



## Flammable Liquids

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A flammable liquid is defined by the National Fire Protection Agency (NFPA) as having a flashpoint below 100°F (37.8°C). The flashpoint is the lowest temperature at which a material can form an ignitable mixture with air and produce a flame when an ignition source is present. The lower the flashpoint, the more easily the liquid can be ignited.



### Personal Protective Equipment & Personnel Monitoring



**Lab Coat**

Standard lab coats are required. Flame resistant lab coats should be considered when handling flammable liquids and other hazardous materials that are easily ignited.



**Gloves**

Nitrile or neoprene gloves typically provide adequate protection against minor splashes. Consult with your PI or supervisor to determine whether any materials involved in your process require alternative hand protection.



**Eye Protection**

ANSI Z87.1 - Compliant safety glasses or safety goggles if a splash hazard is present.

### Labeling & Storage

1. Flammable liquids should be stored in a flammable storage cabinet with self-closing hinges or in a refrigerator/freezer rated for flammable storage. These refrigerators and freezers have a spark-proof interior that separates the contents from the compressor and motor, preventing ignition of flammable vapors inside the storage compartment. Storage of flammable liquids in refrigerators/freezers not specifically designed and approved for that use shall be strictly prohibited.
2. Flammable liquids should be kept away from oxidizers, and incompatible corrosives.
3. It is recommended the total amount of flammable and combustible liquids, including waste, in research laboratories shall not exceed the quantities presented below:
  - 20 gallons of flammable liquids per 100 ft<sup>2</sup> of laboratory unit.

- 120 gallons of flammable liquids in a single laboratory unit.
- Up to 35 gallons of flammable liquids outside flammable storage cabinet. Of this amount, 25 gallons must be contained in 2 gallon or smaller approved safety cans. Chemical quantities outside of storage shall be maintained at the lowest possible level necessary for the work performed.
- Quantities recommended within an instructional laboratory unit shall be limited to 50% of the quantities recommended for research laboratory units.

*These limitations vary; for an assessment, please contact the Office of Research Safety at 706-542-5288.*

## Engineering Controls, Equipment & Materials

**Fume Hood** It is advisable to use a fume hood when working with these materials. If the use of a fume hood is impossible or impractical, please contact the Office of Research Safety (ORS) to determine whether additional respiratory protection is required.

## Cautions & Considerations

**Static Electricity** When transferring flammable liquids between containers greater than 4L (1 gallon) containers should be grounded, and the source container should be bonded to the receiving container during transfer. If possible, transfer flammable chemicals from glass containers to glassware or from glass container/glassware to plastic. Transferring these types of chemicals between plastic containers or unbonded metal containers may lead to a fire hazard due to static electricity.

## Housekeeping

**Spills** Notify others in the area of the spill, including your supervisor. Evacuate the location where the spill occurred and call 911. Any exposure must be reported to ORS at 706-542-5288. Remain onsite at a safe distance to answer questions from first responders.

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**Decontamination** Decontamination methods vary based on the materials handled and equipment being used. Please review the chemical Safety Data Sheet for guidance on cleaning materials.

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Any waste from this chemical class should be disposed of through the UGA Hazardous Waste Program. For assistance with arranging a waste pickup, you may contact the Environmental Safety Division (ESD) at 706-542-5801. Prior to pick up, any container used to hold hazardous waste should be labeled with the following:

**Waste**

- “Hazardous Waste”,
- Chemical contents, and
- One or more of the following waste characteristics recognized by EPA: Ignitable, Corrosive, Reactive, or Toxic.

In addition, any liquid hazardous waste must be stored in secondary containment trays until picked up by ESD.

### First Aid & Emergencies

**Fire**

Use a Class B or CO<sup>2</sup> extinguisher to put out a small fire.

**Skin | Eye Contact**

Remove contaminated clothing and accessories; flush affected area with water.

If symptoms persist, get medical attention.

**Inhalation**

Move person into fresh air. If symptoms persist, get medical attention.

**Ingestion**

Rinse mouth with water. If symptoms persist, get medical attention.

### References

Prudent Practices in the Laboratory: Handling and Management of Chemical Hazards, National Research Council, 2011

NFPA 45: Standard on Fire Protection for Laboratories, National Fire Protection Agency, 2015

University of California – Center for Laboratory Safety