

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

Guidelines and Contact Information Mid-Atlantic Region

This pamphlet was written with input from the state environmental agencies of Delaware, the District of Columbia, Maryland, Pennsylvania, Virginia, West Virginia, and is based on the Northeast Waste Management Officials' Association (NEWMOA) fact sheet. It contains basic clean-up instructions for small liquid mercury spills. Table 1 has Mid-Atlantic Region contacts and state guidelines for mercury spill management.

MERCURY SPILLS: CLEANUP AND SAFETY

Mercury is toxic to the human nervous system. The developing brains of fetuses and infants are especially sensitive to mercury's toxic effects. Mercury can be particularly hazardous because it can be easily absorbed through the lungs and into the bloodstream. Exposure to mercury vapors can occur when mercury products (such as thermometers and fluorescent lamps) are broken. Even very small amounts of mercury (several drops) may raise air concentrations to levels that may be harmful to human health.

Elemental mercury is a shiny liquid, silver-white in color and has many useful properties. It is the only metal that is liquid at room temperature. Mercury combines easily with other metals, is a good conductor of electricity and expands and contracts evenly with temperature changes. As a result, mercury has been used in many household, medical and industrial products like; thermometers and barometers, thermostats and old latex paints. Elemental mercury when spilled at room temperature can break up into small droplets and evaporate to form mercury vapor. The higher the room temperature the more mercury vapors will be released. Mercury vapors are also heavier than air and may linger in higher concentrations at the site of the spill.

Always call for assistance whenever you are unsure about how to properly clean up a mercury spill.

CAUTIONS!

NEVER touch mercury with bare hands.

NEVER use a vacuum cleaner on a mercury spill, it will cause vaporization.

NEVER use a broom to cleanup a mercury spill; it will cause the mercury to break up into smaller beads which will be difficult to collect.

NEVER put mercury waste down the drain, in the trash or incinerator.

NEVER use household cleaners to cleanup mercury spills.

STEPS IN MERCURY SPILL CLEAN-UP

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. 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.

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, for 2 days if possible.

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.

Never use a vacuum cleaner to clean up mercury! Vacuum cleaners, 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! 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! 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.

7. 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, broken fluorescent or other mercury vapor containing lamps, 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, cut out a section of the carpeting a bit larger than the mercury containing area to ensure that all the mercury is captured or call for assistance; see the 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.

8. SPRINKLE “FLOWERS OF SULFUR” (ELEMENTAL SULFUR IN POWDER FORM) OR FINE POWDER ZINC, if available, ON THE SPILL SITE: This will 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. The best way to protect yourself from mercury exposure is to prevent spills from occurring.

5. TESTING RESIDUAL MERCURY: 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 have the area tested 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.

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 Mid-Atlantic States’ reporting requirements and assistance guidance for mercury spills.

Table 1: Professional Assistance and Reporting Instructions

State	Liquid Mercury Spill guidelines
Delaware	<p>For information on spill clean-up call the DE, Enforcement Office, Environmental Response Team at 302-739-5072.</p> <p>www.dnrec.state.de.us</p>
District of Columbia	<p>Contact the Emergency Health and Medical Services Administration at: 202-671-4222</p> <p>www.dchealth.dc.gov</p>
Maryland	<p>Contact the Department of the Environment, 866-633-4686.</p> <p>www.mde.state.md.us</p>
Pennsylvania	<p>Contact the Department of Environmental Protection, 800-541-2050,</p> <p>www.dep.state.pa.us</p>
Virginia	<p>Contact the VA Department of Health, Division of Health Hazards Control, 804-864-8183</p> <p>www.vdh.state.va.us</p>
West Virginia	<p>For information on spill clean-up call the WV Department of Environmental Protection, 800-642-3074</p> <p>www.dep.state.wv.us</p>

