

Cleaning Up a Small Mercury Spill

Acknowledgement: State of New York Department of Health

Mercury is a shiny, silvery liquid metal that can cause serious health problems. Liquid mercury vaporizes (evaporates) at room temperature causing elevated levels of mercury in indoor air. Mercury vapor is not irritating and has no odor, so people do not know when they are breathing it. Even the small amount of mercury from a broken thermometer can cause harm, especially to children, unless it is properly cleaned up and removed.

Know where mercury may be found in your home

Mercury may be found in thermometers, thermostats, blood pressure units, barometers and gas pressure regulators. Exposure to mercury can occur when people handle or play with the liquid metal, or when a measuring device breaks and mercury beads scatter onto floors or other surfaces. Spilled mercury is very hard to clean up, especially if it rolls into cracks and crevices, or if it is on fabric, upholstery or other porous material.

What you should do immediately after a mercury spill

Avoid contact with the spilled mercury until you decide who will be cleaning it up — you or a professional. In general, you can clean up a small mercury spill yourself, such as from a fever thermometer or thermostat. This fact sheet provides a step-by-step guide on pages 3-4 on how to do the cleanup.

It is recommended that a trained professional, such as a hazardous waste contractor, do the cleanup whenever the amount of mercury spilled is greater than what is typically found in a fever thermometer or thermostat. (If the amount of mercury spilled exceeds 3 grams or about the size of a green pea, a trained professional should do the cleanup)

Avoid spreading spilled mercury!

- Never use a vacuum cleaner, mop or broom to clean up a mercury spill.
- Avoid walking through the spill area.
- Take children and pets to another room.
- Leave any clothing or footwear that came into contact with the spilled mercury in the affected room.
- If possible, close the doors of the room with the spilled mercury to keep vapors from spreading.

If the amount of mercury is more than what is in a thermometer - consider the following:

- Stay out of the room until you begin the cleanup.
- If you cannot clean the area immediately, cover the spill and surrounding area with plastic.
- You can use one or more trash bags, overlapping side by side, to cover the beads until you can clean the spill.
- Lower the room temperature, if possible, to reduce evaporation of mercury.
- Shut down or close off vents that could spread mercury vapors to other areas.

- Open exterior windows to ventilate any mercury vapors to the outdoors.
- If possible, place a fan in a window to blow the vapors out but avoid breezes that might blow the mercury vapor back indoors or into other nearby residences. You can run a bathroom exhaust fan or a cooking stove hood but only if it vents outdoors and only if it is located in the same room as the mercury spill.

Mercury health effects

Breathing small amounts of mercury vapor can harm the nervous system of unborn babies, nursing infants and children. Breathing larger amounts of mercury vapor can cause irritability, tremors, or memory loss; shortness of breath; respiratory & eye irritation; chest pain; high blood pressure; kidney damage.

Decide who will do the clean up — you or a professional?

If the spill is ... more than the amount in a mercury fever thermometer or thermostat, or if it is widely scattered, or if the spill is on carpeting which cannot be thrown out, or on upholstered furniture, or other porous items that cannot be bagged ... *you should call a trained professional.* Check your telephone Yellow Pages under “Hazardous waste”, “Engineering services” or “Environmental engineers”. *If in doubt ...* contact your local health department or others listed at the end of this fact sheet for more information.

Plan ahead if you have mercury-containing items in your home - get a Mercury Spill Kit

Mercury spill clean-up kits are available for purchase from laboratory equipment suppliers (some are listed in the box to the right). Carefully follow all the directions provided in the kit. These mercury spill kits generally contain powders and suction devices. Additionally, it is recommended that you collect the items listed below and keep them with the kit.

List of what can be used to clean up a mercury spill:

- latex or vinyl gloves
- flashlight
- zipper-type plastic bags (several)
- plastic trash bags (at least two)
- wide tape (masking, duct or clear)
- paper towels
- eyedropper
- two index cards or pieces of stiff cardboard
- sulfur powder (see below for details)
- water to moisten paper towels

*Sulfur powder (also called flowers of sulfur) can be purchased from agriculture supply stores, garden centers, and some pharmacies. For questions about the type of sulfur powder used during mercury spill cleanup, please contact the UL Lafayette EH&S Department at 482-1840

WARNING

NEVER use a vacuum cleaner, mop or broom to clean up a mercury spill. Heat from the vacuum cleaner's motor will increase the amount of mercury vapor in the air. Mops and brooms will spread the mercury, making proper clean up more difficult.

