

## Safety Cabinets for Compliant Safekeeping of Hazardous Liquids

Virtually every place of business has occasion to use flammable or combustible liquids. Whether it is a manufacturing or processing plant, laboratory, or commercial institution, fire risks can be reduced by storing hazardous liquids in flammable liquid safety storage cabinets.

Safety Cabinets serve several critical functions. First and foremost, they provide heat resistant enclosure of flammable liquid containers which helps protect both personnel and property from devastating fires. Cabinets help identify, organize, and segregate dangerous liquids. Often times they can be located near points-of-use, saving time and effort by eliminating frequent trips to a central storage room.

To clearly identify contents, safety cabinets include a visible warning label: "Flammable – Keep Fire Away." Labels that are reflective in nature offer an extra measure of safety. When illuminated with a flashlight during power outages or under smoky conditions, the reflective warning label bursts with high visibility, alerting firefighters or employees to the location of hazardous materials.

Lastly, safety cabinets improve security against unauthorized use of their potentially destructive contents. Justrite cabinets can be padlocked allowing security to be keyed different, keyed alike, or master keyed for employee convenience.

### Safety Cabinet Design

Construction and design requirements for safety cabinets are spelled out in NFPA 30, *Flammable and Combustible Liquids Code* and various OSHA regulations. Cabinets must be made of double-walled, 18 gauge (1 mm) steel with 1-1/2" (38mm) of insulating air space in the bottom, top, doors, and sides of the cabinet.

Additional requirements are that joints shall be welded, riveted, or made tight by some equally effective means and that the door shall be provided with a three-point latching arrangement. Further, the door sill shall be raised at least 2" (51 mm) above the bottom of the cabinet and be labeled "Flammable – Keep Fire Away."

In response to the criteria set forth by NFPA and OSHA, independent testing agencies such as FM and UL have established procedures to test the effectiveness of a flammable liquid storage cabinet. A cabinet is considered acceptable if the internal temperature is limited to not more than 325°F (163°C) when subjected to a 10-minute fire test using the standard time temperature curve as set forth in

NFPA 251, Standard Methods of Fire Resistance of Building Construction and Materials.

### Venting

Safety cabinets include dual vents with built-in flame arresters with bungs, typically located on the sides of a cabinet: one high and one low. However, NFPA 30 does not require a cabinet be ventilated for fire protection purposes. Further, the code states that if not vented, the vent openings should be sealed with the bungs provided. It goes on to say that if the cabinet is ventilated for any reason, it should be ducted directly to the outdoors in a manner that will not compromise the performance of the cabinet and that it is done in a manner that is acceptable to the authority having jurisdiction.

To determine if a cabinet should be vented, it is critical the local Fire Marshal/Fire Inspector be contacted for a determination based upon local or state regulations. Additional contacts could be made with the local EHS (Environmental Health and Safety) Officer, an Industrial Hygienist, the covering insurance company, or a corporate manager who is responsible for a company's overall safety directives.

### Seismic Protection

For earthquake or hurricane-prone regions, or simply where an added measure of stability is needed, a seismic bracket kit allows for either floor or wall mounting. A mounting kit that does not involve drilling into the cabinet is required so as to not violate the double-walled design, maintaining the fire protection properties of the cabinet and FM approval.

### Grounding

Although not required by federal regulations, steel safety cabinets include a built-in grounding lug, generally located at the bottom right side. For safe storage of flammables, it makes good safety sense to ground a cabinet when possible. If dispensing or collection processes are taking place within the cabinet, such as pumping out of a drum or pouring waste into a drum funnel, it is critical the cabinet be connected to an earth ground and proper bonding techniques between containers are followed.

