

Chemical Spill Response Guidelines

Overview:

Chemical spills can be a life-threatening emergency. Each laboratory should have a chemical spill kit suitable for the hazardous materials used in the laboratory, and laboratory specific procedures for chemical spill responses.

Minor Spill: A spill small enough to be safely cleaned by trained laboratory personnel using available PPE and materials, and not presenting significant inhalation, fire, reactivity, or exposure hazards.

Major Spill: Any spill that presents a fire hazard, toxic inhalation hazard, unknown hazard, high-volume spill, or involves highly dangerous chemicals. Lab personnel must contact the Safety Office immediately and should not attempt to clean the spill.

The Safety Office is available 24/7 to respond to any chemical spill that you are not comfortable with responding to. When in doubt, evacuate the area and contact the Safety Office at 701-231-7759.

Chemical Spill Kits:

Each laboratory must maintain an accessible spill kit, stored near the lab entrance. Spill kits should include:

- **Personal Protective Equipment (PPE):** Splash goggles, protective gloves, and lab coats.
- **Appropriate absorbents:** Labsorb, Kitty Litter, Absorbent Pads/Pillows, Paper Towels, etc.
- **Neutralizers (if corrosives are used):** Sodium bicarbonate (for acid spills), citric acid (for base spills)
- **Clean Up Equipment:** Broom/Hand brush and dustpan, scrapers, bags or other waste collection containers.

NOTE: Absorbents and neutralizers must be compatible with the spilled material. Do not use neutralizers or absorbents if they may react with the chemical.

Minor Spills:

A **minor spill** is a small, low-hazard spill that trained laboratory personnel can safely clean using the lab's spill kit. The chemical must be known, hazards must be low, and cleanup materials must be immediately available. If any uncertainty exists, treat the spill as **major** and evacuate.

1. Notify and Assess

- Alert everyone in the lab space. Ensure the hazards of the materials are understood. Refer to the Safety Data Sheet.

- Contact the Safety Office before cleanup if there is any uncertainty about the chemical, hazards, PPE, cleanup materials, disposal requirements, or whether the spill can be safely managed by laboratory personnel.
- 2. Control Access and Isolate the Area**
 - Restrict movement through the spill zone. Only personnel working on the clean up should remain in the area.
 - 3. Wear Appropriate Personal Protective Equipment (PPE)**
 - At a minimum: chemical-resistant gloves, splash goggles, and a lab coat.
 - Use additional PPE if the chemical hazards require it (refer to SDS).
 - 4. Clean Up Liquid Spills**
 - Use appropriate absorbent (Labsorb, kitty litter, absorbent pads, etc.).
 - Work from the outside edges toward the center to contain the spill.
 - 5. Clean up Dry or Powder Spills**
 - Gently sweep the powder into a container while avoiding methods that generate dust (such as vigorous sweeping).
 - Wipe the remaining area with a damp wipe (ensuring that the chemical will not react with the wipe or water).
 - 6. Decontaminate the Area**
 - Follow lab-specific procedures for decontamination. The NDSU Safety Office can assist in providing decontamination procedures and verification.
 - 7. Collect all Clean-Up Materials as Hazardous Waste**
 - Place used absorbents, PPE, broken glass, and debris into an appropriate hazardous waste container.
 - 8. Prepare and submit an Incident Report Form within 24 hours.**

Major Spills:

A **major chemical spill** is any spill that presents a significant risk to health, safety, or the environment, or involves chemicals that laboratory personnel are not trained or equipped to clean. This includes spills of highly toxic, volatile, reactive, corrosive, unknown, or large-volume materials.

- 1. Evacuate Immediately**
 - Stop work at once and evacuate the laboratory.
 - Warn others in the room and direct all personnel to leave the area.
 - If safe, close the laboratory doors behind you to contain vapors.
 - If the spill poses a building wide threat, pull the fire alarm to evacuate the building.
 - Do not attempt to clean, neutralize, or contain a major spill.
- 2. If Personnel are Exposed to Hazardous Chemicals**
 - Rinse affected areas with water for 15 minutes using the nearest eyewash or safety shower. Remove any contaminated clothing.
 - Call 9-1-1 for medical attention.
- 3. Contact the Safety Office immediately.**
 - Once outside the lab, call the NDSU Safety Office (24/7): 701-231-7759.
 - Do NOT re-enter the lab for any reason until cleared by the Safety Office.
- 4. Prepare and submit an Incident Report Form within 24 hours.**