

LAND & WATER

MERCURY

What is mercury?

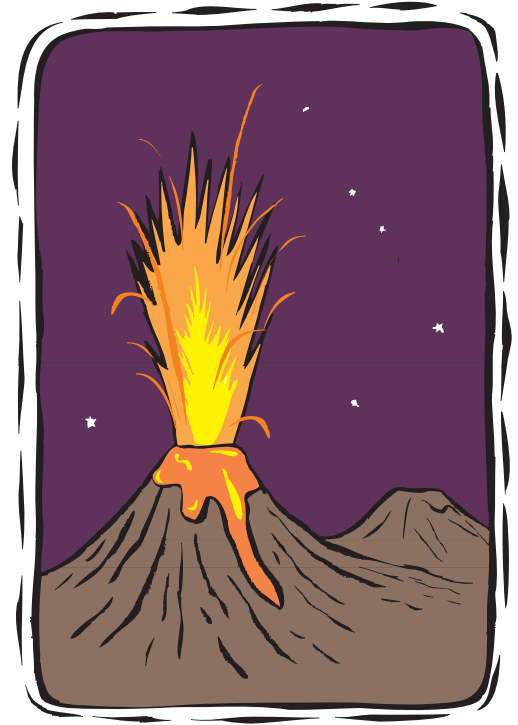
Mercury is a versatile, volatile and variable element. Mercury is a heavy metal which does not break down; it can be vapor, liquid or solid. Mercury occurs naturally and is found in very small amounts oceans, rocks and soil. It becomes airborne when rocks break down, volcanoes erupt, and soil decomposes. It then circulates and is distributed throughout the environment.

Mercury can become airborne when coal, oil, wood, or natural gas are burned as fuel or when mercury-containing garbage is incinerated. Once in the air, mercury can fall to the

ground with rain and snow. This can then contaminate soil and bodies of water.

Lakes and rivers are also contaminated when there is a direct discharge of mercury-laden industrial and municipal waste to these water bodies. In these lakes and rivers mercury accumulates in the tissues of fish and other organisms and may reach your dinner table.

Although a very useful element with unique properties and applications, it poses a very real health risk. We can minimize this risk by reducing the use of product which contain mercury and properly disposing of mercury-containing waste.

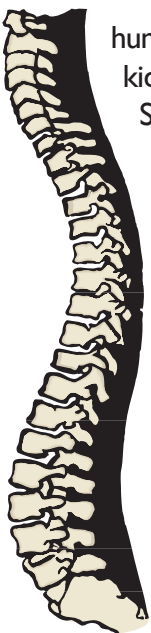


What are the human health hazards of mercury?

Mercury can be taken in through the lungs, mouth, skin or by eating mercury-contaminated fish.

Mercury affects the human brain, spinal cord, kidneys, lungs and liver.

Symptoms of short-term exposure to high levels of mercury include nausea, shortness of breath, fever, muscle aches, sore gums, and an elevated white blood cell count. Symptoms of long-term exposure include tingling sensations in the fingers and toes, numbness around the mouth,



and tremors. Long-term exposure can result in symptoms that get progressively worse and lead to personality changes, tunnel vision, stupor and coma.

Women who expect to become pregnant should not eat mercury contaminated fish. Mercury affects fetal development, preventing the brain and spinal cord from developing normally. Affected children show lowered intelligence impaired hearing and poor coordination.

Mercury is converted into methylmercury by bacteria and other processes in the water. This meth-

ylmercury accumulates as you move up the food chain:

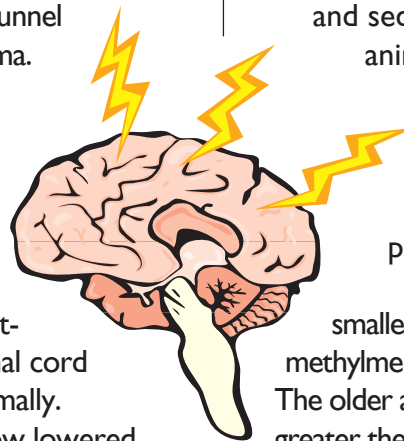
1. Methylmercury in the water and sediment is taken up by animals and plants known as plankton.

2. Minnows and juvenile fish eat large quantities of plankton over time.

3. Large fish eat the smaller fish, accumulating methylmercury in their tissues. The older and larger the fish the greater the potential for high mercury levels in their bodies.

No method of cooking or cleaning can reduce the amount of mercury in a meal.

[more on other side...](#)



Products that contain mercury

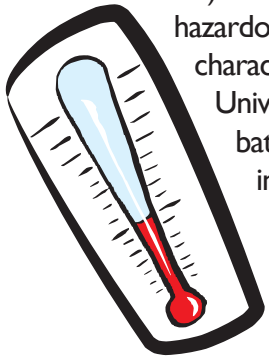
- Thermometers
- Thermostats
- Some household switches manufactured before 1991
- Fluorescent and high intensity discharge lamps
- Some alkaline batteries manufactured before 1994
- Some button batteries
- Latex paints manufactured before 1992
- Dental amalgam
- Old chemistry sets, toys
- Lighted athletic shoes
- Some pesticides manufactured before 1994
- Some skin lightening creams
- Some Asian medicinals
- Some religious and folk medicines

POLLUTION PREVENTION TIPS

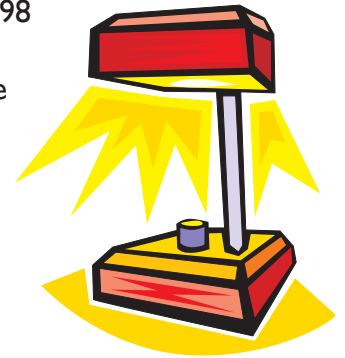
- Use red bulb alcohol, digital, LCD forehead thermometers
- Use electronic thermostats, Mechanical Snap Acting Switches, Magnetic Snap Switches
- Use reduced mercury fluorescent lamps
- Choose mercury-free toys, shoes, jewelry. Be careful at garage sales.

Regulations regarding recycling and disposal

Federal — Title 40 Code of Federal Regulations (40 CFR) Part 261.24 gives limits for determining of hazardous waste. Maximum limit for toxicity characteristic for mercury is 0.2 mg/l. The Universal Waste Rule (UWR) covers batteries, pesticides and mercury-containing thermostats. Lights containing mercury can also be managed under this Rule if the states so choose. This is meant to encourage recycling and proper disposal and reduce regulatory burden.



State — Oklahoma Administrative Code Title 252 Chapter 200 (OAC 252:200) covers the regulations for management of hazardous waste. Under a rule adopted by the Environmental Quality Board at its June 1998 meeting, fluorescent lamps are now included in the UWR. The rule outline conditions for inclusion under the UWR. However, lamps still must be tested before disposal to determine whether waste is hazardous.



Use less energy

Coal-fired power plants are a major source of mercury pollution. Reducing demand for electric power means less mercury is emitted into the environment from power plants. Using energy efficient fluorescent lamps instead of incandescent light bulbs is one way to reduce energy use. Reduced mercury fluorescent lamps are also available.

Universal wastes are generated by individual households, which are not regulated under RCRA and are allowed to dispose of these waste in the trash. While some MSW landfills may safely handle small amounts of hazardous wastes, these wastes can be better managed in a designated program for collection or recycling. DEQ encourages residents to take these items to collection sites and other centers for proper recycling or disposal.