



**Bureau of Environmental Health
and Radiation Protection**

“Protect and improve the health of all Ohioans by preventing disease, promoting good health and assuring access to quality care.”

*Small Mercury Spills

* Residential thermostat switch and common fever thermometer

Follow the steps below for a small mercury spill

*Small mercury spills are spills less than three grams. Three grams is the approximate weight of mercury found in a residential thermostat switch and a common fever thermometer contains approximately 0.6 grams of mercury.

IMPORTANT NOTE: Pregnant women and children should be removed from a spill site. If a resident has already vacuumed the mercury spill, walked through the spill or otherwise extended the spill beyond its initial location, contact the Ohio EPA’s Spill Hotline at 1-800-282-9378.

1. Evacuate the spill area

Before people leave the room where the mercury was spilled, be sure shoes, clothing and other articles have not been splashed with mercury. If any mercury was splashed on shoes, clothing, etc., remove the contaminated articles of clothing so you do not track mercury outside the spill room. Secure the scene by using barrier tape or plastic over the doors and restrict admission to only those persons necessary to clean up the spill.

2. Turn off building air circulation systems

Avoid ventilating and circulating the air from the spill room to other parts of the building.

3. Close/seal interior doors and windows

Close any window or door that leads to other rooms or areas of the building and seal the open space below the doors with a rolled up towel or blanket.

4. Open exterior windows and doors

Open any window or door that leads to outside air. Place fans in windows, forcing the indoor air outside.

5. Dress appropriately

Remove all jewelry from hands and wrists so the mercury does not combine (amalgamate) with other metals. Change into old clothes and shoes that can be discarded if they become contaminated. Put on rubber gloves and goggles or safety glasses.

6. Contain the mercury spill

Surround and contain the mercury spill and try to prevent liquid mercury from running into cracks, crevices and drains.

7. Pick up all visible mercury droplets

Inspect the spill zone with a bright light to help illuminate any hidden droplets. Clean up any metallic beads of mercury by scraping the mercury toward the center of the spilled area away from any carpet, fabric or porous surfaces. You can use a plastic squeegee, plastic dust pan or stiff index card. If necessary, the droplets can be suctioned by using an eye dropper or syringe without a needle. Adhesive tape strips may also be used to clean up any tiny remaining mercury droplets.

- Check carefully for missed mercury.
- Set aside everything you think might be contaminated with mercury, double or triple wrap these items and discard appropriately (see Mercury Disposal section).

8. Carefully transfer the mercury into an unbreakable plastic air-tight container

Place the plastic container inside a second plastic container to provide additional containment protection. Tighten each lid securely so that liquid and vapors will be contained. You can use a 35mm film canister with a locking or air tight lid or Tupperware-type container (avoid using glass, wood or cardboard).

9. Place the mercury container(s) into a zip-top plastic bag

This should ensure that in the event of any leakage, all mercury will be safely contained within the zip-locked packaging. Store in a secure place away from children and safely dispose (see Mercury Disposal section).

10. Remove and dispose of contaminated carpeting

Carpet or other porous materials can absorb or hide mercury spills. It may be necessary to cut out and remove contaminated areas of the carpet where the spill incident occurred. Double or triple wrap these contaminated sections of carpet in plastic trash bags and safely dispose (see Mercury Disposal section).

11. Sprinkle fine sulfur or zinc powder on the spill site

These powders will bind to any remaining mercury. You can find this powder in mercury spill kits or purchased separately from garden supply stores or chemical supply houses. Scrape up all powder and dispose with the other contaminated spill items. **NOTE: Dusting an area with powders can help identify and bind liquid mercury. But until that powder is picked up and removed, mercury vapors can be produced.**

Never do any of the following:

- NEVER USE A HOUSEHOLD VACUUM CLEANER OR SHOP VAC® TO CLEAN UP MERCURY!
- NEVER WASH MERCURY-SOILED ITEMS IN THE WASHING MACHINE!
- NEVER USE A BROOM ON A MERCURY SPILL BECAUSE IT WILL SCATTER THE

MERCURY DROPLETS AND MAKE THEM HARDER TO FIND AND PICK UP!

