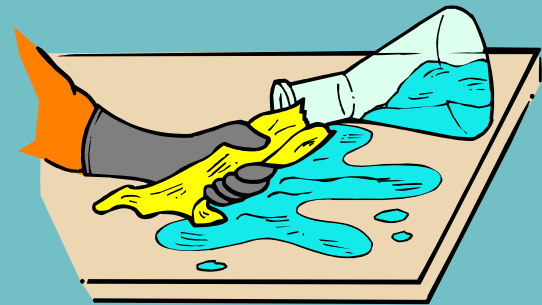


Spill Response, Clean-Up, and Emergency Response

Causes of a Spill

Causes of chemical spills are as follows:

- Inappropriate handling techniques;
- Inappropriate storage containers;
- Damaged storage containers;
- Uncontrolled access to chemical storage;
- Lack of chemical-related training; and
- Lack of supervision.



Dangers of Chemical Spills

- Slip, trip, fall hazard
- Contamination of other materials
- Risk of Fire
- Possible Release to the Environment
- Routes of Exposure to Hazardous Materials
 - Inhalation
 - Injection
 - Ingestion
 - Absorption

Dangerous to you...

Why chemicals are dangerous?

- Chemicals can cause:
 - Burns
 - Adverse health effects
 - Permanent disabilities
 - Death
- Sometimes problems occur immediately (Acute effect)
- Others may happen after years of exposure (Chronic effect).



Spill Prevention Planning

- Only buy and store amount of material needed
- Buy the least hazardous materials possible
- Use non-hazardous materials when possible
- Minimize traffic in the area
- Store liquid wastes in secondary containers
- Regularly inspect containers to ensure their integrity
- Be aware of evacuation routes and emergency equipment

Managing A Spill

What type and size of spills am I capable of managing?

You should only be cleaning up small spills (less than 1 gallon) of known materials that you work with on a regular basis.

Small spill clean-up kits are located in the 90-day storage area and in laboratories.

Spill Kits

These spill kits contain everything you need to properly manage a small spill in your labs.

These are available for \$48 each.

Please contact Dennis Daye to place an order and purchase.



Managing A Spill...

- In the event of a chemical spill, first decide if you are trained, knowledgeable and equipped to handle the incident.
- Prepare a plan of action (e.g. waiting for help, attend to injured, shutting off the valve, turn off ignition sources in presence of flammables if safe to do so)
- Immediately evacuate the lab and notify Public Safety if there is a possibility of an acute respiratory hazard present or if you need assistance to clean up the spill.
 - Never proceed to clean up a spill if you do not know the hazards associated with the chemical or if you are unsure of how to clean up the spill.
- If anyone is injured or contaminated, immediately notify Public Safety and begin decontamination measures or first aid, if trained.
- Make sure to wear the proper PPE.
 - Apron, Gloves, Goggles, etc.



Managing A Spill...

Contain the spill (Stopping the source and stopping the spread)

- stopping the source includes:
 - Closing a valve;
 - Shutting down a pump to stop flow;
 - Putting “bandage” around a leaking hose;
 - Positioning of leaking container.
- stopping the spread includes:
 - Building a barrier around the spill;
 - Make a flow channel;
 - Use of absorbent or spill pads;

Managing A Spill...

- Absorbent should be distributed over the entire spill area, working from the outside, circling to the inside.
 - This stops the spread of the spilled chemical.
- When spilled materials have been absorbed, use brush and scoop to place materials in an appropriate container (bag is provided in spill kits).
 - Dispose of any contaminated PPE used during cleanup.
- Complete hazardous waste sticker, identifying the material as Spill Debris involving XYZ Chemical, and affix onto the container. Arrange for pick-up by EH&S Dept. as soon as possible.



Flammable Liquids

- When managing a spill of a flammable liquid...
 - Turn off all sources of ignition
 - Lay the chemical spill pads over the spill
 - Pads are designed to suppress flammable vapors
 - Allow pads to completely absorb the liquid
 - Place the pads in plastic disposal bag
 - Wipe up any remaining liquid with paper towel
 - Dispose of the paper towel in plastic bag
 - Seal bag and attach a completed hazardous waste sticker



After the spill...

- Remember that absorbed materials have the same properties and hazards as the original spilled materials.
- Safely dispose all disposable coveralls, gloves and respirators.
- Decontaminate all non-disposable items (brooms, shovels, thongs, protective clothing) using a mild detergent and water.
- Arrange for pick up by EH&S Dept. as soon as possible.

After the spill...

- Review what happened to prevent reoccurrence.
- No matter how small the spill, keep a record of what happened.
- Make sure that supplies (e.g. first aid, spill control kit) are replaced immediately.

ONLY HANDLE SPILLS OF A GALLON OR LESS OF A KNOWN MATERIAL.

Emergency Situations...

- TAKE CARE OF THE SAFETY OF YOURSELF AND OTHERS!
- Activate the building's fire alarm system.
- If you have bodily contact with material:
 - immediately remove any contaminated clothing
 - flush the area with copious amounts of water
- Call Public Safety at **911**
 - Identify yourself and why you are calling
 - Identify the exact location and nature of the emergency
 - Identify any injuries or symptoms involved
 - Identify all hazardous materials involved (if known)

What to do when an emergency occurs...

- Evacuate building to a safe distance (at least 100 feet)
- leave clear access for emergency personnel
- Keep all persons exposed in the same area. They should not leave until they are cleared by proper authorities.
- If you have time to do so safely
 - Close, but do not lock, doors behind you to isolate the area
 - Turn off, unplug, or remove potential sources of ignition
 - Contain the spill material with berms or other means
 - Post a sign to warn others not to enter the area

**YOUR SAFETY AND THE SAFETY OF OTHERS
SHOULD BE YOUR TOP PRIORITY!**

This is a general awareness training. You are not trained as an emergency responder and should not attempt to manage emergencies. Emergency agencies such as the Fire Department, Police Department and Haz Mat Response Teams will be responsible for situations other than easily contained spills or incidental situations.

Questions or Suggestions?

**Thank you for participating in Hazardous
Waste Generator Requirements Training**