

INSTRUCTIONS FOR CLEANING UP “SMALL” LIQUID MERCURY SPILLS IN HOUSEHOLDS

**Northeast Waste Management Officials’ Association
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With input from the state environmental agencies of Connecticut, Maine, Massachusetts, New Hampshire, New Jersey, New York, Rhode Island, and Vermont, the Northeast Waste Management Officials’ Association (NEWMOA) combined available spill clean-up instructions with the experience of individuals who have cleaned up mercury spills to create this document. It contains basic clean-up instructions for small liquid mercury spill.

It is impossible for this document to cover every type of spill situation; ultimately common sense must be used to determine the most effective clean-up approach. Individuals should always call for assistance whenever they are unsure about how to properly clean up a mercury spill.

Mercury is toxic to the human nervous system. The developing brains of fetuses and infants are especially sensitive to mercury’s toxic effects. Because mercury vapors are readily absorbed through the lungs into the bloodstream, they are particularly hazardous. Exposure to mercury vapors can occur when mercury products (such as thermometers and fluorescent lamps) are broken. Even very small amounts of metallic mercury (several drops) may raise air concentrations to levels that may be harmful to human health. Mercury vapors are also heavier than air and may linger in higher concentrations at the site of the spill.

Know when to call for professional assistance

By federal law, manufacturing, educational and service facilities must report mercury spills greater than one pound (two tablespoons) to the proper authority. Therefore, a spill of this magnitude in a household should be considered very serious. Some states advise getting professional assistance on household spills that are greater than a few drops. 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. See Table 1 for a summary of northeast states’ reporting requirements and assistance guidance for mercury spills.

Cleaning up Small Liquid Mercury Spills

1. **EVACUATE THE SPILL AREA:** If people were in the room when the spill occurred, be sure that their shoes, clothing, and other articles have not been splashed with mercury before they leave the room. If mercury has contaminated any clothing or articles, remove these items from the person and place them in a plastic bag. Keep everyone else, especially children and pets, out of the spill area to prevent tracking.
2. **LOWER the TEMPERATURE** by turning down the thermostat. The cooler the temperature, the less mercury vapors will be released into the air. Mercury vapors are odorless and colorless.

3. TURN OFF CENTRAL VENTILATING OR AIR CONDITIONING SYSTEMS that could circulate air from the spill area to other parts of the home or building.
4. CLOSE INTERIOR DOORS leading to other rooms, but VENTILATE THE ROOM WITH THE SPILL TO THE OUTDOORS by opening windows and any exterior doors. Place fans, facing out, in open windows or doors to speed up ventilation.
5. ASSEMBLE CLEAN-UP SUPPLIES: The following items may be helpful for safely cleaning up a small mercury spill. Assemble as many of them as you have. Remember that if the item comes in contact with mercury during the clean-up, it will have to be disposed of as hazardous waste.

Latex or rubber gloves

Goggles

Two small pieces of stiff paper or cardboard (not corrugated) with at least one straight edge, such as index cards or playing cards

Damp paper towels

Wide mouth plastic container with a lid

Airtight, sealable plastic bags

Garbage bags

Flashlight

Eyedropper

Tape – masking, duct, regular office – types & brands work differently, try many

Tweezers

Sulfur or zinc powder - these may be purchased from garden supply stores

6. DRESS APPROPRIATELY: Remove all jewelry from hands and wrists so the mercury does not bond to the metals. Change into old clothes and shoes that can be safely discarded if they become contaminated. Put on rubber gloves and goggles, if you have them.
7. CONTAIN THE SPILL: Keep the mercury from spreading into cracks, crevices, floor drains or onto sloped or porous surfaces, which are difficult to clean. If necessary, use masking tape or duct tape to make a vertical "fence" around the mercury droplets and confine them to a limited area for clean-up.

If you cannot find the spilled mercury, consider the entire room contaminated and call for professional assistance.

Never use a household or industrial vacuum cleaner to clean up mercury! These devices, even with filters, are not adequately filtered to remove mercury. Also they heat up and will spread mercury vapors. Once a vacuum has been contaminated with mercury, it will release mercury each time it is used; the only sure way to avoid spreading the contamination is to discard the vacuum cleaner.

Never use a broom on a mercury spill because it will contaminate the broom and only scatter the mercury droplets, making them harder to find and pick up.

Never pour mercury down the drain, or you will contaminate your plumbing, your septic system, or your local sewage treatment plant.

Never use household cleaning products because they may react violently with the mercury, releasing toxic gases.

8. PICK UP ALL VISIBLE MERCURY DROPLETS:

For cleaning mercury from smooth, hard surfaces:

If the mercury spill involves glass pieces, such as from a glass mercury thermometer or a glass ampoule from a mercury thermostat, use the tweezers to safely pick up any broken glass, placing the glass in the plastic container.