- NEVER POUR MERCURY DOWN THE DRAIN!
- NEVER HEAT OR INCINERATE SOILED ITEMS!

Is there a test to show how much mercury has vaporized (turned into a gas)

Yes. Environmental health and regulatory agencies use a real-time mercury vapor analyzer, employing atomic absorption technology, to measure levels of mercury in the air. This mercury vapor analyzer may also be used after a spill cleanup to test the air to see if it safe for re-occupancy.

If the spill was contained and properly cleaned, testing may not be necessary for spills as small as a broken fever thermometer. However, if a homeowner wants to ensure there are no mercury vapors present; their residence would need to be tested with a mercury vapor analyzer.

How does mercury affect your health?

The nervous system is very sensitive to all forms of mercury. Methylmercury and vapors from metallic mercury are more harmful than other forms because more mercury in these forms reaches the brain. Exposure to high levels of metallic, organic or inorganic mercury can permanently damage the brain, kidneys or a developing fetus. Effects on brain functioning may result in irritability, shyness, tremors, changes in vision or hearing and memory problems.

Short-term exposure to high levels of metallic mercury vapors may cause effects including lung damage, nausea (upset stomach), vomiting, diarrhea, increases in blood pressure or heart rate, skin rashes and eye irritation.

Is there a medical test to show whether you have been exposed to mercury?

Yes, there are two tests that can measure

mercury levels in the body. Blood or urine samples are used to test for exposure to metallic mercury and to inorganic forms of mercury. For exposures greater than a few days, a urine test is recommended. But consult your doctor if you think you should be tested or for further guidance and assistance.

Has the federal government made recommendations to protect human health?

The Agency for Toxic Substances and Disease Registry (ATSDR) has set a guideline of $\leq 1 \mu\text{g}/\text{m}^3$ (microgram per cubic meter) as the acceptable level for most residential occupancy, provided no visible metallic mercury is present.

Health Alert! The best way to avoid a mercury spill is to replace your older mercury-containing thermometers, switches and products and replace them with new mercury-free products. Contact your local Ohio EPA District Office, Solid Waste Management Division to ask how you can dispose of your old mercury thermometers and products that contain mercury.

NOTE: The Ohio EPA, Division of Materials and Waste Management sponsors Hazardous Waste Collection events to collect the liquid (elemental) mercury. However, this program does not collect mercury-contaminated items

Mercury spill disposal – homes - businesses

Ohio Homeowner: Currently there are no regulations that address mercury spills and the disposal of mercury-contaminated items from private households. A homeowner is instructed to remove all liquid mercury and mercury- contaminated items, place those items in a double bag system and remove them from inside the residence. Public health may encourage homeowners to dispose of these contaminated items during household hazardous waste collection events. But make sure your local household hazardous waste

collection events collect mercury and mercury-soiled items. The health department may also suggest contacting a hazardous waste recycling company for removal. While we might recommend the above as possible options, there are no rules that state Ohio homeowners cannot place the mercury-contaminated items outside, to be thrown away with the weekly trash.

Ohio Business: The Ohio Revised Code and Ohio Administrative Code provide the authority to regulate facilities that generate, transport, treat, store, or dispose of hazardous waste. A business with a mercury spill must contact a hazardous waste recycling company to dispose of mercury-soiled items.

References:

The Agency for Toxic Substances and Disease Registry (ATSDR). March 1999.

The Michigan Department of Environmental Quality (MDEQ). November 2003

Ohio Environmental Protection Agency, Ohio Mercury Reduction Group (OMRG). February 2004

Where Can I Get More Information?

Ohio Department of Health
Bureau of Environmental Health and Radiation Protection
Radiological Health and Safety Section
246 N. High Street
Columbus, Ohio 43215
Phone: (614) 644-2727

Ohio Environmental Protection Agency
Division of Materials and Waste Management
50 West Town Street, Suite 700
Columbus, OH 43215
(614) 644-2621

