



Mercury Spill Information and Cleanup Guidance

May 2007

Background Information

Mercury can be found in a variety of household, commercial and industrial items such as fever thermometers, thermostats, and fluorescent light bulbs. Also, some people keep liquid (elemental) mercury in bottles and other containers. See www.recycle.in.gov (look in Recycling Topics for Mercury information) for more information on mercury-containing items. Although, mercury performs many useful functions, it is toxic to humans and wildlife and should be managed properly.

When liquid (elemental) mercury is spilled, it forms beads or droplets that can accumulate in the tiniest places. These droplets can emit vapors into the air that we cannot see or smell. Breathing mercury vapors can be very dangerous, depending on how much mercury is in the air and how long you breathe the contaminated air. Entire families have been poisoned from mercury spills. Small children and pregnant women are at highest risk for mercury poisoning, but mercury poisoning can impact anyone.

Amount of elemental mercury in various items:

Fluorescent light bulb – 10-40 milligrams of mercury (.01 - .04 grams of mercury)

Fever thermometer - .5 - .7 grams of mercury

Thermostat – approximately 3 grams of mercury

Sphygmomanometer (blood pressure measuring device) – hundreds of grams of mercury

The small amount of elemental mercury in fever thermometers and thermostats is not likely to cause serious health problems if it is immediately cleaned up. The mercury in a broken fluorescent light bulb is not readily visible, but broken bulbs should also be cleaned up immediately.

Most small mercury spills (fever thermometers) can be cleaned up easily. Please follow these instructions for cleaning up a small household mercury spill.

NOTES:

- **NEVER use an ordinary vacuum or shop vacuum to clean up mercury.** Vacuuming mercury will blow vapors into the area, thereby increasing the likelihood of human exposure, and will also contaminate the vacuum cleaner. A contaminated vacuum cleaner should be taken to a mercury collection program. Contact your local household hazardous waste program for information about your local mercury collection program.

- NEVER use a broom or a paintbrush to clean up mercury. It will break the mercury into smaller beads and further scatter the mercury.
- NEVER use household cleaning products, especially those containing chlorine or ammonia, because they may react violently with the mercury and release toxic gases.
- NEVER allow people whose shoes or clothing may be contaminated with mercury to walk around your house.
- NEVER put mercury in the trash.
- NEVER put mercury in a burn barrel.
- NEVER pour or allow mercury to go down a drain.
- Mercury can get in to the ductwork of a forced-air heating/cooling system.
- Get an experienced professional to clean up big spills! A big spill is one that is two tablespoons or more of mercury. A spill of this magnitude in a household should be considered very serious. If the mercury spill is on a porous surface such as a carpet, or if the mercury droplets are widely dispersed in a room, it would also be wise to call for professional assistance immediately. Call the IDEM Spill Hotline at (888) 233-7745 for assistance.

Household Hazardous Waste Programs

Solid waste management districts (SWMDs) and some Indiana communities provide household hazardous waste and mercury collection services. To find out about local mercury collection programs go to www.recycle.in.gov (look in Recycling Topics for Mercury information) or call (800) 988-7901.

Suggested equipment and supplies for a mercury spill clean up:

- Latex or rubber gloves
- Tweezers
- Goggles
- Damp paper towels
- rubber squeegee
- plastic dust pan
- plastic trash bags
- zipper-shut plastic bags
- flashlight
- wide-mouth plastic container with screw-on lid
- large tray or box
- eye dropper or other suction device such as a turkey baster
- index cards, playing cards, or other rigid paper
- sulfur powder
- tape – electrical or duct tape works best

Fluorescent Light Bulb Breakage

Breaking a fluorescent light bulb is different than breaking a thermometer, thermostat or other item with elemental or liquid mercury in it. You will not be able to see the mercury. A 4-foot fluorescent light bulb contains 3-36 milligrams of mercury.

