

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)

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.

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 (Carol McGhan or Haley Sinn at 335-8501)
- 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 _____