

Duquesne University

Environmental Health & Safety

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Guidelines: Flammable Chemical Storage in Laboratories

- For safety reasons, storage of flammable chemicals in the laboratory in designated cabinets and storage rooms should be kept at a minimum practical level at all times.
- The total volume of all combined flammable chemicals in one laboratory should not exceed 40 gallons:
 - In the laboratory work area, the flammable storage amount must not exceed 20 gallons, with a container size not exceeding the 5 gallon size drum.
 - In the flammable storage cabinets, amount stored is not to exceed 20 gallons.
- Excess flammable chemicals in containers up to 5 gallons and up to a total of 80 gallons may be stored in a designated flammable chemical storage room of the department.
- Bulk flammable chemicals in containers exceeding 5 gallons can only be stored in the flammable chemical storage room in the basement of Mellon Hall.

Definitions:

Flammable Chemical

The National Fire Protection Association (NFPA) Standard No.30, Section 1.7, defines a flammable liquid as a liquid whose flash point does not exceed 100 degrees F, when tested by closed-cup test methods. Common examples include the following:

Class IA – Diethyl Ether, Ethylene Oxide

Class IB – Motor and Aviation Gasoline, Toluene, Lacquers

Class IC – Xylene, some paints, some solvent-based cements

Class II – Diesel Fuel, Paint Thinner

Class IIIA – Home Heating Oil

Class IIIB – Cooking Oils, Lubricating Oils, Motor Oil

Designated Cabinet

A rated flammable storage cabinet is the recommended storage for flammable liquids. Under NFPA No.45, Section 2-1, the cabinet can be located anywhere within the laboratory unit. This means it cannot be located in a hallway or any means of egress.

Storage Room

NFPA No.30, Section 4-5.2, covers the specific requirements of a designated storage room for flammable chemicals. There are restrictions on container size, maximum storage height, and maximum total quantity stored.