

Department \_\_\_\_\_

Lab/Room Number \_\_\_\_\_

PI/Lab Coordinator \_\_\_\_\_

After Hours Contact  
Number \_\_\_\_\_

- University Public Safety (Phone 911)
- Fire, Police, Ambulance (Phone 911)
- Hazardous Materials Team (Phone 911)
- Environmental Health & Safety (Phone 335-8501)

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## **911 EMERGENCY**

*If there is a ...  
fire  
explosion  
rescue needed  
serious personal injury  
life threatening situation*

*CALL 911 and..*  
activate alarm system  
warn people to evacuate  
turn off general ventilation if possible  
leave fume hood on  
close windows and doors  
assemble at safe distance  
account for people  
secure area  
collect spill info and MSDS  
wait for/provide information to responders

***In the event of an emergency or disaster, the University of Iowa Department of Public Safety will secure and control the scene.***

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## **SPILL RESPONSE PLANNING**

At The University of Iowa individuals are responsible for their own spills. Each hazardous material user must be ready and equipped to handle a spill. Critical elements for a safe and effective response are: information and knowledge of materials used, adequate spill response supplies, adequate training, and knowing when and who to call for assistance.

The Lab Standard and Right-to-Know Programs require emergency and spill response training. When preparing your response plan consider the location, existing ventilation, and nature of potential spills. EHS is available for guidance and training to facilitate your response planning.

To prepare:

1. Collect **MSDSs** for the hazardous materials you use. Keep them outside the potential spill area. By keeping the chemical inventory up-to-date in EHS Assistant, the active EHS Assistant users can access the inventories from outside the lab and locate MSDS.
2. Understand the properties and hazards of the materials before beginning to use them.
3. Maintain a **call list** (daytime and after-hours) of individuals who should be notified in an emergency.
4. Collect and maintain **spill response supplies**. Sources include: lab safety suppliers, Biochemistry, and Chemistry Stores.
5. Know the location of and how to use emergency equipment such as emergency showers and eye washes.
6. **Train and practice** for effective spill response.

Contact EHS (335-8501) with questions regarding spill response planning.

Although most spills can be managed by trained personnel in the area of the spill, EHS may be used as a resource to guide you through cleanup of your own simple spill. When calling EHS for spill response guidance, it will be given in one of two ways:

- Guidance will be given on the phone or in person to help you safely manage and clean up a simple spill (one that is not endangering people or the environment and is not spreading rapidly) or;
- You may be advised to call 911, evacuate, and wait for emergency responders. Responders will contain the spill to control immediate health and environmental hazards. If additional cleanup or decontamination is required, the individual or department responsible for the spill would complete cleanup or, if unable, contract with specialized cleanup services.

## HOW TO RESPOND TO SPILLS

### Attend to personal injuries

#### **Clothing on fire**

Roll person on floor to smother flame, drench with water if immediately available.

#### **Splash in eyes**

Immediately rinse eyes with water continuously for 15 minutes. Forcibly hold eye open to rinse behind eyelids. Obtain medical attention.

#### **Spill on body**

Remove contaminated clothing and flood exposed area with running water from faucet or safety shower for 5 minutes. Make sure spill has not accumulated in shoes. For biological spills, wash with soap.

#### **Minor cuts and puncture wounds**

Wash vigorously with soap and water.

**Report all personal injuries to your supervisor.**

**Medical attention is available 24 hours at UIHC Emergency Treatment Center, telephone 356-2233**

### Assess the risk

**Simple spills** meet all these criteria:

- do not spread rapidly
- do not endanger people or the environment except by direct contact
- can be managed safely by people trained to use the material

**Major spills** meet any one of these criteria:

- spread rapidly
- involve a personal injury or rescue
- endanger people or the environment
- present an inhalation hazard
- has created significant contamination for personnel (radioactive materials)

### Initiate action

#### **Simple spill**

- keep the area clear
- notify any affected people
- plan your cleanup
- call EHS for advice, if needed

#### **Major spill**

- dial 911
- activate alarm, evacuate, and assemble at a safety distance
- account for people; warn others not enter
- wait for and provide information to responders

# **RADIOACTIVE SPILLS**

## **General guide for radioactive spills**

- restricting movement of all personnel is essential; movement of people around a radiation spill can spread radiation beyond spill area
- consider persons in area contaminated until monitoring proves otherwise
- dispose of cleanup materials as radioactive waste
- report all spills to supervisor

## **Simple spills**

A Simple Radioactive Materials Spill is one that is manageable and can be cleaned up as a non-emergency.

Simple Spill description includes:

- can be safely managed by knowledgeable personnel
- personnel contamination can be prevented and controlled
- minimal potential to endanger personnel or the environment
- spread can be contained and controlled
- area can be isolated and cleaned up under non-emergency conditions
- personnel exposure to volatile material can be prevented

## **Simple Radioactive Materials Spill Actions**

- alert people in the spill area
- monitor them for contamination using a survey meter and decontaminate as necessary
- wear protective apparel; place absorbent pad over liquid spills, damp absorbent pad over solid spills
- place spilled material in a radioactive materials waste container; then clean with normal lab cleaning agents, working from outer spill edges inward
- monitor area and personnel
- repeat cleanup until no contamination is detected
- notify EHS at 335-8501 and your PI or supervisor

## **Major Spills**

A Major Radioactive Materials Spill or emergency meets any one of the following criteria:

- spreads rapidly
- endangers people or involves serious personal injury
- endangers the environment
- has created significant personnel contamination

## **Major Radioactive Materials Spill Actions**

- evacuate the area; close doors and prevent entrance into area
- have potentially contaminated people stay in one area until they have been monitored
- call 911 immediately; notify EHS at 335-8501 as soon as possible.

