

Spill Response Plan

Chemical Spill

Spill Response and clean-up

In the event of a chemical spill, the individual(s) who caused the spill is responsible for prompt and proper clean-up. It is also their responsibility to have spill control and personal protective equipment appropriate for the chemicals being handled readily available.

The following are general guidelines to be followed for a chemical spill.

- 1. Immediately** alert area occupants and supervisor, and evacuate the area, if necessary.
- 2. If** there is a fire or medical attention is needed, contact **Public Safety at 7-5911**.
- 3. Attend** to any people who may be contaminated. Contaminated clothing must be removed immediately and the skin flushed with water for no less than fifteen minutes. Clothing must be laundered before reuse. See <http://www.ccohs.ca/oshanswers/chemicals/firstaid.htm> for more information.
- 4. If** a volatile, flammable material is spilled, immediately warn everyone, control sources of ignition and ventilate the area.
- 5. Don** personal protective equipment, as appropriate to the hazards. Refer to the Material Safety Data Sheet or other references for information.
- 6. Consider** the need for the use of a respirator or self-contained breathing apparatus requires specialized training and medical surveillance. Never enter a contaminated atmosphere without protection or use a respirator without training. If respiratory protection is needed and no trained personnel are available, call EHS at

7-2621. If respiratory protection is used, be sure there is another person outside the spill area

in communication, in case of an emergency. If no one is available, contact Public Safety.

7. Use the chart below to determine the extent and type of spill. If the spill is large, if there has been a release to the environment or if there is no one knowledgeable about spill clean-up available, contact **EHS at 7-2621 or Public Safety at 7- 5911.**

Category	Size	Response	Treatment Materials
Small	up to 300cc	chemical treatment or absorption	neutralization or absorption spill kit
Medium	300 cc - 5 liters	absorption	absorption spill kit
Large	more than 5 liters	call public safety	outside help

8. Protect floor drains or other means for environmental release. Spill socks and absorbents may be placed around drains, as needed.

9. Contain and clean-up the spill according to the table above. Loose spill control materials should be distributed over the entire spill area, working from the outside, circling to the inside. This reduces the chance of splash or spread of the spilled chemical. Bulk absorbents and many spill pillows do not work with hydrofluoric acid. POWERSORB (by 3M) products and their equivalent will handle hydrofluoric acid. Specialized hydrofluoric acid kits also are available. Many neutralizers for acids or bases have a color change indicator to show when neutralization is complete.

When spilled materials have been absorbed, use brush and scoop to place materials in an appropriate container. Polyethylene bags may be used for small spills. Five gallon pails or 20 gallon drums with polyethylene liners may be appropriate for larger quantities.

10. Complete a hazardous waste sticker, identifying the material as Spill Debris involving XYZ Chemical, and affix onto the container. Spill control materials will probably need to be disposed of as hazardous waste. Contact EHS at 305 348-2621 for advice on storage and packaging for disposal.

11. Decontaminate the surface where the spill occurred using a mild detergent

and water, when appropriate.

12. Report all spills to your supervisor or the Principal Investigator

Recommended Spill Control Material Inventory

Your laboratory or work area should have access to sufficient quantity of absorbents or other types of materials to control any spill that can be reasonably anticipated. Vermiculite, lined 5-gallon pails and limited spill control materials are available at the loading docks of Lewis Thomas Lab, Frick, and E-Quad. Additional materials may be found in certain laboratories and the chemical stockrooms.

Personal Protective Equipment

- 2 pairs chemical splash goggles
- 2 pairs of gloves (recommend Silver Shield or 4H)
- 2 pairs of shoe covers
- 2 plastic or Tyvek aprons and/or Tyvek suits

Absorption Materials

- 4 3M POWERSORB spill pillows (or equivalent)
- 1 3M POWERSORB spill sock
- 2 DOT pails (5 gallon) with polyethylene liners
- 1 filled with loose absorbent, such as vermiculite or clay
- 1 with minimum amount of loose absorbent in the bottom