The vacuum cleaner, mop or broom will become contaminated with mercury. NEVER use a washer or dryer to clean clothing that became contaminated with liquid mercury. The washer and dryer can become contaminated with mercury. If these items are contaminated with mercury, they are very difficult to clean and may have to be disposed as hazardous waste.

Before you start to do a mercury spill cleanup!

At this point, you should have read the previous sections in this fact sheet that describe a small mercury spill, what you should do immediately after a mercury spill and what you need to know if you decide to do the spill cleanup yourself. The following section is a general step-by-step guide on how to clean up a small mercury spill. You should complete each of the following steps to recover the spilled mercury and remove the contamination. Any mercury not removed will continue to be a source of potentially harmful mercury vapors.

Ten Steps for Cleaning Up a Small Mercury Spill

1. Prior to cleanup, remove metal items like jewelry and watches since they can be permanently damaged by mercury. **Put on old clothes, old shoes and latex or vinyl gloves.** Put a clean change of clothes and shoes along with a clean trash bag in a safe place outside the contaminated area. You will change out of your old clothes and shoes and put them in the trash bag at the end of the cleanup.
2. **Identify items in the spill area that can be cleaned and those that cannot.** Non-porous surfaces (finished wood, plastic or concrete) can be cleaned following this guidance. Porous surfaces or fabric-covered items (upholstery, carpeting, stuffed animals, pillows, backpacks, unfinished wood, cork, cardboard) are difficult to clean because mercury beads may be trapped in these materials. If you decide you cannot clean these items, place them in plastic trash bags or cover or wrap them in a double layer of plastic and carefully seal with tape. Place the wrapped items in a secure place, preferably outdoors and out of the reach of children and pets. You should consult with a trained professional about how to decontaminate or dispose of these items safely.
3. **Wear gloves to carefully pick up the larger pieces of broken glass and what remains of the broken device and place them on a paper towel.** Gently fold the paper towel around these pieces so you can pick the bundle up and place it in a zipper-type plastic bag. **Use index cards or stiff cardboard to push smaller pieces of glass and mercury beads together into a pile. Shine a flashlight at an angle to locate beads of mercury.** The beads will reflect light from the flashlight. Check for mercury in cracks or in hard-to-reach areas where beads may be hidden or trapped. Check a wide area beyond the spill.
4. **Use the eyedropper to collect mercury beads and place them in the plastic bag.** Hold the eyedropper at an angle to draw the mercury into the tip. Keep the eyedropper at an angle to stop the mercury from rolling back out until you can put the mercury into the plastic bag. Wrap tape (sticky side out) around your gloved fingers and carefully use it to pick up any remaining glass or beads. Check again with the flashlight to be sure that no beads of mercury remain.
5. At this point, mercury beads may still be trapped in cracks or crevices on irregular surfaces. **Sprinkle sulfur powder over the contaminated area and rub it gently all over the surface and into the cracks with a paper towel. Sulfur powder binds with mercury.** Use a paper towel dampened with water followed by wiping with another damp

paper towel to clean up the sulfur and mercury. Place the used paper towels in a zipper-type plastic bag.

6. Put all the items that were used to pick up the mercury, including index cards or cardboard, eyedropper, contaminated tape, paper towels, and zipper-type bags into the trash bag. Carefully remove rubber gloves by grabbing them at the wrist and pulling them inside out as they come off. Place the used gloves in the trash bag.
7. **Carefully seal the trash bag that contains the mercury contaminated waste and put it in a secure place**, preferable outdoors and out of reach of children and pets until it can be disposed of safely.
8. If possible, **open a window and use a fan to ventilate the area to the outdoors for 24-48 hours** before resuming normal use. If possible, heat the area (for example, with a space heater) while still ventilating to the outdoors. Avoid blowing the exhaust back indoors or into other nearby residences.
9. **Clothes or shoes that did not come in direct contact with liquid mercury should be removed and put into the trash bag that was left outside the contaminated area at the beginning of the cleanup.** Close the trash bag and take it outdoors. Carefully remove the shoes and or clothing from the trash bag and air them out thoroughly outdoors for 24 to 48 hours. After the outdoor airing, items that are washable can then be laundered.
10. **Dispose of contaminated items properly!** Mercury-contaminated items should not be placed in the regular household trash. DEQ Rules and Regulations control the disposal of mercury containing items and waste. Contact your EH&S office for information about hazardous waste disposal in your department.