

The following guidelines are offered to help decide if personnel should clean up a chemical spill.

Who Cleans Up The Spill?

You clean up the spill – if the spill does not involve injury, does not represent a fire or life hazard, is less than one gallon, and you have the proper training and personal protective equipment. If there are any questions concerning a particular spill, [contact Wooster Campus Public Safety](#).

Wooster Campus Public Safety cleans up the spill – for all other chemical spill situations, including those where personnel have questions or doubts about their ability to clean up the spill. Call Wooster Campus Public Safety at 614-292-2121. Report all injuries, fires, explosion, and potential life-threatening situations to 911; then contact Wooster Campus Public Safety at 614-292-2121.

Planning For Chemical Spill Emergencies

Training

Train all employees in chemical spill procedures when they are first hired and periodically thereafter. Document training and have the employee and supervisor sign the documentation. Keep the certification form on file.

Map

Draw a map of your lab or service area and clearly label where chemicals and waste chemicals are stored. Fire extinguishers, eyewashes, spill kits, exit routes, and any additional hazards should be clearly marked. Keep a copy of the map with your chemical hygiene plan. Update the map whenever chemical management practices change in the room.

Hazardous Chemical Spill Cleanup Guidelines

Chemical spill or hazardous materials emergency situations should be handled as a fire emergency. Initial response in a fire situation can be summarized as: RESCUE, CONFINE, REPORT, SECURE, and CLEANUP. These principles can also be applied to a hazardous materials spill situation.

RESCUE

Just as you are not to reenter a burning building, do not go back into an area where a chemical spill has occurred. In many documented cases, rescuers not wearing proper protective equipment have been overcome by toxic or asphyxiating fumes while trying to rescue other victims; many have died.

As you leave a chemical spill area, assist people exiting the area:

- Evacuate personnel from the spill area.
- Direct personnel to the nearest fire exit. Do not use the elevators.
- Attend to victims.

First Aid:

- Remove victim from spill area to fresh air (but do not endanger your own life by entering areas with toxic gases).
- Immediately remove contaminated clothing.
- Wash skin with water.
- Flush the skin and/or eyes with water for at least 15 minutes. (You may not feel any immediate effect from a chemical spill, but it is important to wash quickly and thoroughly because many chemicals can cause severe tissue damage which is not apparent until hours later.)
- Get medical attention for victims.

Chemical spills over large body areas:

- Remove contaminated clothing while under a shower.
- Flood affected body area with water for 15 minutes.
- Resume water wash if pain returns. Wash off chemicals with water; do not use neutralizing chemicals, creams, lotions, or salves.
- Make sure medical personnel understand exactly which chemical is involved.

CONFINE

- Close all doors.
- Isolate the area.
- Establish exhaust ventilation if possible.
- Open windows if possible without exposing yourself to the fumes.

REPORT

Call 911:

- For spills that involve injury requiring medical treatment.
- For spills that involve fire or explosion hazards.
- For spills that are potentially life threatening.
- For all chemical spills after work hours (4:30pm through 8:00am). Call Wooster Campus Public Safety at 614-292-2121
- For chemical spill situations that do not require 911 assistance.
- For chemical spills of a gallon or more, or any quantity of highly reactive or toxic material.
- For spills of unknown chemicals.

- For spills where personnel are not properly trained or equipped.
- For spills where there are questions or doubts regarding the ability to clean up the spill.

When Calling Wooster Campus Public Safety, the following information will be requested:

- Your name, telephone number and location.
- Location of the incident.
- Time and type of incident.
- Name and quantity of the material spilled.
- The extent of injuries, if any.
- The possible hazards to human health or the environment outside the facility.
- Other hazards that may be encountered in the area, such as large quantities of stored chemicals (oxidizers, flammables, and airborne toxic or irritant materials), radioactive materials, biohazards, etc.

SECURE

Until emergency responders arrive on the scene, you, your staff, and your building emergency officers will have to block off entrances to the spill site and prevent people from entering the contaminated area.

- Lock doors leading to the chemical spill and post signs on the doors warning of the spill (if necessary).
- Post staff at commonly used entrances to the spill site, so they can warn people to use other routes.
- For any large outdoor chemical spill, keep people upwind and uphill from the site.

CLEANUP

Based on the chemical spill situations described in the “Who Cleans Up The Spill” section, decide who will do the cleanup.

What To Do When You Clean Up a Spill

If you have proper training, proper personal protective equipment, and the proper materials to absorb and clean up your chemical spill, and no one has been injured, the spill is contained, and the spill is not life threatening or a fire or explosion hazard, you can then follow these procedures:

1) Locate the chemical spill kit.