Use the 2 pieces of stiff paper to push the mercury beads together and then scoop them up. Place the beads in the plastic container. (Alternatively, you can use a rubber squeegee and dust pan to collect the mercury beads, but you must dispose of these contaminated items afterwards.)

Use an eyedropper to pick up the beads you can't get with the cardboard. Hold the eyedropper almost parallel with the floor, or it will not work very well. Clear the eyedropper by gently squeezing the contents onto a damp paper towel. If you do not have an eyedropper, press the sticky side of the wide tape to the remaining beads. (Note: Tape only works on small beads of mercury, not large droplets.)

When you think you've picked up all the mercury, shine a flashlight (at many different, low angles) on the area to find any remaining mercury beads or glass. Light will reflect off the mercury beads and glass helping you to locate them.

For cleaning mercury from a carpet, rug or fabric:

If the mercury spilled on a wall-to-wall carpet, call for assistance; see contact information in Table 1.

For small rugs and other pieces of fabric, fold or roll the surface so that the mercury contaminated area is trapped inside. Place the contaminated rug or fabric in a sealable, plastic bag. If a sealable bag is not available or feasible to use, double- or triple-wrap the contaminated fabric in plastic trash bags.

If the mercury spilled on a piece of fabric-covered furniture, call for assistance; see Table 1 for contacts.

If the spill went down the drain:

Mercury may get caught in your sink trap. Working over a tray a 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. (If you do not replace the trap, pour the contents of the trap into the sealable plastic container and dispose of it as hazardous mercury waste.)

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.

9. SPRINKLE "FLOWERS OF SULFUR" (ELEMENTAL SULFUR IN POWDER FORM) OR FINE POWDER ZINC, if available, ON THE SPILL SITE, if feasible, to bind any remaining mercury. These may be purchased from garden supply stores. Apply over hard-to-reach areas, such as cracks and crevices, to bind the mercury and halt the release of mercury vapors. Afterwards, collect the powder with a moist paper towel and dispose of as mercury waste. Take care not to inhale sulfur powder and beware that it may permanently stain carpeting, clothing and furniture.

10. PLACE THE BROKEN PRODUCT AND ALL MATERIALS USED TO CLEAN UP THE MERCURY IN SEALABLE PLASTIC CONTAINERS OR AIRTIGHT, SEALABLE BAGS. This includes the cards, paper towels, eyedroppers, tweezers, and other equipment used to clean up the spill. Place the plastic containers or bags inside a second plastic container or bag to provide additional containment protection. Seal each bag or tighten each lid securely so that liquid and vapors will be contained.

Consult Table 1 for disposal instructions in your state. If your state has a program for disposal of this type of waste, label the packages "Mercury Waste, Hazardous" and store in a secure place away from children and in a ventilated area if possible until proper disposal can be arranged.

AFTER YOU HAVE CLEANED UP THE SPILL:

1. CONTINUE VENTILATING the room or spill zone with outside air for a minimum of two days, if feasible. Fans to the outside will assist the ventilation. Now that the spill has been cleaned up, there is no longer a need to minimize vaporization by lowering the room temperature; warming the area during ventilation, if practical, will help dissipate any remaining mercury vapors more rapidly.

2. WASH HUMANS AND ANIMALS THAT CAME INTO CONTACT WITH MERCURY using soap and a paste of water and "flowers of sulfur," if available. Afterwards, thoroughly rinse the area. Dispose of all clothing that may have come in contact with the mercury as mercury waste. NEVER PLACE MERCURY-CONTAMINATED FABRICS IN A WASHING MACHINE or DRYER.

3. REPLACE THE BROKEN MERCURY DEVICE WITH A NON-MERCURY alternative.

4. Replace all remaining mercury devices in the home with non-mercury alternatives. The best way to protect yourself from mercury exposure is to prevent spills from occurring.

5. If you are uncertain about whether most of the spilled mercury was recovered and the room is frequented by small children or pregnant women, it may be wise to test for residual mercury in the air using a portable Jerome Meter or Lumex Mercury Analyzer. Some state environmental agencies have this capability. See Table 1 for state-specific contacts

Table 1: Reporting, Professional Assistance and Disposal Instructions for Household Liquid Mercury Spills in Each Northeast State

