

MERCURY SPILLS

RESPONDING TO MERCURY SPILLS

Elemental mercury is a potent neurotoxin that can cause adverse health effects in very small amounts. People can be exposed to mercury if instruments or equipment containing mercury break and release mercury-containing dust, liquid, or vapor. Health effects from mercury exposures can include central nervous system disorders, reproductive effects and kidney damage.

Spills must be addressed quickly and completely by following safe cleanup procedures. If you are trained to manage a small mercury spill on a smooth surface, such as a thermometer break on a linoleum floor, obtain a **mercury spill kit** and follow the procedures listed below.

If the spill is difficult to manage, like spills on porous surfaces such as unsealed concrete, unfinished wood, carpet or fabric, see the section below on "Spill Cleanup Instructions: Difficult to manage mercury spills."

OBTAINING A MERCURY SPILL KIT

VWR carries a custom mercury spill kit (VWR part # 470221-666) via the UW Ariba system.

EH&S designed this kit for small elemental mercury spills, such as those from a broken mercury thermometer. It costs about \$30 and contains the following items:

- Large nitrile gloves
- 500g Hg absorbent powder
- Ziploc bags 9"x13"
- Small scoop/scrapper
- Syringe aspirators
- Chemical Collection Request Cloth sponge
- Booklet of UW Hazardous Waste Labels

Because this spill kit is a special item, it is not in the general catalog. This spill kit is also available at the Chemistry Stockroom (Bagley Hall 036 via part #4225) and Biochemistry Stores (Health Sciences J014 via part# 470221-666).



WHEN CLEANING UP A MERCURY SPILL

- **Never** walk around in an area that is contaminated with mercury. Mercury is easily spread and the spill area may not be easily identified. Contaminated clothing can also spread mercury to other locations.
- **Never** use an ordinary vacuum cleaner to clean up mercury. The vacuum will put mercury vapor into the air and increase exposure. The vacuum cleaner will be contaminated and will have to be disposed of as hazardous waste.
- **Never** use a broom to clean up mercury. It will break the mercury into smaller droplets and spread them over the spill area.
- **Never** pour mercury down a drain.
- **Never** wash mercury-contaminated items in a washing machine. Mercury may contaminate the machine and/or pollute the water system.

CONTACT EH&S

On the Seattle campus, call EH&S at 206.543.0467 (Monday through Friday, 8:00 a.m. to 5:00 p.m.).

- Outside of business hours, call UWPD at 911 from a campus phone.
- At medical centers and other locations follow internal emergency procedures.

Any spill incident requires the involved person or supervisor to complete and submit the **Online Accident Reporting System (OARS)** form to EH&S within 24 hours (or eight hours if serious injury or hospitalization).

SPILL CLEANUP INSTRUCTIONS: FOR SMALL MANAGEABLE MERCURY SPILLS

Initial steps

1. Keep everyone away from the room to prevent the spread of contamination. Mark or tape off the spill area to prevent others from walking through or touching the spill.
2. Close any doors to isolate the room as long as you can do so without walking through the spill.
3. Post sign(s) to not enter the area. Notify supervisor and others that use the area.
4. Before exiting the room, look for mercury on clothing and the bottom of shoes. Remove all contaminated shoes and clothing and double-bag it. EH&S will monitor clothing and shoes for contamination after the cleanup is complete.
5. If you or anyone has come in contact with mercury or suspect that you have been contaminated, shower or at least wash thoroughly before changing into fresh clothes.

