

Chemical Spill

An accidental spill can occur at any time while transporting chemicals. What you do to control or manage the cleanup can be the difference between a minor incident and a major accident. Lack of proper planning can complicate the cleanup, cause property damage, and increase the risk to personal safety. The following information will assist with the safe cleanup of a chemical spill in the environment.

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Source

Environmental Protection Agency

Michigan State Police

More Information

<http://chemicalspill.org/>

Prevention / Mitigation / Preparedness – Chemical Spill

Keep updated emergency response procedures for your area.

Post a list of contacts in case of a spill.

Post an evacuation route.

List the location of spill response materials and their capabilities.

Train employees in advance on when and how to properly select PPE and use spill response materials.

- Contact OSEH at (734) 647-1143 for assistance.

Assign a person to periodically check spill treatment kits, test clean-up equipment and to maintain inventory. Date and log the inspections.

When moving chemicals in your facility, do not attempt to carry more bottles than you can handle.

Larger quantities of chemicals should be transported on carts.

Use safety carriers to protect against accidental bumping.

Don't move open containers or overcrowd the cart with bottles that can be spilled.

Your familiarity with the risks and safety precautions associated with the material can alert you to the potential dangers associated with the cleanup.

Below are three categories of commonly used chemicals in labs and their potential hazards.

1. Corrosives - Corrosives can be very damaging to metals and other materials. Direct contact with corrosives can cause severe burns. Vapors from these substances can result in damage to eyes, nose and the respiratory system.
2. Flammable Liquid - Flammability is determined by flash point. Liquids with flash points below 100 degrees Fahrenheit are flammable. Direct contact with many liquids may cause skin irritation, dryness or even destruction of tissue. Inhalation of vapors may cause dizziness, nausea, and respiratory irritation.
3. Reactive Substances - A spill involving a reactive substance may be a fire hazard. It can produce toxic and flammable gases. Reactive materials should contain cautionary labeling.

Containers of chemical product (bottles, jugs, drums, vials, boxes, etc.) must be:

1. In good condition (no cracks, leaks, rust, etc.)
2. Compatible with the waste
3. Labeled with ALL of the following:
 - a. "Hazardous Waste"
 - b. Provide the RCRA/MI Act 451 Waste Code or the chemical name that identifies each constituent in the container.



- c. List the Accumulation Start Date – the date the first drop of waste was placed into the container. NOTE: The container cannot be kept at the generator’s location for more than 90 days. Contact OSEH-Hazardous Materials, (734) 763-4568, for pickup within 60 days of the accumulation start date. Every attempt to pickup waste within 1 week of scheduling and arrange for proper disposal will be made.
 - d. Kept CLOSED unless actively adding or removing waste. Funnels cannot be left in waste containers. They must be removed immediately after use and the container lid closed/sealed.
4. Hazardous Waste labels which prompt the user for the required information are available FREE from OSEH-Hazardous Materials. Call (734) 763-4568.

Response – Chemical Spill

Report large chemical spills (greater than 1 gallon) in corridors or common areas (hallways, elevators, eating areas, rest rooms, offices, etc.) to the Department of Public Safety at 911 and to OSEH Hazardous Materials at (734) 763-4568.

Assume that all solvent spills are flammable.

Extinguish all ignition sources. If the fume hood is not operational open all doors and windows when possible to reduce the vapor build-up in the immediate area.

All spills should be confined to the immediate area. The area should be restricted so that others are not exposed.

Appropriate personal protective equipment (PPE) should be used when cleaning up a spill. This includes, but is not limited to, gloves, goggles, and a laboratory coat.

Minor Chemical Spill

Alert people in immediate area of spill. Secure the area to prevent others from being contaminated or spreading the material.

If fume hood is not operational, open outside windows.

Wear protective equipment, including safety goggles, gloves and long-sleeve lab coat.

Avoid breathing vapors from spill.

Confine spill to as small an area as possible.

Do not wash spill down the drain.

Use appropriate kit to neutralize and absorb inorganic acids and bases. Collect residue, place in container, and dispose as chemical waste. For other chemicals, use appropriate kit or absorb spill with vermiculite, dry sand or diatomaceous earth. Collect residue, place in container and dispose as chemical waste.

Staff should only clean up chemical spills they are knowledgeable about and have been trained to handle.

Clean spill area with water.

Major Chemical Spill

Attend to injured or contaminated persons and remove them from exposure, if safe to do. Use emergency eye wash and safety showers.

Alert people in the laboratory to evacuate.

If spilled material is flammable, turn off ignition and heat sources. Do not turn on other switches.

Call DPSS at 911 for assistance.

Close doors to affected area.

Post warnings to keep people from entering the area.

Have person available that has knowledge of incident and laboratory to assist emergency personnel.

Notes and Precautions: The range and quantity of hazardous substances used in laboratories require pre-planning to respond safely to chemical spills. The cleanup of a chemical spill only should be done by knowledgeable and experienced personnel who have received appropriate training. Spill kits with instructions, absorbents, reactants and protective equipment should be available to clean up minor spills. A minor chemical spill is one that the laboratory staff is capable of handling safely without the assistance of safety and emergency personnel. A major chemical spill requires active assistance from emergency personnel.

Recovery – Chemical Spill

Inspect and repair drains, gutters and flashings. Clean out catch basins.

Replace clean-up materials and properly clean and inspect clean-up equipment.

Clean indoor spill area, collect all waste in a compatible / closeable container for disposal.

Contact OSEH Hazardous Materials at (734) 763-4568 for waste pick-up.