Neutralizing Materials

Acid Neutralizer

Caustic Neutralizer

Commercial neutralizers, such as Neutrasorb (for acids) and Neutrakit-2 (for bases) have built in color change to indicate complete neutralization

Solvent Neutralizer

Commercial solvent neutralizers, such as Solusorb, act to reduce vapors and raise the flashpoint of the mixture

Mercury Spills

- Small mercury vacuum to pick up large drops (optional)
- Hg Absorb Sponges - amalgamate mercury residue

Hg Absorb Powder - amalgamates mercury

Hg Vapor Absorbent - reduces concentration of vapor in hard to reach areas

Mercury Indicator - powder identifies presence of mercury

Clean-up Tools

Polypropylene scoop or dust pan

Broom or brush with polypropylene bristles

2 polypropylene bags sealing tape

PH test papers

Waste stickers

Floor sign - DANGER Chemical Spill - Keep Away

BIOLOGICAL SPILL

[Planning for spills](#)

[Spill inside a bio-safety cabinet](#)

[Small spill outside a bio-safety cabinet](#)

[Large \(>500 ml\) spill outside a bio-safety cabinet](#)

Planning for Spills

The consequences of any spill of biological material can be minimized by performing all work on plastic-backed absorbent liner to absorb spills. A simple spill kit should be readily available and should include the following items:

Chlorine bleach or some other concentrated disinfectant

Package or roll of paper towels

Autoclavable bag

Latex or nitrile gloves

Forceps for picking up broken glass

Report spills to your supervisor. Contact the **Bio-safety Officer** (305 348-3387) for further information.

Spills inside a Biological Safety Cabinet

- 1. Leave** the cabinet turned on.
- 2. Put** on gloves and a lab coat.

- 3. Spray** or wipe cabinet walls, work surfaces, and equipment with disinfectant equivalent to a 1:10 bleach solution. If necessary, flood the work surface, as well as drain pans and catch basins below the work surface, with disinfectant.
- 4. Wait** at least 20 minutes.
- 5. Soak** up disinfectant and spill with paper towels. Drain catch basin into a container. Lift front exhaust grill and tray and wipe all surfaces. Ensure that no paper towels or solid debris are blown into the area beneath the grill.
- 6. Autoclave** all clean-up materials before disposal in the bio-hazardous waste container.
- 7. Wash** hands and any exposed surfaces thoroughly after the clean-up procedure.

Small Spill outside a Biological Safety Cabinet

(Spill that can be covered by a few paper towels)

- 1. Put** on gloves and a lab coat.
- 2. Cover** spill with paper towels and gently apply disinfectant, proceeding from the outer edge of the spill to its center.
- 3. Leave** in place for at least 20 minutes
- 4. Pick** up the towels and discard into a biohazard container. Use forceps to pick up any broken glass and place them into a sharps container.
- 5. Re-wipe** the spill area with disinfectant.
- 6. Remove** gloves and thoroughly wash hands.

Large Spill of BL2 Material outside a Biological Safety Cabinet

(More than 500 ml)

- 1. HOLD YOUR BREATH AND LEAVE THE ROOM IMMEDIATELY**

2. **Warn** others to stay out of the spill area to prevent spread of contamination.
3. **Post** a sign on the door warning others of the biological materials spill.
4. **Remove** any contaminated clothing and put it into a biohazard bag for later autoclaving.
5. **Wash** hands and exposed skin and inform your PI or supervisor about the spill.
6. **Put** on protective clothing (lab coat, gloves, mask, eye protection, shoe covers) and assemble clean-up materials.
7. **Wait** 30 minutes before re-entering the contaminated area to allow dissipation of aerosols.
8. **Cover** the spill with paper towels and gently apply disinfectant, proceeding from the outer edge of the spill to its center.
9. **Leave** in place for at least 20 minutes.
10. **Collect** all treated materials and discard in a biohazard container. Use forceps to pick up any broken glass and place in a sharps container.
11. **Re-wipe** the spill area with disinfectant.
12. **Remove** glove and wash hands thoroughly.
13. **Review** Laboratory Safety Manual @ [Laboratory Safety Manual](#)