

HOW MERCURY POLLUTION OCCURS

Mercury enters the environment when mercury-containing products break in the home and are not properly disposed of. The mercury that does not become airborne is either placed in the trash or flushed down the drain to the nearest water pollution control facility (WPCF).

At the WPCF, most mercury is concentrated into waste solids. It returns to the environment through land spreading of waste solids and discharge of treated water. Mercury spread on land may, over time, be introduced to the atmosphere and eventually deposited into lakes and streams where bacteria transform it into highly toxic methylmercury—the

organic form of mercury that is absorbed into the muscle tissue of organisms, including humans.

Bioaccumulation.

All organisms accumulate methylmercury faster than they eliminate it. Unlike

thermometer mercury, if a certain amount of methylmercury is ingested, half of it would still remain in the body after 70 days (Source: U.S. Geological Survey). Therefore, at each level of the food chain, higher concentrations of mercury are consumed. This process is called bioaccumulation, and means that even low mercury levels in water bodies are a concern.

That's Fishy

A 22-inch fish weighting 2 lbs. can have a mercury concentration as much as 225,000 times as high as surrounding water.

The mercury from a single thermometer can contaminate all the fish in a 15-acre lake.

This publication is intended to educate the public on the environmental and health risks of mercury exposure and to offer ways to minimize these risks, thereby reducing mercury in the wastestream and the environment. It is also intended to partially satisfy mercury pretreatment goals set by the Central Valley Regional Water Quality Control Board.



MERCURY SAFETY CHECKLIST

- M**ake yourself aware of the mercury-containing items in your home.
- E**ducate children on the dangers of mercury.
- R**ecycle mercury-containing products.
- C**lean-up mercury spills properly.
- U**se products that do not contain mercury.
- R**emember not to burn mercury or throw it away.
- Y**ou can make a difference!

INFORMATIONAL WEB SITES

U.S. EPA Report to Congress on Mercury
www.epa.gov/oar/mercover.html

U.S. EPA Mercury Website
www.epa.gov/glnpo/p2/mercpam.html#Table

Department of Toxic Substance Control
www.dtsc.ca.gov

Department of Toxics Fact Sheet
http://www.dtsc.ca.gov/PublicationsForms/HWM_FS_UWR.pdf

California Department of Health
www.dhs.ca.gov/ohb/hesis/merc.htm

CONTACT INFORMATION

Agency for Toxic Substances and Disease Registry
24-Hour Emergency Response Hotline: (404) 639-0615
General Information: (800) 447-1544

Consumer Products Safety Information:
(800) 638-2772

San Joaquin County Household Hazardous
Waste Hotline: (209) 468-3066

Nearest Recycling Center: San Joaquin County
Household Hazardous Waste Disposal
South RA Bridgeford Street, Stockton, CA 95202
(209) 468-3066 — Call for directions.

MERCURY SAFETY

Recognize. Reduce. Recycle.



WHAT IS MERCURY?

Mercury — also known as “quicksilver” since it is a silver-colored liquid at room temperature — is an element that does not break down in the environment. It occurs naturally and is found in oceans, rocks, and soils.

Mercury becomes airborne as gas or dust when rocks erode, volcanoes erupt and soil decomposes; when people burn coal, oil, or natural gas as fuel; or when garbage containing mercury is incinerated. Once airborne, mercury can fall with rain and snow, landing on soils or water bodies. This means humans and animals can be exposed to mercury in air, water, and soil.

Source: U.S. Environmental Protection Agency Fact Sheets

Provided by the City of Lodi Public Works Department

MERCURY IN LODI

Mercury washed down the drain ends up at the City of Lodi Water Pollution Control Facility (WPCF). Although most mercury is removed with solids at the WPCF, a small portion remains in the discharged wastewater. The City's current discharge point is the Delta, where mercury levels are already too high.

Mercury discharged from the WPCF must be below a certain level set by the State. Removing even small amounts of mercury is expensive and may necessitate additional wastewater treatment facilities—resulting in increased taxes. However, with your help, the City may be able to reduce the amount of mercury in the wastewater—and decrease the amount of mercury in the Delta—without adding expensive treatment measures.