If you break a fluorescent light bulb, follow these steps:

1. Scoop up the glass and all other pieces of the broken light bulb. Use gloves to protect against

- cuts from the glass.
2. Put all the pieces of the broken bulb into a rigid container such as a five-gallon bucket or old paint can. Seal the container with a lid. Put the container out in the garage or storage area that is not in your living area.
 3. Air out the incident room for 12 to 24 hours.
 4. Take the broken bulb and other clean up materials such as gloves to your local household hazardous waste program for recycling. For a listing of HHW programs, go to IDEM's web site at www.recycle.in.gov (look in Recycling Topics).

Mercury Spill Information and Cleanup Guidance

1. Keep everyone, especially kids and pets, away from incident room to prevent the spread of contamination. Before sending anyone out of incident room, check for mercury on clothing and the bottom of shoes. If mercury is visible on any article of clothing or shoes, remove the articles from the person and keep the articles in the incident room.
2. Keep the incident room under 70 degrees F to minimize mercury evaporation. Close all heating/air conditioning vents in the incident room until your cleanup is finished. If the vents can't be closed, turn off central ventilating or air conditioning systems that could circulate air from the spill area to other parts of the home or building.
3. Close the inside doors of the incident room. If weather allows, open exterior doors and windows if there are any. Use a fan in the incident room to move the inside air to the outside. Keep air flowing through the incident room.
4. If you or any other person has come in contact with the mercury, stay in the area so you don't spread the contamination.
5. If you cannot see the mercury, use a flashlight to look for mercury beads. Shine the flashlight at different low angles on the spill area. The light will reflect off the shiny mercury beads to make it easier to see them. For best results, turn off other lights in the incident room.
6. If you cannot find the mercury:
 - A. If the spill is from a fever thermometer, ventilate the room for at least 24 hours moving air through the incident room to move the mercury vapors outside. Make sure to keep doors closed so other areas of the house are not contaminated with mercury vapors from incident room. Proceed to Step 13.
 - B. If the amount of spilled mercury is more than a fever thermometer, consider the entire room contaminated and call the IDEM Spill Hotline at (888) 233-7745 for professional assistance.
 - C. If you think the mercury may have been spread outside the original spill area, call the IDEM Spill Hotline at (888) 233-7745 for professional assistance.
7. Contain the spill. Dike the mercury using rags or other disposable items to prevent spreading. Make sure the mercury does not move to drains, cracks or crevices or on to sloped or porous surfaces. If you leave the incident room, make sure your clothes and shoes are not contaminated with mercury.

8. If the mercury was spilled on a hard surface:
 - A. If the mercury spill involves glass pieces, such as from a glass thermometer or a glass ampoule from a mercury thermostat, use tweezers to safely pick up any broken glass and place it in the plastic bag or container.
 - B. Work from the outside of the spill area to the center of the spill area. Push the mercury beads together with a card, stiff paper, or squeegee to form larger droplets. Mercury beads roll very quickly, so be careful! Push the mercury beads into a plastic dustpan or use an eyedropper or turkey baster to pick up the beads. If you use an eyedropper, hold it almost parallel with the floor or it will not work very well. You can also use tape to pick up the little beads of mercury, but be careful because they might not always stick. Collect all mercury into a leak-tight plastic bag or wide-mouthed sturdy plastic container with a screw-on lid.
 - C. When you think you've picked up all of the mercury, shine a flashlight (at different low angles) on the area to help find any remaining mercury beads or glass. The light will reflect off the shiny mercury beads and glass.
 - D. Optional step: Sprinkle sulfur powder (available at some lawn and garden stores) on the spill area after cleaning up the beads of mercury; a color change from yellow to brown indicates that mercury is still present and more cleanup is needed. If the sulfur powder stays yellow, you may stop clean up efforts.
9. If the mercury was spilled on a porous surface such as hardwood flooring, the mercury can seep into cracks and crevices. In this case, the mercury cannot be completely removed and, if possible, should be sealed into the surface with epoxy paint, polyurethane or other sealing agent. Call IDEM or ISDH for more information on this option.
10. If the mercury was spilled on carpet or other cloth material:
 - A. If the item is removable and disposable (small rug, furniture cover, sheet, etc.) and the mercury beads are still visible, gather up the material carefully with the mercury in the middle of the item and put it in a trash bag. Tightly seal the bag and save for recycling. If the mercury is not visible, you should hang the item outside to air out thoroughly for at least 24 hours.
 - B. If the item is not removable (carpeting, furniture, etc.), use an eyedropper or turkey baster to collect the visible mercury beads. If possible, use a squeegee or rigid paper such as playing cards or business cards to collect the mercury. You can also use tape to pick up the little beads of mercury, but be careful because they do not always stick. The only way to make sure you remove all the mercury is to cut out the area of carpeting, furniture, etc. that had the spill. You may choose to get the air tested from the Indiana State Department of Health (ISDH) Indoor and Radiological Health at (317) 351-7190, ext. 255.
 - C. Use a flashlight to look for mercury beads that you may have missed. The light will reflect off the shiny mercury beads to make it easier to see them.
 - D. Place the mercury into a leak-tight plastic bag or wide-mouthed sturdy plastic container with a screw-on lid.