# BIOLOGICAL SPILLS

## General guide for biological spills

- wash hands/face before and after cleanup
- put on fresh pair of disposable gloves before starting cleanup
- a 10% household bleach solution is commonly used as a disinfectant; allow 20 minutes contact time (however, use the recommended disinfectant for the material you are handling)
- Dispose of cleanup materials as biohazard waste, autoclave before removal from area
- Report all spills to the supervisor

## Spills *inside* a BSC

- Follow general guidance above
- keep cleanup materials inside BSCs (removing hands from inside cabinet disperses aerosols outside cabinet)
- leave BSC running during cleanup and at least 10 minutes after completion
- work cautiously and thoroughly, taking care not to spread the spill area and not to disturb the air at the face of the BSC
- use clean cloth and disinfectant solution to wash interior surfaces
- for moderate to high risk spills, flood catch basins (tray under the work surface) with disinfectant and wipe up

## Spills *outside* a BSC

Spills *outside* a biological safety cabinet (BSC) generate aerosols, creating a greater hazard than spills *inside* a BSC.

The spilled organism's biohazard risk group determines the cleanup method and level of containment [e.g., risk group 2 requires Biosafety Level 2 (BSL2) procedures].

### **BSL1 containment required**

- decontaminate with disinfectant
- clean up with disposable towels and
- disinfect/clean area again

### **BSL2 containment required**

- alert people in spill area
- evacuate for 30 minutes
- notify EHS's Biosafety Section Program Manager - Haley Sinn at 335-9553)
- wear gloves, lab coat, goggles, and shoe covers (if necessary) to:
  - isolate spill area
  - apply absorbent to prevent spreading
  - pour disinfectant around spill edges
  - cover with disinfectant-soaked paper towels
  - work from edges inward
  - clean area again with disinfectant, allowing 20 minutes contact time

## CHEMICAL SPILLS

### General guide for chemical spills:

- isolate the spill area; alert others
- determine identity of spill material; consult MSDS to determine potential hazards
- avoid breathing vapors, get as much fresh air into area as you can safely
- establish ventilation to the outside if safe; prevent the contaminant from spreading through building
- absorbents and neutralizing agents must be compatible with chemical spilled
- prevent spilled chemicals from going down drains to avoid affecting the environment
- dispose of cleanup materials as chemical hazardous waste; small volumes of dilute acids and bases may be neutralized (pH 6-8) and sewered
- call EHS for hazardous waste pickup or for guidance on cleanup or air monitoring

### Simple spills--*liquid*

- alert people in area
- wear protective equipment
- contain by diking with appropriate absorbent
- flammable--remove ignition sources (burners, motors, anything that could cause a spark); use plastic or nonmetallic cleanup equipment
- absorb or neutralize with appropriate agent working from outside edges inward; sorbents do not remove toxic or flammable hazards; neutralization can produce heat causing boiling and splattering

acid—use sodium bicarbonate or acid spill kit

base—use sodium bisulfate, citric acid, or base spill kit

formaldehyde--absorb or use polymerizer

### Simple spills--*dry*

- if not water reactive, dampen to prevent airborne dust
- control water reactive dust with sweeping compound
- carefully brush solids into a dust pan or container
- keep dust generation down to prevent creating inhalation hazard

### Compressed gas leak--*simple*

- presents no or only minimal inhalation or fire hazard
- remove ignition sources
- restrict access
- place in or next to fume hood if possible; tighten fittings
- locate leak with soapy water (at below freezing temperatures use 50% glycerine solution)
- if cylinder still leaks, contact supplier
- notify your supervisor

### Compressed gas leak--*major*

Large or uncontrollable leak or fire hazard, involves acutely toxic gas, and/or more than minimal personal risk

- alert others to evacuate
- call 911
- turn off ignition sources
- leave fume hoods running; ventilate the affected area prior to leaving the area (only if it can be done safely and only to the outside)
- evacuate; assemble in a remote location; account for people
- provide information to emergency responders

### **Mercury**

Large or heated spills can be an inhalation hazard

- isolate area to prevent tracking
- wear gloves and shoe covers (if on floor)
- consolidate and collect droplets using scraper, cardboard, wet paper towel, aspirator bulb, tape or special sponge from Biochemistry Stores
- place all waste in sealed container; contact EHS for a hazardous waste pickup

### **Major spills**

Evacuate, call 911, and wait for responders.

# LAB RESPONSE PLAN

Lab/Room Number \_\_\_\_\_

Material Safety Data Sheets (MSDS) Access:

**Internet:** <https://research.uiowa.edu/ehs/msds>

Location of Our Lab \_\_\_\_\_

## Spill Kit

Location \_\_\_\_\_

Maintained by \_\_\_\_\_

Spills that require special handling

\_\_\_\_\_

## Call Lists:

Name \_\_\_\_\_

Daytime Number \_\_\_\_\_

After-hours \_\_\_\_\_

Name \_\_\_\_\_

Daytime Number \_\_\_\_\_

After-hours \_\_\_\_\_