

## **SOP FOR FLAMMABLE LIQUIDS**

Flammable liquids are chemicals that have a flash point below 100°F (38.7°C)..

### **Securing of gas cylinders**

Not applicable.

### **Decontamination procedures**

Personnel: Wash hands and arms with soap and water immediately following any skin contact with flammable liquids.

### **Designated area**

Not applicable.

### **Emergency procedure**

Emergency procedures address response actions to fires, explosions, spills, or injury to staff. Utilize the information available in the “Emergency 13” flip chart. The following emergency phone numbers should be utilized to initiate an emergency response:

All emergencies:	x13 (Public Safety)
Chemical Exposures:	x5-4955 (UHS)
Laboratory Safety Unit	x5-2402
Occupational Safety Unit:	x5-3241
Environmental Compliance/Hazardous Waste	x5-2056
Radiation Safety Unit:	x5-3781

### **Eye Protection**

Eye protection in the form of safety glasses or goggles must be worn at all times when handling flammable liquids. Ordinary (street) prescription glasses do not provide adequate protection. (Contrary to popular opinion these glasses may not pass the rigorous test for industrial safety glasses.) Adequate safety glasses must meet the requirements of the current version of Practice for Occupational and Educational Eye and Face Protection (ANSI Z.87.1) and must be equipped with side shields. Safety glasses with side shields do not provide adequate protection from splashes, therefore, when the potential for splash hazard exists, other eye protection and/or face protection must be worn.

### **Eyewash**

Where the eyes of any person may be exposed to flammable liquids, suitable facilities for quick drenching or flushing of the eyes and body shall be provided within 50 feet for immediate emergency use. Bottle type eyewash stations are not acceptable.

### **Fume hood**

When possible, experiments involving greater than 500 mL of flammable liquids should be carried out in a fume hood.

### **Glove (dry) box**

Not applicable.

### **Gloves**

Gloves should be worn when handling flammable liquids. Many chemicals may permeate gloves in a short period of time. The selection of the proper glove material should be made according to the MSDS and the recommendations of the glove manufacturer.

### **Hazard assessment**

Hazard assessment for work involving flammable liquids should thoroughly address the issues of proper use and handling, fire safety, chemical toxicity, storage, and spill response.

### **EHS Notification**

Not applicable.

### **Clothing & Protective Apparel**

To prevent dermal exposure to these chemicals: A layer of clothing will help prevent splash and droplet exposures. Personnel should wear a long sleeve shirt and pants. A lab coat can also be recommended. Personnel should wear non-skid sole shoes. The following types of shoes are not recommended: open-toes shoes, open heeled shoes, shoes made with cotton or a material that readily absorbs liquids.

### **Safety shielding**

Safety shielding is required any time there is a risk of explosion, splash hazard or a highly exothermic reaction. All manipulations of flammable liquids that pose this risk should occur in a fume hood with the sash in the lowest feasible position. Portable shields, which provide protection to all laboratory occupants, are acceptable.

### **Safety shower**

A safety or drench shower should be available within 100 feet where flammable liquids are used. The path to the shower must be clear and unobstructed.

### **Signs and labels**

All flammable liquids must be clearly labeled with the correct chemical name and hazard warnings. Handwritten labels are acceptable; chemical formulas and structural formulas are not acceptable.

### **Special storage**

The storage of flammable liquids in a laboratory or laboratory support location must be kept to the minimum needed. If more than 10 gallons of flammable liquids are present outside of safety cans, a flammable-liquids storage cabinet is required. Flammable-liquids storage cabinets are not intended for the storage of highly toxic materials, acids, bases, compressed gases or pyrolytic chemicals.

Where feasible (if the quality of the solvent will not be affected) transfer flammable liquids from glass bottles to metal safety cans. Otherwise, use secondary containment containers to contain materials if breakage of the container occurs.

### **Special ventilation**

Manipulation of flammable liquids outside of a fume hood may require special ventilation controls in order to minimize exposure to the material. Fume hoods provide the best protection against exposure to flammable liquids in the laboratory and are the preferred ventilation control device. Always attempt to handle large quantities of flammable liquids in a fume hood. If your research does not permit the handling of large quantities of flammable liquids in a fume hood, contact the Laboratory Safety Unit to review the adequacy of all special ventilation.

### **Spill response**

Anticipate spills by having the appropriate clean up equipment on hand. The appropriate clean up supplies can be determined by consulting the safety data sheet. This should occur prior to the use of any flammable liquid. Spill supplies for flammable liquids are designed to minimize the production of flammable vapors. Never use paper towels on large spills of flammable liquids because it exacerbates vapor production.

In the event of a spill, alert personnel in the area that a spill has occurred. Do not attempt to handle a large spill of flammable liquid. Vacate the laboratory immediately and call Public Safety (x13) for a spill response. Remain on the scene, but at a safe distance, to receive and provide information to safety personnel when they arrive.

### **Vacuum protection**

Evacuated glassware can implode and eject flying glass, and splattered chemicals. Evacuated glassware can implode and eject flying glass, and splattered chemicals. This type of glassware must be wrapped or taped for protection.

Mechanical vacuum pumps must be protected using cold traps and, where appropriate, filtered to prevent particulate release. The exhaust for the pumps must be vented into an exhaust hood. Vacuum pumps should be rated for use with flammable liquids.

### **Waste disposal**

Some flammable liquids are hazardous waste. Wherever possible, attempt to design research in a manner that reduces the quantity of waste generated. Questions regarding waste pick up should be directed to the Environmental Compliance /Hazardous Waste Management Unit (x5-2056). This office can also assist you in minimizing waste generation.