11. If the mercury was spilled over a drain or sink that goes to your wastewater treatment plant or septic system, look in the “J” traps or “S” traps for liquid mercury. If the mercury is in your plumbing, it will slowly evaporate into your house. Be careful when taking apart your plumbing. Mercury is very slippery and will easily spill out of the trap! Working over a tray, bucket, or piece of plastic, remove the trap. Ideally you should place the trap and its contents in a sealable plastic container and replace the trap. Put the container inside two plastic bags (one inside the other). Dispose of the old trap and its contents as hazardous mercury waste and install a new trap. If you do not replace the trap, hold the pipe above a sealable collection container such as a large butter tub to catch the liquid mercury. You may need to use something to move the mercury out of the pipe. Dispose of the container and its contents as hazardous mercury waste.
12. If the spill was in a sink of water: remove as much of the water as possible without disturbing the mercury beads. Use a turkey baster or a small disposable cup. The water that is removed will not be contaminated as metallic mercury is not soluble in water. Recover the mercury beads with an eyedropper and place them in a non-breakable container. Once all the visible mercury has been recovered, drain the water to the sewer.

DISPOSING OF MERCURY-CONTAINING MATERIAL

13. Anything that has come in contact with mercury, including all clean up materials, must be taken to a recycling facility or household hazardous waste facility. You can air out clothing by hanging items outside, but you may not remove all the mercury from the items. If you do not know where your local facility is, call IDEM at (800) 988-7901 during normal business hours or go to IDEM’s web site for an up-to-date listing of all household hazardous waste programs at www.recycle.in.gov (look in Recycling Topics for Mercury information).

FINAL STEPS

14. Inspect your shoes and clothing for mercury. If you find mercury and cannot remove the mercury from these items, dispose of them properly at a mercury recycling center.
15. Continue to air out the spill room with outside air for 48 hours if weather permits.
16. After you finish your mercury clean up, wash your hands. If other parts of your body may have come in contact with mercury, shower or bathe.

Additional Resources

For further information on human exposure to mercury, please call the Indiana Poison Center at (800) 222-1222. The Poison Center line is staffed 24 hours/day, 365 days/year.

Small spills can usually be cleaned up easily. In most cases, air testing is not necessary. If you are an Indiana resident, you can request air testing from the Indiana State Department of Health (ISDH) Indoor and Radiological Health at (317) 351-7190, ext. 255.

If you need further spill advice or if you have had a big mercury spill, you may call the Indiana Department of Environmental Management (IDEM) Spill Line at (888) 233-7745 or (317) 233-7745. The Spill Line is staffed 24 hours/day, 365 days/year. IDEM personnel will determine if IDEM and/or US EPA Region 5 from Chicago should be called in to perform a more thorough

cleanup operation.