




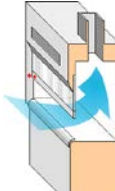












Duke OESO Guidelines for Safe Use of FLAMMABLE LIQUIDS



Examples: Ethanol, Isopropanol, Methanol, Acetone, n-Hexane, Pentane

Hazard Controls	Hazards	<ul style="list-style-type: none"> Vapors can produce fire and explosion if ignited. Some flammable solvents can affect health. See Toxic Liquids guidelines for  or . See Safety Data Sheet (SDS) for specific hazard information. <i>A lab-specific SOP is needed for particularly hazardous chemicals (e.g., Acrolein, Benzene).</i>
	Potential Hazards	
	Selection & Purchase	<ul style="list-style-type: none"> Purchase the smallest containers at the lowest concentration practical. Purchase in shatter-resistant containers if available (such as PVC-coated glass).
	Storage & Transportation	<ul style="list-style-type: none"> Store away from oxidizers. See SDS for other storage incompatibilities. Store in a flammables cabinet if possible. No more than 10 gallons outside approved flammable storage cabinets. Do NOT store in a standard refrigerator or cold room. Store below eye level but not on the floor. Storage must not inhibit safe egress. Consult OESO Fire Safety if you have large amounts. Transport in a bottle carrier.   
	Engineering Controls	<p>Work in a chemical fume hood if:</p> <ul style="list-style-type: none"> The chemical is irritating to the eyes or respiratory system, or hazardous by inhalation. Air concentrations could reach or exceed 10% of the lower flammable limit. 
	Work Practice Controls	<ul style="list-style-type: none"> Know the location of the nearest fire extinguisher. Use the smallest practical quantities for the work being performed. Avoid using near sources of ignition or static electricity. Ensure proper grounding. Be sure to ground metal containers when transferring flammable liquids. Close containers of flammable chemicals when not in use to prevent vapor escape.  
Personal Protective Equipment (PPE)	<p>Minimum PPE:</p> <ul style="list-style-type: none"> Fastened lab coat, safety glasses, and nitrile gloves <p>For risk of splash or if using large amounts:</p> <ul style="list-style-type: none"> Chemical splash goggles and face shield Flame-resistant lab coat Avoid wearing flammable clothing (such as many synthetics)       <p><i>Consult the manufacturer's glove guide for glove effectiveness with the chemical you are using.</i></p>	
Other	Emergencies	See Emergency Response Flip Chart and/or lab specific chemical hygiene plan. (For large flammable liquid spills, turn off ignition sources, evacuate the area, call 911/Duke Police.)
	Waste	Follow above storage guidelines. See lab-specific chemical hygiene plan, Lab Chemical Waste Management Practice , and Drain Disposal Practice .
	Training	Sign signature page in lab-specific plan to indicate review.
	Questions	OESO Fire & Life Safety: 919-684-5609; OESO Occupational Hygiene & Safety: 919-684-5996.