable aerosols and unstable liquids shall be treated as class I-A liquids. Please refer to Table 1.
- 7 Materials which will react with water or other liquids to produce a hazard shall be segregated from flammable and/or combustible liquids.

HANDLING AND DISPENSING

- 1 Class I liquids shall not be transferred from one vessel to another in any exit passageway.
- 2 Transfer of flammable liquids from 5 gallon containers (or less) to smaller containers shall be done in a laboratory fume hood or in an approved flammable liquid storage room.
- 3 Empty containers shall be treated in the following manner:
 - a) For water soluble solvents ☞ rinse, deface label, and dispose with normal trash.
 - b) For non-water soluble solvents ☞ allow to evaporate to dryness in a hood, rinse, deface label, and dispose with normal trash.

TABLE 1

CLASS	IA	IB	IC	II
Flash point	less than 73°F	less than 73°F	73° - 100° F	100° - 140°F
Boiling point	less than 100°F	greater than 100°F		
Flammability Potential	Extremely High	Very High	High	Moderate
EXAMPLES OF COMMONLY USED MATERIALS	acetaldehyde benzoyl peroxide ethyl ether pentane methyl formate	acetone ethanol butylamine gasoline methanol isopropanol	amyl acetate butanol chlorobenzene turpentine xylene	formaldehyde hydrazine kerosene
<p>NFPA 704 HAZARD RATINGS*</p> <p>HEALTH HAZARD</p> <p>4 - Death 3 - Extreme danger 2 - Hazardous 1 - Slightly hazardous 0 - Normal material</p> <p>FIRE HAZARD Flash Points</p> <p>4 - Below 73 F 3 - Below 100 F 2 - Below 200 F 1 - Above 200 F 0 - Will not burn</p> <p>SPECIFIC HAZARD</p> <p>Oxidizer OXY Acid ACID Alkali ALK Corrosive COR Use NO WATER  Radiation hazard </p> <p>REACTIVITY</p> <p>4 - May detonate 3 - Shock and heat may detonate 2 - Violent chemical change 1 - Unstable if heated 0 - Stable</p> 				
<p>MAXIMUM CONTAINER SIZE</p> <p>Glass</p>	1 pint (500 ml)	1 quart (1 liter)	1 gallon (4 liter)	1 gallon (4 liter)
Metal or approved plastic	1 gallon	5 gallon	5 gallon	5 gallon
Safety cans	2 gallon	5 gallon	5 gallon	5 gallon
Metal drums (DOT)	N/A	5 gallon	5 gallon	60 gallon

* NFPA is the acronym for the National Fire Protection Association. NFPA 704, *Standard System for the Identification of the Fire Hazards of Materials*, provides planning guidance to fire departments for safe tactical procedures in emergency operations, and gives on-the-spot information to safeguard the lives of fire fighting personnel and the others who may be exposed. The Hazard Identification System is not intended to identify the nonemergency health hazards of chemicals.