Evacuation

Exit Routes

Under the Occupational Safety and Health Administration (OSHA) regulations, exit routes must be:

- At least 28 inches at all points or the width of the exit depending on the maximum occupant load. **Note:** The regulations for laboratories in healthcare settings may be different.
- Free of furnishings or decorations that may be explosive, flammable, or highly combustible.
- Free and unobstructed.
- Free of decorations or signs that obscure visibility.

Question: What is wrong with this picture?

Answer:

- Storage in front of emergency exit
- Storage in means of egress

Fire

What creates a fire?

- Oxygen, which is always present in air.
- Fuel (examples are flammable liquids, gasoline, paper, and wood).
- Ignition sources (examples are electricity and chemical reaction).

How do you prevent fires from happening? One way to avoid a fire is to prevent these three things from coming in contact with each other at the same time. Since oxygen is always present in air, keep fuel and ignition sources away from each other. A simple example of this is a match. In this scenario, oxygen is

present in air, the fuel is the match stick, which is made out of paper or wood, and the ignition source is the spark, which results from the match top hitting the flint on the back of the match book.

Know the fire escape routes from your area including the location of the stairwells, the fire extinguishers, and the nearest alarm pull stations.

Emergency Equipment

The following emergency equipment should **NEVER** be blocked:

- Drench shower
- Eye wash
- Fire extinguisher
- Spill kit
- Pull station
- Alarm strobe
- Sprinkler head

Spills

UMass Medical School and DPH staff must be aware of the correct emergency procedures to take in the event of a chemical spill. Chemical spills, whether toxic, reactive, flammable, or corrosive, even in small quantities can present a potential exposure hazard to staff. Corrosives, such as acids and caustics, can cause severe burns upon contact with skin and/or eyes, and the presence of fumes can be damaging to the respiratory system. Many organic solvents are flammable and release vapors, which are irritating to the eyes and respiratory system.

Reporting

Ensure you are at a safe location before reporting the chemical spill. Please call the Environmental Health & Safety Department (Worcester 856-3985; Jamaica Plain 617-983-6207; Mattapan 617-474-3004 (internal emergency ext. 511)) to report chemical spills.

Provide the following information:

- Location of the spill
- The name of the chemicals
- The amount spilled
- Your name, location, and phone number

If the spill is formaldehyde, or another chemical that is not an acid, a base or a solvent, call the Environmental Health & Safety Department (Worcester 856-3985; Jamaica Plain 617-983-6207; Mattapan 617-474-3004 (internal emergency ext. 511)) immediately before attempting to clean the spill.

Procedures

Chemical spill procedures are provided inside many spill kits. The kits typically consist of the following:

- Acid neutralizers
- Caustic neutralizers
- Solvent absorbents
- Nitrile gloves
- Splash goggles
- Cleanup pans
- A mixer/scraper
- Disposal bags
- A treatment guide

Minor Chemical Spill

The proper procedure for a minor chemical spill response is:

- Alert people in the immediate area of the spill.
- Isolate the area. Remove ignition sources if the spill is flammable.
- Don appropriate personal protective equipment.

- Identify the hazards associated with the spill. Acid? Caustic? Solvent? Formaldehyde? Other?
- Select the appropriate clean-up material:
  - Acid neutralizer for acid (red label)
  - Caustic neutralizer for caustic (blue label)
  - Absorbent for solvents (black label)

If the spill is formaldehyde, or another chemical that is not an acid, a base or a solvent, call the Environmental Health & Safety Department (Worcester 856-3985; Jamaica Plain 617-983-6207; Mattapan 617-474-3004 (internal emergency ext. 511)) immediately before attempting to clean the spill.

Procedure for using clean-up material:

- Encircle and cover the spill with the appropriate absorbent material.
- Mix the absorbent with the mixer/scraper.
- If the spill was an acid or a caustic, test the pH to ensure the spill has been neutralized.
- Use the mixer/scraper to clean up the absorbent material and place inside the disposal bag.
- Place the disposal bag into a hazardous waste bag and place inside your Satellite Accumulation Area (SAA) for proper disposal.

Major Chemical Spill

A major chemical spill is defined as a spill that is likely to produce a harmful concentration of a chemical in the air.

- Attend to injured/contaminated people.
- If flammable, turn off ignition and heat sources.
- Evacuate the laboratory and close doors to the area.
- Move to a safe location.
- Call the Environmental Health & Safety Department (Worcester 856-3985; Jamaica Plain 617-983-6207; Mattapan 617-474-3004 (internal emergency ext. 511)).
- Remain at safe location to answer questions.

Mercury Spills

If you break a mercury thermometer or spill a chemical that contains mercury, call the Environmental Health & Safety Department (Worcester 856-3985; Jamaica Plain 617-983-6207; Mattapan 617-474-3004 (internal emergency ext. 511)) to ensure proper clean up of the mercury release.

Always treat mercury thermometers as hazardous waste. WHY? If a thermometer breaks, it contaminates trash and/or equipment making it hazardous = **COSTLY DISPOSAL!**

NOTE: Please replace any mercury thermometers with alcohol thermometers.

Injury

For chemical splashes to the eye or skin:

- Immediately rinse at eye wash station or safety shower for 15 minutes.
- Report to supervisor and seek appropriate medical assistance.

For medical emergency or personal injury:

- Check the area to verify that it is safe for you to enter/remain.
- Call 911 to report medical or fire emergencies.
- Evacuate if the area is unsafe. Close doors to affected area and prevent unauthorized access. Assign someone familiar with the incident to provide information to emergency responders.
- Do not remove injured person unless there is a danger of further harm from remaining in the location.
- Care for the injured. Remain with the injured until medical assistance arrives. Initiate lifesaving measures, if necessary and if you are trained.

Incident Reporting

- Report any injury or exposure to your supervisor (needlestick, slip/trip/fall, chemical spill).
- Receive medical attention, if applicable.

Codes

If you discover a fire or smell smoke and cannot identify the source, remember **"R.A.C.E."**

- **R**ESCUE
- **A**LARM
- **C**ONTAIN
- **E**VACUATE

RESCUE only people and only if you can do so safely.

Pull the nearest **ALARM**, call out "Code Red" in a loud voice, and call 911.

CONTAIN the fire by shutting all of the doors behind you.

EVACUATE the building using stairs.

Portable Fire Extinguishers

UMass Medical School and DPH **does not require employees to use a fire extinguisher**. However, the following guidelines are presented should an employee choose to attempt to extinguish the fire or need to use an extinguisher to escape from an area.

Fire extinguishers must match the class of fire being fought. Markings on the extinguisher body indicate the classes of fire for which the extinguisher is suited. Using the wrong

extinguisher can intensify a fire condition, such as application of water to burning oil, thereby causing the oil to splatter, flash, and spread.

There is a fire extinguisher within 75 feet of any occupied space in the building. Staff should familiarize themselves with the locations and types provided for their work area.

Before attempting to extinguish a fire:

- Make sure that Code Red procedures **("R.A.C.E.")** are being implemented.
- Make sure that the fire extinguisher is the proper type for the fire being fought.
- Make sure your back is toward a safe, unobstructed exit where the fire will not spread.
- If **ALL** of these criteria are not met, close the door to the fire area, evacuate, and wait for the Fire Department.

If you use a fire extinguisher, remember the **P.A.S.S**. system.

PULL the pin.

AIM the nozzle at base of fire.

SQUEEZE the handle.

SWEEP from side to side.