Cleanup procedures

6. Put on nitrile gloves, a lab coat and eye protection. Put on disposable, non-porous shoe covers (plastic bags may work for this). Never walk around in a contaminated area without shoe covers.
7. Inspect the area to determine extent of contamination. Use a flashlight to look for mercury beads. The light will reflect off shiny mercury beads to make it easier to see them. Start at least one foot behind where you believe the contamination starts. Turning off lights in the room may help to see the droplets. If you cannot find the mercury, contact EH&S at 206.543.0467 for assistance.
8. Contain the spill to as small of an area as possible. Prevent it from spreading into drains, cracks or crevices, onto sloped or porous surfaces, or any other inaccessible areas. Do not sweep with a broom or use a household vacuum to manage the spill. Do not let mercury go down a drain.
9. Work from the outside of the spill area to the center of the spill area. Using a scraper to push scattered mercury beads together into larger droplets. Aspirate the larger mercury droplets with the syringe aspirator and place them into a waste Ziploc bag or screw top container.
10. If the spill involves glass pieces, such as from a glass thermometer, carefully place them on paper towel, fold up and place in same waste bag or container as the mercury droplets.
11. Sprinkle mercury absorbent powder lightly over area to absorb the smallest mercury droplets. Spray a water mist over the powder to activate the powder.
12. Using the scraper, mix the materials into a paste, and scoop up the paste. Wipe down the surfaces with the dampened sponge.
13. Bag shoes or clothing that may be contaminated. EH&S will use monitoring equipment to determine if clothing and shoes are contaminated with mercury.
14. Place the paste, sponge, scraper, scoop, shoe covers, gloves and all other mercury contaminated debris into the waste Ziploc bag. Tape the sharp ends of the broken glass thermometer before placing it in the waste bag. Seal the bag and place it inside of another plastic bag or place the waste bag inside of a plastic bucket with lid.
15. Wash your hands. Shower if other parts of your body may have come into direct contact with mercury.
16. Label the outer bag or container with a UW hazardous waste label. Identify the waste as "mercury thermometer spill debris". Complete either an Online Chemical Waste Collection Request or a Chemical Collection Request Form (PDF). Email the form to chmwaste@uw.edu.
17. Submit the Online Accident Reporting System (OARS) form to EH&S within 24 hours (or eight hours if serious injury or hospitalization) regardless of the size of the spill and regardless if injuries occurred or not.
18. Before assuming the shoes, equipment or the floor is clean, contact EH&S at 206.543.7388 (Monday through Friday from 8:00 a.m. to 5:00 p.m.) to request air monitoring. Even trace amounts of mercury left behind may result in mercury vapor concentrations above regulated exposure limits in your workplace.
19. A spill contractor may be necessary in larger spills or spills impacting hard to reach areas. If a spill contractor is needed call the EH&S spill line at 206.543.0467 for assistance.



SPILL CLEANUP INSTRUCTIONS: FOR DIFFICULT TO MANAGE MERCURY SPILLS

Type of spill	Initial steps
<p>Spills on porous surfaces¹</p> <p>Large spills²</p> <p>Spills in common areas or corridors</p>	<ol style="list-style-type: none"> 1. Keep everyone away from the room to prevent the spread of contamination. Mark or tape off the spill area to prevent others from walking through or touching the spill. Close any doors to isolate the room as long as you can do so without walking through the spill. Post sign(s) to not enter the area. Notify supervisor and others that use the area. 2. Before exiting the room, look for mercury on clothing and the bottom of shoes. Remove all contaminated shoes and clothing and double-bag it. EH&S will monitor clothing and shoes for contamination after the cleanup is complete. 3. If you or anyone has come in contact with mercury or suspect that you have been contaminated, shower or at least wash thoroughly before changing into fresh clothes.
<p>Heated spills</p>	<ol style="list-style-type: none"> 1. Shut off the equipment. If the equipment is small enough, place it in a fume hood. Leave the area immediately. 2. Close any doors to isolate the room as long as you can do so without walking through the spill. Post sign(s) to not enter the area. Notify supervisor and others that use the area.
<p>Spills into drains</p>	<ol style="list-style-type: none"> 1. Shut off water to the sink or drain. Cover or plug the drain if possible. 2. Mark or tape off the spill area to prevent others from using the sink or drain. Post sign(s) to not enter the area or use the sink or drain. Notify supervisor and others that use the area.

¹Porous surfaces include carpeting, fabrics, unfinished wood, unsealed concrete, or similar surfaces. Mercury cannot be completely removed from carpeting. The contaminated carpeting must be carefully removed and disposed of as hazardous waste.

²A large spill is a quantity larger than the amount of mercury in a laboratory thermometer.

For difficult to manage mercury spills, EH&S will arrange for a spill cleanup contractor to conduct mercury vapor monitoring and the cleanup. EH&S will ensure post-cleanup monitoring was also conducted to ensure the cleanup was thorough. Even trace amounts of mercury left behind may result in mercury vapor concentrations above regulated exposure limits. Contractor expenses will be charged to the lab, clinic or shop.

For information about responding to broken mercury-containing fluorescent and other lamps, and recycling of used, whole or unbroken mercury-containing lamps, see the EH&S website.

Contact EH&S Environmental Programs at 206.616.5835 or visit www.ehs.washington.edu.