

Mercury Fact Sheet

Where is mercury found?

Mercury is a naturally occurring element that is found as a solid, liquid and gas in our environment. Elemental mercury is a shiny, silver-white metal that is a liquid at room temperature. It will evaporate at elevated temperatures to form mercury vapor, a colorless, odorless gas. Elemental mercury is found in thermometers, thermostats, barometers, switches, fluorescent bulbs, dental amalgams, and other medical and industrial equipment. The most common and significant form of organic mercury is methyl mercury. Methyl mercury builds up in the tissues of fish. Larger and older fish tend to have the highest levels. Mercury also combines with other elements, such as chlorine, sulfur or oxygen, to form inorganic mercury compounds. Inorganic mercury compounds used to be added to latex paints to prevent microbial growth, but this practice was banned in 1990.

How are we exposed to mercury?

Exposure to mercury occurs from absorption, ingestion or inhalation. Exposure to elemental mercury can occur when an item such as a thermometer breaks. If proper clean-up procedures are not followed, mercury that is vaporized can be inhaled, and mercury that is handled without gloves can be absorbed directly through the skin. Exposure to methyl mercury results from eating fish or shellfish that come from mercury contaminated waters. Inorganic mercury salts are typically not a significant risk to the general population today.

What are the health effects of mercury exposure?

Exposure to methyl mercury and mercury vapor results primarily in respiratory and central nervous system damage; exposure to mercury salts effects the kidneys and liver. The severity of symptoms depends upon the mercury concentration, length of exposure, and individual sensitivity. Mercury exposure is more dangerous for developing fetuses and children under the age of four because it may interfere with normal brain development. Acute exposure to elemental mercury may cause chest pain, labored breathing, vomiting, diarrhea, fever, metallic taste in the mouth, and a rash. Chronic exposure may lead to tremors, limb weakness, loss of appetite, excessive shyness, irritability, headache, and memory loss. Acute exposure to organic mercury may cause loss of muscle coordination, tingling in the limbs, blurred vision, malaise, and impaired hearing, taste and smell. Chronic exposure may result in permanent brain damage.

The body is able to rid itself of mercury by excreting it through the urine and feces. Removal can take up to several months following exposure, but because mercury does leave the body, full recovery after short-term exposure is quite likely. When levels in the body are extremely high, chelation therapy is utilized to aid in the removal of the mercury. Blood or urine samples can be taken in a doctor's office to determine the level of mercury in the body.

How can we minimize mercury exposure?

Follow your local fish advisory reports to reduce consumption of fish that have been determined to have significant levels of methyl mercury, and always follow proper clean up procedures for mercury spills.

Handling a Small Mercury Spill

Mercury is present in our environment in three forms: elemental mercury, inorganic mercury compounds, and organic mercury compounds. Spills most commonly occur with elemental mercury, which is found in thermometers, barometers, manometers, old thermostats, fluorescent lamps, and other equipment. A small mercury spill can be simple to clean up and poses little risk to your health under normal conditions, if the proper steps are taken. In addition to cleaning up the spill properly, it is very important to dispose of the mercury waste properly. The cumulative effect of allowing mercury to be flushed down a drain or disposed of in a regular municipal landfill can have a significant impact on our environment and health.

The following is a guideline for addressing a small elemental mercury spill:

- Immediately isolate the area to prevent spreading of the mercury. Have all people leave the room, and open windows to facilitate ventilation.
- Wear gloves, preferably rubber.
- Remove all jewelry from your hands.
- *If the mercury has spilled in a heated device, allow it to cool **completely** before beginning the clean-up.*
- *If the mercury has spilled onto an absorbent material, the material must be placed into a bag or plastic container and properly disposed of.*
- Use a flashlight to facilitate locating all of the mercury that has spilled. The light will reflect off of the beads, making them easier to find.
- Using stiff pieces of cardboard, scrape the droplets together into larger droplets. *Never* use a vacuum to clean up mercury. Not only will the mercury contaminate the vacuum, but the vacuum will spread the mercury throughout the house or building.
- Carefully suction the mercury droplets with an eyedropper, or scoop the droplets with the cardboard pieces. Place the mercury droplets, eyedropper and cardboard into a ziploc bag or wide mouth plastic container.
- If a spill clean-up kit is available, sprinkle the mercury absorbent powder lightly over any remaining droplets of mercury. Spray a water mist over the powder. Scrape the materials together and scoop into the zip lock or container.
- If a spill clean-up kit is not available, utilize sticky tape to lift the remaining beads of mercury. Place in the ziploc or container.
- Remember, all materials utilized in the clean-up, including your gloves, are contaminated and must be placed in the ziploc or container and properly disposed of.
- If the incident has occurred in the home, contact The Cuyahoga County Solid Waste District at 216-443-3749 for information on disposal of the waste.
- If the spill has occurred in a school or other institutional setting, label the bag or container as Hazardous Waste and identify the contents as mercury spill debris. Contact a hazardous waste facility in your area to arrange for proper disposal.
- To obtain a mercury spill clean up kit, contact one of the following companies:
Fisher Scientific at 1-800-772-673 or Flinn Scientific at 1-800-452-1261