

LABORATORY SAFETY DATA SHEET

University of North Carolina
Department of Environment, Health and Safety

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CLEAN UP OF LABORATORY CHEMICAL SPILLS

Many laboratory spills are of limited hazard potential and can be safely cleaned up by laboratory personnel. Each laboratory should be equipped to handle small low hazard spills. In general, the Department of Environment, Health and Safety (EHS) should be called if the spill presents a respiratory hazard, or otherwise poses a threat of fire or explosion. EHS should be called if the spill is:

- more than 100 ml of an OSHA regulated chemical carcinogen or a highly toxic chemical; or,
- more than 1 liter of a volatile or flammable solvent
- more than 1 liter of a corrosive (acid or base) liquid

Requesting Assistance for Chemical Spills

There may be some spills that are more hazardous and clean up should not be attempted by laboratory personnel. In general, the Department of Environment, Health and Safety should be called if the spill is: more than 100 ml of an OSHA regulated chemical carcinogen or a highly toxic chemical; more than 1 liter of a volatile or flammable solvent; or, more than 1 liter of a corrosive (acid or base) liquid. In such cases, the room should be evacuated and the Department of Environment, Health and Safety called immediately. These more hazardous spills may only involve the EHS Spill Response Team or the UNC Emergency Response Plan may need to be activated which will involve the Chapel Hill Fire Dept., Campus Police, Orange County Rescue Squad. In the event of major uncontrolled incidents such as fire, major releases of hazardous chemicals to the environment, or life threatening injuries, 911 should be called immediately.

Communication between the laboratory, department, Department of Environment, Health and Safety, other response personnel is very important. The Principal Investigator and other laboratory personnel who are knowledgeable of the hazardous materials involved and the particular circumstances of the accident must be present at the incident command site. Material safety data sheets for the chemicals involved should be obtained and brought to the site.

Mercury Spills

Spills of mercury from broken thermometers, vacuum apparatus etc., can be cleaned up using an aspirator which can be made using a side arm flask, tubing, a pipet, and a vacuum source. The side arm is connected with a hose to the vacuum source. Water is placed in the flask, the top of the flask is sealed with a rubber stopper with a glass tube extending through the stopper below the surface of the water. The glass tube is then connected with a hose to a small pipet to aspirate the spilled mercury. Seal off immediate spill area so that no one can walk on spilled mercury. Collect, free mercury and broken thermometer parts and seal in a plastic bag. Submit Hazardous Material Transfer Form for pickup. After all free mercury is picked up spread sulfur powder or zinc dust to amalgamate microscopic spheres in floor cracks. EHS has a mercury vacuum available to clean up mercury spills if needed.

Response Steps for Chemical Spills

Step 1: Leave and Control Spill Area

- Evacuate personnel from the immediate spill area.
- Block off immediate spill area- close corridor doors, use lab carts, wastebaskets, etc.
- Eliminate any fire hazard especially if spill is flammable or combustible- turn off burners, electrical equipment, etc.
- Post sign, "Spill Area - Keep Out"
- Alert other personnel in laboratory and adjacent areas of a chemical spill including the PI or Instructor.

Step 2: Help Injured Personnel

- Take care of injured personnel- move from spill, remove contaminated clothing, flush skin with water, use eyewash and/or safety shower, etc. Seek medical attention if chemical is splashed in eyes, and/or there are burns or respiratory problems. See [UNC Laboratory Safety Manual](#) for "Reporting Injuries and Illnesses."

Step 3: Evaluate Hazard

- Make preliminary evaluation of hazard and identification of risks and decide whether the Department of Environment, Health and Safety (EHS) should be called. If it can be handled without respiratory protection by the lab continue with clean up.

Step 4: Clean Up Spill

- Contain the spill using absorbent clay to stop spill from spreading under refrigerators, cabinets, equipment, drains, or corridors. Then spread clay around the perimeter, damming the spill.
- Use the clay to absorb the rest of the liquid.
- Scoop the clay/absorbed chemical mixture into a plastic pail lined with a plastic bag.
- Seal plastic bag and containerize for disposal.
- Wash and deactivate the spill surfaces of trace amounts of the spilled chemical. Contact EHS for advice.
- Fill out Hazardous Material Transfer Form for collected spill material or call EHS for disposal instructions.
- Replace used materials in spill kit.

Step 5: Critique Incident

- Critique incident to prevent further spills and improve response procedures.

Chemical Spill Response Kit

Each laboratory should be equipped with protective clothing and spill cleanup materials to respond to small low hazard chemical spills. These materials can all be obtained from the University's Scientific Storeroom.

Description	Stk No	Optional Items (Not Included in Kit)	
Spill Kit for Laboratory Chemical Spills	SR64125	1 Goggles, Safety	SP43660
1 Pail, Plastic, 2.5 Gallon	SR64135	2 pair Gloves Neoprene 11", Long	SP43390
2 Oil Dri, Bentonite Clay, 5LB Bag	SR64137	2 Coveralls Tyvek, Large	SR62905
2 Plastic Bags, Black, 3ml 23x20x48	SR64140		
1 Dust Pan with Brush, Polypropylene	SR64145		
4 Bags, Ziplock	SR62000		
1 pair Disposable, Nitrile Gloves (Large)	SP43526		
2 Tags with Ties for Bags	SR64150		
2 pairs of Shoe Covers, Disposable Tyvek	SR62960		
1 Label (sticker) "Chemical Spill Kit" for bucket			
1 Sign "Spill Area - Keep Out"			
1 Instruction sheet "Clean up of Laboratory Spills"			