2) Select the appropriate personal protective equipment.

- Always wear gloves compatible with the spilled chemical and chemical splash goggles.

- For body protection, wear a lab coat. If more protection is indicated, consider wearing an apron or coveralls.
- If foot protection is indicated, wear protective boots or shoe covers.
- If respiratory hazards are minimal, an N-95 respirator or respirator with the appropriate cartridges may be worn if personnel have completed fit-testing with EHS. (If severe respiratory hazards exist, contact EHS for assistance).

3) Remove ignition sources.

- Turn off hot plates, stirring motors, and flame sources.
- Shut down all other equipment.
- If personnel are unable to shut off sources of ignition, notify the emergency responders.

4) Confine or contain the spill.

- Cover with an absorbent mixture.
- Clean up minor spills with paper towels or a sponge if they will not react.
- Sweep solid materials into a dust pan and place the material in a sealed container.
- If it is an acid/base spill, first add a neutralizing agent. For small amounts of inorganic acids and bases, use a neutralizing agent such as “Spill X-A” for acids and “Spill X -B” for bases, and then use absorbent material.
- For small amounts of other materials, absorb with non-reactive material such as vermiculite, sand, towels, or “Floor-Dri”.
- For large amounts of inorganic acids or bases, call Wooster Campus Public Safety for assistance (614-292-2121).
- For large amounts of other materials, make a judgment call, dependent upon the amount, toxicity, and reactivity. You may handle spills yourself or call Wooster Campus Public Safety for assistance (614-292-2121).

5) Remove absorbent material with a broom and dust pan.

- Place material in a plastic bag or other appropriate container. If the spilled chemical is a volatile solvent, transfer the plastic bag to a chemical fume hood for storage until the material can be picked up. If the spilled chemical is a non-volatile, hazardous chemical, dispose of the material as a hazardous chemical waste. If the spilled chemical is a non-volatile, non-hazardous chemical, contact Wooster Campus Public Safety to determine the appropriate disposal method (614-292-2121).

6) Wet mop the spill area.

7) Spills that require special handling.

- Acid Chlorides: use “Oil-Dri”, “Zorb-all”, dry sand, etc. Avoid water and sodium bicarbonate.
- Mercury: for small spills (broken thermometer and smaller quantities) use an aspirator bulb or suction device. Then mop with a mercury decontaminating powder solution

(saturated HgX in water or other commercially available products). For spills larger than a broken thermometer, spills in an oven or heated area, and spills in small unventilated rooms, contact Wooster Campus Public Safety at 614-292-2121.

- Alkali Metals: smother the material in dry sand and place it in a chemical fume hood, contact Wooster Campus Public Safety at 614-292-2121 for disposal instructions.
- White (Yellow) Phosphorus: blanket with wet sand or wet absorbent, place it in a chemical fume hood, contact Wooster Campus Public Safety at 614-292-2121 for disposal instructions.

COMMENTS

- Questions arise as to what constitutes a “large” spill requiring Wooster Campus Public Safety or other parties to cleanup or oversee the cleanup procedures and what are the limitations of commercially available spill cleanup kits.
- A “large” chemical spill can be as small as a few milliliters if the material is a highly volatile, toxic, or reactive compound spilled in a confined space. Many times you will have to make a professional judgment as to the severity of the spill. When in doubt, you can always call Wooster Campus Public Safety at 614-292-2121 for advice.
- Chemical spill cleanup kits are required in the laboratory and other service areas that use chemicals. The kits are very useful if personnel know how to use them. Chemical absorbents or neutralizers can be used quickly and effectively to contain a spill. Use these items if your personal safety is not in jeopardy. If in your judgment a respirator is necessary to clean up the spill, secure the room and call Wooster Campus Public Safety at 614-292-2121 to aid in the spill cleanup.
- Be aware that even in a well-ventilated room, the lower explosion limit (LEL) of a chemical may be reached at the surface of the spill. You will want to avoid any sparks or sources of ignition during the cleanup. The protective equipment in a spill kit will not protect you from a flash fire. At times, the best way to handle a spill of a highly volatile compound, such as diethyl ether or chloroform, is to open the windows, turn the chemical fume hoods on, leave the room, close the doors, and let the room air out. In these cases, call Wooster Campus Public Safety at 614-292-2121 to monitor the situation. If in your professional opinion, there is a strong risk of fire or explosion, call 911 and Wooster Campus Public Safety for fire department backup, pull the building alarm and evacuate the building. In most cases of a chemical bottle breaking in a laboratory, you will not need to call the fire department.
- Do not forget that any person who needs to wear a respirator must be [fit tested](#), have a medical exam, and meet the requirements of 29 CFR 1910.134.