



Safe Mercury Management

What is mercury?

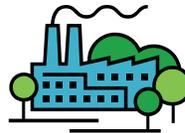
Mercury is a naturally occurring metal which has several forms. The metallic mercury is a shiny, silver-white, odorless liquid. If heated, it is a colorless, odorless gas.

Mercury combines with other elements, such as chlorine, sulfur, or oxygen, to form inorganic mercury compounds or "salts," which are usually white powders or crystals. Mercury also combines with carbon to make organic mercury compounds. The most common one, methylmercury, is produced mainly by microscopic organisms in the water and soil. More mercury in the environment can increase the amounts of methylmercury that these small organisms make.

Metallic mercury is used to produce chlorine gas and caustic soda, and is also used in thermometers, dental fillings, and batteries. Mercury salts are sometimes used in skin lightening creams and as antiseptic creams and ointments.

What happens to mercury when it enters the environment?

- Inorganic mercury (metallic mercury and inorganic mercury compounds) enters the air from mining ore deposits, burning coal and waste, and from manufacturing plants.
- It enters the water or soil from natural deposits, disposal of wastes, and volcanic activity.
- Methylmercury may be formed in water and soil by small organisms called bacteria.
- Methylmercury builds up in the tissues of fish. Larger and older fish tend to have the highest levels of mercury.



How might I be exposed to mercury?

- Eating fish or shellfish contaminated with methylmercury.
- Breathing vapors in air from spills, incinerators, and industries that burn mercury-containing fuels.
- Release of mercury from dental work and medical treatments.
- Breathing contaminated workplace air or skin contact during use in the workplace (dental, health services, chemical, and other industries that use mercury).



How do families reduce the risk of exposure to mercury?

Carefully handle and dispose of products that contain mercury, such as thermometers or fluorescent light bulbs. **DO NOT** vacuum up spilled mercury, because it will vaporize and increase exposure. If a large amount of mercury has been spilled, contact your health and fire department. Teach children not to play with shiny, silver liquids.



Pregnant women and children should keep away from rooms where liquid mercury has been used.

Problems with Mercury Thermometers

The small, silvery ball of mercury in a thermometer is very toxic if released into the environment and can cause serious health problems for humans and wildlife. When mercury is released, it evaporates into the air, and eventually makes its way back to the earth, often into rivers and lakes, where microorganisms transform it into highly toxic methylmercury.

Once mercury is released into the environment, it stays there for a long time and it builds up in the food chain, particularly in certain fish. One gram of mercury, like that in a thermometer, is enough to contaminate the fish in a 20-acre lake to the point where they are unsafe for human consumption (Minnesota Pollution Control Agency 1999).

Mercury Spills Less Than or Equal to the Amount in a Thermometer

- ◆ Remove everyone from the area where cleanup will take place. Shut door of impacted area. Turn off ventilation system. Remember to remove all pets as well.
- ◆ Increase ventilation in the room with outside air and close the room off from the rest of the house. If available, use fans for a minimum of one hour to help ventilate the room.
- ◆ Pick up the mercury with an eyedropper or scoop up beads with a piece of heavy paper (e.g., playing cards, index cards).
- ◆ Place the mercury, contaminated instruments (dropper/heavy paper) and any broken glass in a plastic zipper bag. Place this zipper bag in a second zipper bag and then in a third zipper bag (triple bag), tightly sealing each bag. Place the bags in a wide-mouth, sealable plastic container.
- ◆ Call your local landfill for household hazardous waste disposal.

- Anchorage...428-1742
- Mat-Su.....746-9838
- Fairbanks.....459-1482
- Juneau.....780-6888

How can mercury affect my health?

The nervous system is very sensitive to all forms of mercury. Methylmercury and metallic mercury vapors are more harmful than other forms, because more mercury in these forms reaches the brain. Exposure to high levels of metallic, inorganic, or organic mercury can permanently damage the brain, kidneys, and 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, vomiting, diarrhea, increases in blood pressure or heart rate, skin rashes, and eye irritation.

How does mercury affect children?

Very young children are more sensitive to mercury than adults. Mercury in the mother's body passes to the fetus and may accumulate there. It can also pass to a nursing infant through breast milk. However, the benefits of breast feeding are far greater than the possible adverse effects of mercury in breast milk, except in serious mercury poisoning cases.



In serious mercury poisoning cases, mercury's harmful effects that may be passed from the mother to the fetus include brain damage, mental retardation, incoordination, blindness, seizures, and inability to speak. Children poisoned by mercury may develop problems of their nervous and digestive systems, and kidney damage.

References:

- ◆ Washington Toxics Coalition. 2002. Mercury Thermometer Fact Sheet.
- ◆ Minnesota Pollution Control Agency, Michigan Department of Environmental Quality, Wisconsin Department of Natural Resources. 1999. Mercury Brochure, Mercury in the Environment.
- ◆ [Http://www.atsdr.cdc.gov/tfacts46.html](http://www.atsdr.cdc.gov/tfacts46.html)

For more information, contact:

- ◆ Alaska Department of Environmental Conservation (907) 269-3063
- ◆ Alaska Division of Public Health (907) 269-8000
- ◆ Anchorage Hazmat Team Coordinator (907) 267-5052
- ◆ Fairbanks Hazmat Team Coordinator (907) 459-1481
- ◆ 103rd Civil Support Team Weapons of Mass Destruction Response Coordinator (907) 384-9494
- ◆ EPA Alaska, Region 10 (907) 271-3616
- ◆ Valdez Hazmat Team Coordinator (907) 835-4560
- ◆ Kodiak Hazmat Team Coordinator (907) 486-8040