Specific gravity of flammable liquids is important in fire prevention planning to anticipate the behavior of hazardous materials where water or other liquids are present under fire conditions. Many flammable liquids with a specific gravity below 1 (lighter than water) are also insoluble in water. In the event of fire with such liquids present, water may be ineffective as an extinguishing agent.

Vapor pressure is the pressure exerted by vapor above the surface of a liquid in a closed container. It is caused by evaporation and is stabilized by confinement in a closed container to a pressure characteristic of a specific liquid. Vapor pressures of flammable liquids are an important consideration in fire prevention. They give the relative speed of evaporation: the higher the vapor pressure, the greater the evaporation rate and the more vapor escape potential every time a container is opened. Vapor pressure of liquids is below 40 pounds per square inch absolute, at 100°F (37.8°C), by definition. Materials with higher vapor pressure are considered gases at 100°F (37.8°C).

Boiling point of a liquid is the temperature of the liquid at which its vapor pressure equals the atmospheric pressure.

Vapor density, as commonly used in fire protection, is the weight of a volume of pure gas compared to the weight of an equal volume of dry air at the same temperature and pressure. A figure greater than 1 indicates that a gas is heavier than air. This means that any escaped vapors will settle downward onto floors and flow with air currents, around corners and down stairs or elevator shafts to pool in low spots. If the source liquid is open and a continuous supply of vapor is flowing, a spark anywhere along the vapor trail will set off an explosion and fire that may envelop an entire building almost instantly.

Definitions
Relating to Flammable Liquids Safety Procedures and Equipment

Approved: Unless otherwise indicated, approved or listed by at least one of the following nationally recognized testing laboratories: Underwriters Laboratories Inc., FM Global.

Bonding: Provision of metal to metal contact, usually by wire, between two containers to prevent generation of static electrical sparks.

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.

FM Global (FM): A nationally recognized independent testing laboratory established by the insurance industry to which manufacturers submit their products for evaluation of ability to meet safety requirements under intended use. Products meeting these requirements are "FM approved."

Grounding: Provision of contact between container and the earth, usually by wire, to prevent generation of static electric sparks.

Inside Liquid Storage Area: A room or building used for the storage of liquids in containers or portable tanks, separated from other types of occupancies.

Listed: Equipment, materials, or services included in a list published by an organization that is acceptable to the authority having jurisdiction and concern with the evaluation of products or services, that maintains periodic inspection of production of listed equipment or materials or periodic evaluation of services, and whose listing states that either the equipment, material, or service meets appropriate designated standards or has been tested and found suitable for a specified purpose.

Maximum Allowable Quantity (MAQ): For the purposes of NFPA 30, the quantity of flammable and combustible liquid permitted in a control area. See NFPA 30 Table 9.6.1.

NFPA Code 30: The code developed by NFPA to cover the safe storage and handling of flammable and combustible liquids.

OSHA 1910.106 Standards: Requirements established by the Department of Labor, Occupational Safety and Health Administration for conformance to the Occupational Safety and Health Act in 1970.

Spontaneous Combustion: Self-ignition resulting from a chemical reaction and temperature buildup in waste material.

Underwriters Laboratories (UL): A nationally recognized independent testing laboratory to which manufacturers submit their products for evaluation of ability to meet safety requirements under intended use. Products meeting requirements are "UL Listed."

MAQ of Flammable and Combustible Liquids per Control Area

	Liquid Class(es)	Quantity gal	Quantity L	Notes
Flammable liquids	IA	30	115	1,2
	IB & IC	120	460	1,2
	IA, IB, IC combined	120	460	1,2,3
Combustible liquids	II	120	460	1,2
	IIIA	330	1,265	1,2
	IIIB	13,200	50,600	1,4

Table 9.6.1 from NFPA 30, 2008 edition*
Source: Table 34.1.3.1 of NFPA 5000, 2006 edition.)
Notes:
(1) Quantities are permitted to be increased 100 percent where stored in approved flammable liquids storage cabinets or in safety cans in accordance with the fire code. Where Note 2 also applies, the increase for both notes is permitted to be applied accumulatively.
(2) Quantities are permitted to be increased 100 percent in buildings equipped throughout with an automatic sprinkler system installed in accordance with NFPA 13, *Standard for the Installation of Sprinkler Systems*. Where Note 1 also applies, the increase for both nots is permitted to be applied accumulatively.
(3) Containing not more than the maximum allowable quantity per control area of Class 1A, Class 1B, or Class 1C flammable liquids, individually.
(4) Quantities are not limited in a building equipped throughout with an automatic sprinkler system installed in accordance with NFPA 13, *Standard for the Installation of Sprinkler Systems*

*see page 39