RISKS/TYPES OF MERCURY EXPOSURE

Inhalation. This is the predominant and most dangerous form of mercury exposure. Children playing with or near elemental mercury can be seriously poisoned by breathing the invisible vapor from mercury spilled on carpeting, furniture, or other surfaces. Metallic mercury exposure can cause harm before symptoms appear.

“Mad as a Hatter”

Many hat makers during the 19th century developed symptoms of shaking and slurred speech from exposure to large amounts of inorganic mercury, which was used to give a metallic sheen to felt hats.

Absorption. Mercury can also be absorbed by drinking contaminated water, eating contaminated food, and handling contaminated material. Fish present the most common risk of mercury exposure through food. Advisories are often issued to limit consumption of certain types of fish. It is common for children to accidentally break fever thermometers in their mouths.

Unlike methylmercury, mercury swallowed in this way poses low risk in comparison with the risk of breathing mercury vapor. Thermometer mercury



passes through the body without being absorbed, but enters the wastewater system. Humans may also be exposed to mercury from amalgam tooth fillings. Due to conflicting claims from dental associations and research groups, the actual health effects are uncertain. Sensitive groups may opt for alternative types of fillings.

Health Effects. Possible health effects of long-term or concentrated exposure to mercury:

- Acute respiratory problems, neurologic disturbances
- Kidney and brain tissue damage and birth defects
- Muscular problems, arthritis, migraines, multiple sclerosis, lupus, diabetes and some forms of auto-immunosuppression
- Acrodynia, a condition that results in apathy, anorexia, fever, kidney damage, painful blistering and peeling of skin on feet
- Pulmonary edema, diarrhea, confusion, tremors, coma, skin rash

Women of childbearing age and children are most sensitive to mercury. Mercury-contaminated milk can be passed from mother to child during breastfeeding.

Source: Agency for Toxic Substances and Disease Registry

HOW YOU CAN HELP REDUCE MERCURY IMPACTS

1) Source Reduction. Reduce the amount of mercury-containing products in your home to decrease the amount of mercury you use. Choose lighting and other household items with low mercury content. Mercury thermometers and fluorescent lights are the most common mercury-containing items, and are two household items that are most likely to be broken and release mercury.

Household Items That May Contain Mercury	
Ballasts (in fluorescent lights)	Old alkaline batteries
Appliance switches	Mercurochrome
Chest freezers	Maze toys
Gas pilot ranges	Contact lens solution
Washing machines	Children's light-up sneakers
Thermometers	Household cleaners
Thermostats	Barometers
Fluorescent lights	Chemistry sets

2) Proper Disposal/Recycling. Help keep mercury out of the wastewater by properly disposing of spills and by recycling products that contain mercury.

The following mercury-containing items can be recycled at mercury recycling facilities (see back cover for additional sources of information).

Materials Accepted at the Recycling Facility	
Fluorescent Lamps (intact and crushed)	Regulators, Thermostats
Thermometers	Neon Lamps
Compact Fluorescent Lamps	Batteries (all types)
High Pressure Sodium Lamps	Debris Containing Mercury
Mercury Vapor Lamps	

3) Safe Clean Up.

When a mercury spill occurs, be sure to:

- Increase ventilation in the room with outside air and close the room off from the rest of the house. Use fans for at least one hour to help ventilate.
- When cleaning a mercury spill:
 - DO NOT use a broom or paint brush to clean up
 - DO NOT use a vacuum
 - DO NOT use household cleaning products
- Pick up the mercury with an eyedropper or scoop up beads with a piece of heavy paper.
- Place the mercury, contaminated instrument and any broken glass in a plastic zipper bag. Place this zipper bag in a second, then third, zipper bag (triple bag). Place bags in a sealed container.
- Call San Joaquin County Household Hazardous Waste Hotline at (209) 468-3066 for the nearest approved mercury disposal location. If disposal at such a location is not possible, dispose in compliance with state and local requirements.
- If weather permits, leave windows open for approximately two days to assure the area is completely ventilated.

Source: U.S. Environmental Protection Agency