

Section:	Laboratory Safety Manual	Date of Issue:	2007.02.13
		Issued By:	Environmental Health and Safety
Part:	Emergency Response	Revision #:	2
		Revision Date:	2014.03.11
Pages:	3	Revised By:	Fred Doré

INTRODUCTION

All areas that use or store hazardous materials must be prepared to respond effectively if a spill or release occurs. Laboratory personnel must follow the proper emergency response plan for spills. It is expected that lab personnel will respond and clean up minor spills appropriately. In the event of a major spill Campus Security must be notified. Caretaking personnel are not properly trained to clean up laboratory spills and will not be requested to do so. Environmental Health and Safety (EHS) (ucsafety@ucalgary.ca) can provide advice on the proper clean-up techniques, materials and personal protective equipment, which may be required.

A successful spill cleanup is one in which no one gets exposed or injured during the clean up. **DON'T RUSH, DON'T WORK ALONE, AND DO NOT CLEAN UP A SPILL UNLESS YOU ARE FAMILIAR WITH THE PROPERTIES OF THE CHEMICAL.** *Remember to check the Material Safety Data Sheet (MSDS)*

The University of Calgary EHS department has developed a [spill response training course](#) and it is expected that all people working in an area where they may be required to respond to a spill complete this course.

DETERMINATIONS

A **Minor Spill (that laboratory personnel may clean up appropriately)** is one in which ALL of the following conditions are met:

- the material spilled is known, and
- you know the properties of the material or have access to the MSDS, and
- appropriate personnel protective equipment is available & used (i.e., gloves, eye protection booties), and
- you have the necessary materials to clean up the spill, and
- you are trained to use the spill control kit for this material.

A **Major Spill requires that you contact Campus Security at 403-220-5333 for assistance**, is one in which ANY of the following conditions apply:

- someone has been injured or
- a fire or explosion has, or is likely to occur or
- the material spilled is highly toxic; or
- the spill is in a common area (e.g., hallway) or other area accessible to the general public; or
- the spill requires a specialized response e.g. Hydrofluoric Acid
- the material spilled is unknown; or
- a responder is unsure whether the spill should be considered “Minor” or “Major”.

INITIAL RESPONSE

1. Warn other personnel in the laboratory. If a volatile, flammable, or highly toxic material is spilled, have everybody extinguish flames and turn off spark-generating equipment and evacuate the laboratory immediately. Follow the instructions above for a major spill.
2. If vapours are a concern and there are fume hoods in the area, fully open the sash and if available activate the emergency purge (see Laboratory Fume Hood Standard if unsure).

3. If clothing is contaminated, remove it and use the emergency shower to rinse the affected areas. If contaminants are in your eyes rinse for at least 15 minutes at an eyewash station.
4. If there are medical emergencies call Campus Security at **403-220-5333** for assistance and an ambulance if required. Provide the following information:
 - Your name and phone extension.
 - Exact location of spill (building and room number).
 - Name of material spilled.
 - Quantity of material spilled.
 - Information on injuries to personnel.

SPILL CLEAN UP PROCEDURES

1. Obtain the required spill supplies, put on appropriate protective equipment.
2. Use a spill sock or absorbent to dike around floor drains and prevent contaminants from entering sanitary sewer.
3. Remove other materials from around the spill area to prevent cross contamination and tripping hazards.
4. Work in teams. One person cleans the spill; the other should remain outside of the contaminated area and hand supplies to person cleaning.
5. Contain the spill by pouring a ring of absorbent around it.
6. Using forceps or tongs remove broken glass or sharp objects and place in a container.
7. Pour additional absorbent on the spill. Always pour the neutralizer or absorbent starting at the edges and moving toward the center of the spill site.
8. Using a broom or brush work the absorbent into the spill sweeping from the outer edge toward the center.
9. Add more absorbent if the spill area appears to be wet or there is still free liquid.
10. Repeat until all liquid is absorbed.
11. Scoop up all absorbed material with brush and dustpan and place in a plastic bag, Include the spill sock if used. Remember, the absorbed material is still considered potentially hazardous.
12. Wipe the spill area with a damp paper towel and place in a plastic bag.)
13. Dispose of all cleanup materials as hazardous waste and submit a waste pickup request
14. Report the spill immediately to your Supervisor and complete an incident report using the Online Accident Reporting system OARS.

SPECIAL PROCEDURES

Biohazard spill – Clean-up of biohazardous spills involves special considerations due to the potential for infectious aerosols. Refer to the [Biosafety and Procedures Manual](#).

Radioactive material spill – Clean-up of radioactive materials involves some special consideration in regards to monitoring of area to ensure effective clean-up. Refer to the [Radiation Safety Program and Procedures Manual](#) for details.

Hydrofluoric acid – Hydrofluoric acid (HF) has a number of physical, chemical, and toxicological properties that make it especially hazardous to handle. Due to these properties, HF spills are considered **Major Spills** and laboratory staff must call Campus Security at **403-220-5333** to request assistance.

Mercury spills – Mercury poses significant hazards to the environment and potential health hazards to the occupants of the space if not cleaned up properly. For small mercury spills a commercially available mercury spill kit must be used. For major spills involving mercury, a special mercury vacuum can be provided. Please contact Campus Security for assistance.

SPILL KIT LOCATION AND SUPPLIES

A spill kit is required in all laboratories and areas that utilize chemical, biological or radioactive materials. The spill kit is laboratory specific, based upon the materials present in the laboratory or area, and must be maintained.

Laboratories may build their own spill kit and using recommended supplies found below or can purchase a kit from the University of Calgary preferred vendor (ucalgary.ca/safety/spill_kits) or other laboratory supply vendor.

Recommended Spill Kit Supplies

- Personal protective equipment (PPE) gloves, chemical goggles, booties, lab coat
- Spill sock
- Absorbent material
- Tongs to pick up glass/sharps
- Brush and scoop for mixing and cleanup
- Plastic bags for clean up (heavy-duty)
- Paper towels
- For **biohazardous materials**: suitable disinfectant, detergent, autoclave bags & tags
- For **radioactive spills**: appropriate detergent/soap

*Special circumstances may require an appropriate respirator with the correct cartridge for the material (NIOSH approved). Individual respirator fitting is required as per the [Respiratory Protection Program](#). Contact EH&S (ucsafety@ucalgary.ca) for assistance.

Location

The spill kit should be located in an area of the laboratory where it can be easily accessed and where a spill is least likely to occur. It is recommended that it be located near an exit. All people working in the lab should be aware of the location of the spill kit. At least annually the kit should be checked to ensure that required supplies are present and in good condition.