Chemical Spills

Type of Chemical Spills

NOTE: This fact sheet only applies to chemical spills. It does not apply to radiological or biological spills. See the HSRM website for instruction.

There are three types of chemical spills that may occur in the laboratory: **emergency spills**, **non-emergency spills requiring assistance from HSRM**, and **non-emergency spills that laboratory personnel can cleanup**. Determining which type of spill has occurred is an important process that depends on the following factors:

- Hazards of chemical spilled such as non-hazardous buffer solution vs a high hazardous chemical such as a reactive or highly toxic chemical
- Amount of chemical spilled
- Location of spill (*i.e.,* in a lab that can be secured or in a public hallway)
- Whether the employee has training and understands the hazards of the spilled chemical
- Whether there are any injuries and/or chemical exposures associated with the spill

When in doubt, always err on the side of caution and dial 911. The following sections detail the procedures for each type of spill.

Emergency Chemical Spills

An emergency chemical spill is a spill that threatens human health and/or the environment because of its chemical properties and/or volume of material spilled, and requires emergency personnel response. Examples of an emergency chemical spill include:

- Spill that causes a serious injury
- Spill that involves a fire and/or explosion
- Spill involving a high hazard chemical such as a pyrophoric, dangerous when wet, acutely toxic material, or an unknown chemical
- Spill is large (generally > 1 liter)
- Spill involving a hazardous material in a public space such as a hallway or classroom

In the event of an emergency chemical spill, the following procedures must be followed:

1. Cease all activities, isolate the spill, and notify others in the immediate area of the spill.
2. Evacuate the area.
3. Activate the closest fire pull station (where present) if building evacuation is required (*i.e.,* the spill could endanger others outside of the immediate area).
4. **Dial 911.** Provide details to the dispatcher such as the extent of any injuries that may be involved, name and volume of chemical spilled, and the exact location of the incident.
5. Attend to any persons who may have been exposed or injured by following first aid procedures.
6. Provide pertinent information to emergency response personnel upon arrival.

Non-Emergency Chemical Spills Requiring Assistance from HSRM

A non-emergency chemical spill requiring assistance from HSRM is a spill that cannot be safely cleaned up by lab personnel because of its chemical properties and/or volume of material spilled, but does not threaten human health and/or the environment. Examples of non-emergency chemical spills requiring assistance from HSRM include:

- Spills that are contained in a lab, but require PPE (*e.g.,* air-purifying respirator, chemical-resistant coverall) and/or equipment to safely cleanup that the lab does not have access to.
- Spills that involve elemental mercury (*e.g.,* thermometer break).
- Spills that involve a relatively high volume of a low hazard chemical. For example, 5 gallons of pump oil is spilled in the lab. While this does not present an emergency situation, most labs do not have the equipment and/or supplies necessary to successfully clean up a spill like this.
- Spills that involve lab personnel who are not trained to clean up spills and/or do not fully understand the hazards of the chemical(s) involved.

In the event of a non-emergency chemical spill requiring assistance from HSRM, the following procedures must be followed:

1. Cease all activities and notify others in the immediate area of the spill.
2. Evacuate the area if necessary. Post signs in the area (*e.g.*, exterior lab doors, fume hood) notifying others to not enter.
3. Call HSRM (612-626-6002) to report the spill. The phone auto-attendant will provide instructions on how to contact HSRM on-call personnel. If you are unable to contact HSRM, dial 911 and report that you have a non-emergency chemical spill and need assistance with cleanup.
4. Wait for HSRM personnel to arrive and provide details of the spill.

Non-Emergency Chemical Spills that can be Cleaned up by Lab Personnel

A non-emergency chemical spill that can be cleaned up by lab personnel is a small spill (generally < 1 liter) that is contained, involves a chemical that lab personnel are qualified to handle, does not threaten human health and/or the environment. In the event of a non-emergency chemical spill that can be cleaned up by laboratory personnel, the following procedures must be followed:

1. Review the safety data sheet for the chemical spilled to evaluate the hazards. Contact HSRM (612-626-6002) if you have questions or need advice.
2. If the spill involves flammable material, remove all potential sources of ignition.
3. Don the appropriate PPE based on the hazards of the chemical spilled. Make sure that you select PPE that resistant to the chemical.
4. Control and clean up the spread of the spill by placing absorbent materials such as pads or a neutralizing agent (*e.g.*,
   soda ash or sodium bicarbonate for acids and citric acid or ascorbic acid for bases) on and around the spill.
5. Collect all spill cleanup material, place into a plastic bucket or other suitable container, and submit to the Regulated Waste Division for proper disposal.