State	Liquid Mercury Spill Reporting Requirements	Advice on When and How to Seek Professional Assistance	Disposal Advice and Requirements for Mercury Spill Clean-up Material
CT	All spills should be reported to DEP's Oil and Chemical Spill Division at 860-424-3338.	For spill assistance, contact DEP's Oil and Chemical Spill Division at 860-424-3338. For questions regarding potential mercury poisoning, contact the Poison Control Center at the UCONN Health Center at 800-222-1222.	Bring the spill clean-up material to a household hazardous waste collection. The schedule is available on the DEP website http://www.dep.state.ct.us/ (search "household hazardous waste").
ME	Although spills of mercury used in household activity are not required to be reported, call the DEP for clean-up assistance if the spill involves more than a few drops of mercury.	If the spill is larger than a few drops, call DEP's Spill Response at 800-452-4664.	Spill clean-up waste should be kept out of the trash and stored for a household hazardous waste collection. Call your Town Office to find out if and when a HHW collection event will be held in your area.
MA	Any release of one pound or more of mercury in a 24 hour period must be reported to the DEP's 24-Hour Release/Spill Notification Line at (888) 304-1133.	If the spill is larger than one pound (two tablespoons), call DEP's 24-Hour Release/Spill Notification Line at (888) 304-1133.	Contact the MA Mercury Hotline at 866-9MERCURY (866-963-7287) to see what mercury disposal options are offered in your community or consult www.CLEANUP.org (enter your zip code and look under "Household Hazardous Waste"). As a last resort, contact a commercial hazardous waste facility.
NH	No legal requirement to report on household spills but DES suggests reporting if any amount of mercury is spilled.	Contact DES, Special Investigations Section at 603-271-3899 in the event of a spill. For possible health risk questions, contact your physician or the DHHS at 800-852-3345x4664.	Bring the waste to a household hazardous waste collection day. Contact the HHW Coordinator at 603-271-2047 with questions. Alternately, contact a hazardous waste remediation firm.
NJ	If NJ lands or waters are not impacted by the spill, there is no legal requirement to report it. If lands or waters are impacted, contact the Environmental Incident Hotline 877-WARNDEP (1-877-927-6337)		Dispose of spill clean-up material with the regular household trash.

State	Liquid Mercury Spill Reporting Requirements	Advice on When and How to Seek Professional Assistance	Disposal Advice and Requirements for Mercury Spill Clean-up Material
NY	DEC requires reporting of spills greater than one pound (two tablespoons). Some counties require the reporting of all spills, no matter the amount.	If the spill is more than the contents of a fever thermometer (1 mL), contact the DEC Spills Hotline at 800-457-7362.	Do not place mercury waste in the regular trash. Contact your state environmental agency, local board of health or sanitation department for disposal instructions.
RI	No legal requirement to report on household spills, but DEM suggests reporting all spills to their Emergency Response Division (8:30am-4:00pm) at 401-222-1360 or after hours at 401-222-3070.	Contact DEM's Emergency Response Division (8:30am-4:00pm) at 401-222-1360 or after hours at 401-222-3070.	Do not place mercury waste in the regular trash. Contact the DEM for disposal instructions at 401-222-1360 (8:30am-4:00pm), or after hours at 401-222-3070, or call the RI Resource Recovery Corporation (ECO-DEPOT) at 401-942-1430 x241.
VT	Any spill amount that causes a threat to human health or the environment should be reported to DEC at 800-641-5005	For instructions or assistance for spills that are not reportable, call Tom Benoit at (802) 241-3472.	Dispose of mercury debris and products through your local Household Hazardous Waste (HHW) collection program or through a hazardous waste transporter. For information, contact Tom Benoit at (802) 241-3472.

For additional information:

Agency for Toxic Substances and Disease Registry, "Most Frequently Asked Health Questions About Mercury," <http://www.atsdr.cdc.gov/tfacts46.html>

Agency for Toxic Substances and Disease Registry, "Public Health Statement about Mercury," <http://www.atsdr.cdc.gov/toxprofiles/phs46.html>

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Galuszka, Michael E. "Elemental Mercury Spills: Responses to Releases in Residential, Industrial and Public Buildings and Locations," (Serendipity Systems: 2001), <http://home.thegrid.net/~i282158/infinite/mercexc3.htm>

New Hampshire Department of Health and Human Services, "Elemental Mercury in Schools," <http://www.dhhs.state.nh.us/DHHS/HLTHRISKASSESS/LIBRARY/Fact+Sheet/F6.htm>

References used to prepare the first draft:

Connecticut Department of Environmental Protection, "Guidance for Managing Broken Mercury Fever Thermometers"

EPA, "Mercury – Emergency Spill & Release Facts"

Indiana Department of Environmental Management, "Mercury Spill Information and Clean Up Guidance"

Maine Department of Environmental Protection, "Spills and Broken Thermometers"

Massachusetts Department of Environmental Protection, "Mercury Spill Clean Up"

Michigan Department of Environmental Quality, "Cleaning Up Mercury Spills"

New Hampshire Department of Environmental Services, "Cleaning up Household Spills of Elemental Mercury"

New Jersey Department of Health and Senior Services, "Guidelines for the Safe Clean Up of Mercury Spilled at Home"

Vermont Department of Health, "Mercury" (includes spill clean up information)

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NEWMOA is a non-profit interstate governmental association involving the state waste management and pollution prevention Program Directors from the environmental agencies in Connecticut, Maine, Massachusetts, New Jersey, New Hampshire, New York, Rhode Island and Vermont. NEWMOA has been involved in regional mercury reduction efforts during the past four years. The Association developed this guidance under the direction and at the request of its member states. This report was primarily written by Karen Thomas.