



Chemical Spills and Emergency Response

Office of Environmental Health and Occupational Safety

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I. Purpose

This policy serves to identify the potential dangers that a hazardous material spill either in its original form or as a waste can pose to the health of humans and to our environment. It serves to demonstrate the proper response to a fire emergency.

Such objectives are best accomplished by complying with prevention methods rather than having to remediate accidents after they occur. This policy has been developed to train individuals to identify and properly manage all hazardous materials from initial use to the final means of disposal. The proper management and monitoring of these materials is the soundest approach to the prevention of hazardous spills.

Should an accident occur, our institution has the capabilities of responding to the situation in a manner that is safe, prompt, efficient and will also minimize harm to life, health and property. The following policies are designed to accomplish this objective:

1. The office of Environmental Health and Occupational Safety will provide the appropriate training to lab and school personnel and students so as to ensure there is a clear understanding of the steps to take in an emergency involving a chemical spill.
2. All appropriate measures, including evacuation, shall be taken to ensure the safety of employees, patients and visitors during this type of emergency, including evacuation.
3. All individuals working in lab spaces where a spill or emergency may occur will be trained on responding to a spill or fire emergency.
4. The EHOS department will ensure the upkeep and supply of spill kits including ash soda, corrosive and solvent neutralizers.
5. The EHOS department will carry out periodic review of its policies and procedures.

II. Spill Response

A number of factors come into play when assessing a situation once a hazardous material has been accidentally spilled. These factors include:

1. The type of chemical, its physical state (solid, liquid or gas), its volatility and the amount spilled
2. Its chemical properties: reactivity, corrosivity, flammability
3. Toxic properties and the route(s) by which the substance can enter the body
4. Where and what specific environmental conditions exist (an enclosed area or room and its dimensions, type of ventilation, electrical sources)

i. To Respond or Not to Respond

It is imperative that unqualified personnel do not make an attempt to clean or in any other way respond to a chemical spill, except as described herein or unless under the direct supervision of the safety office. To do so without proper training can place the person and others in danger. Additionally, federal regulations require that personnel responding to chemical spills be trained a certain number of hours on emergency response procedures and proper use of emergency equipment.

However there are certain conditions under which an employee can mitigate a spill without taking unnecessary risks. Those circumstances are limited to specific substances and conditions. Also, the individual involved must feel comfortable enough to handle the situation:

1. The amount is negligible: a few milliliters of the substance has been diluted prior to use, especially in the case of acids, bases or small quantities of organic solvents such as acetone, methanol or xylene.
2. The material involved has low volatility or low vapor pressure.
3. The substance is not flammable.
4. There are no dangers of the material coming in contact with an incompatible material.

ii. Small Chemical Spill

Neutralizing agents can be found by the passenger elevator of every floor in the Marshak building. All laboratories in other buildings and art shops have been provided with the appropriate neutralizers. Spill kits come with the corresponding instructions. Use the appropriate kit to neutralize and absorb inorganic acids and bases. Collect the residue and place in container, and dispose of it as the corresponding chemical waste.

Use protective equipment such as gloves 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

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and emergency personnel, for example a few milliliters of hydrochloric acid. All larger chemical spills are considered major.

iii. Large Spills: Taking the First Steps

In the event of a chemical spill outside the parameters described above, the following steps should be immediately taken:

1. Alert people in immediate area of spill. Identify the substance if it can be done safely. Do not panic and run.
2. Notify the Office of Environmental and Occupational Health and Safety at **(212) 650-5080**. Have the location: building, floor and room number. If no one can be reached, then contact the office of Public Safety, x7777.
3. If possible, safely shut off potential ignition sources such as lights, radios, ovens, etc.
4. Close the doors to the spill.
5. Inform other occupants of the spill and have them leave the area immediately.

iv. Hazardous Material Splashed in Eye

- i. Immediately flush the eye (eyeball and inner surface of eyelid) with potable water from an eyewash fountain for at least 15 minutes.
- ii. If no eyewash fountain is available, injured persons should be placed on their backs and water gently poured into their eyes for at least 15 minutes.
- iii. Injuries are to be reported immediately to 9-911 for ambulance service to the closest emergency room.

v. Chemical Spill on Body

1. For spills covering a small amount of skin, immediately flush with flowing water for no less than 5 minutes. If there is no visible burn, wash with warm water and soap. Check the SDS to see if any delayed effects should be expected.
2. If clothing is contaminated, remove it at once, using caution when removing to prevent contamination of the eyes.
3. If eyes are involved, follow the procedure in section iv. above.
4. First aid must be followed by prompt treatment by a member of a medical team or a medical doctor.

vi. Minor Cuts and Puncture Wounds

1. Vigorously wash injury with soap and water for several minutes.
2. If the wound is severely bleeding, obtain medical attention at once.
3. Report incident to supervisor.

III. Fire Emergency

The most important thing to know about a fire is to never underestimate it. Depending on the materials (fuel) and other factors, a fire can spread in a matter of seconds and engulf a large area. If you discover a fire:

- ❑ Proceed with caution.
- ❑ Be ready to evacuate in the event the fire cannot be controlled.

i. **R.A.C.E.**

The easiest approach to fire fighting for someone who is not a fireperson is to remember to R.A.C.E., which means:

Rescue – Alert every one there is a fire, and ask whether everyone has been alerted. If there is an injured person(s) and you can remove him/her from the area without danger to yourself, do so quickly.

Alarm – Pull the nearest fire alarm.

Control – Close the door to the fire and ensure that there is the least possibility of the fire expanding by isolating it as much as possible.

Extinguish – If safe to do so, extinguish the fire by using a fire extinguisher. Here the word to remember is P.A.S.S.

ii. **P.A.S.S.**

Pull the pin

Aim extinguisher at base of fire.

Squeeze the handle.

Shoot at the fire.

iii. **Other Rules**

- ❑ Never enter a room that is smoke filled
- ❑ Never enter a room on fire
- ❑ Never open nor enter a room if the top half of the door is warm to the touch
- ❑ Fight the fire from a position from which you can escape, and only if you are confident that you will be successful
- ❑ Avoid smoke or fumes

- Know the location of the nearest fire alarm pull station and the nearest stairwell.
- When evacuating, calmly walk down the stairs. Do not use the elevators.
- Provide as much information as possible to the fire department: the floor and room number, and if known what material is burning. Also indicate if there are people injured or trapped.
- Extinguishers that have been used should be replaced by full ones by calling Physical Plant Services.

iv. Clothing on Fire:

1. Drench person with water using the safety shower.
2. If no safety shower is immediately available, roll person on the floor to smother flame.
3. Fire blankets must be used with caution because wrapping the body can force flames toward the face and neck
4. Immediately call The Office of Public Safety (212) 650-777. Wrap the injured person to avoid shock and exposure.