

Preventing Environmental Mercury Contamination: How we all can help

Mercury is a metal that is liquid at room temperature. It is a very heavy liquid, highly conductive and chemically bonds with other metals to form useful compounds. People have benefited from the useful properties of mercury for centuries. However, mercury is also very toxic. Its effects on humans and nature are of great concern. Mercury contamination of aquatic environments, in particular, is alarming because small amounts of mercury in water may magnify, or bioaccumulate, in the aquatic foodchain. This public service announcement discussing the uses and proper disposal of mercury has been prepared by the Madison Metropolitan Sewerage District in association with the Dane County / City of Madison Clean Sweep Program and the Wisconsin Department of Natural Resources.

What's all the fuss over mercury?

Mercury is an element that can be a gas or a liquid, and is frequently found mixed with other metals or chemically bound into numerous compounds. As an environmental contaminant, it travels far and wide in air and water. The ability for mercury to bioaccumulate in food chains is of particular concern in aquatic environments where predators at the top of the food chain, such as game fish, loons, eagles and mink, ingest and retain considerable amounts of mercury from their prey. Adverse health effects in wildlife are increasingly being attributed to mercury toxicity. Humans are also at the top of the food chain. To protect the public, particularly anglers, the State of Wisconsin has issued fish consumption advisories. Over 300 Wisconsin lakes and 350 river miles are listed in the state's advisory list due to high levels of mercury in fish. Locally, Lakes Monona and Waubesa have consumption advisories for mercury in larger sized walleye. No lakes have ever been removed from the State advisory list.

How does mercury get into the environment?

Mercury has many uses and many ways to contaminate our air, water and land. Major emissions of mercury are due to combustion of fuels and incineration of municipal and medical wastes. Releases come from metal smelting and the manufacture of cement, acid and bleach, as well as the production of liquid mercury and mercury-containing devices. Waste disposal of the countless devices and substances containing mercury offers routes to the environment through landfills, incinerators and wastewater treatment plants. Mercury spills result in contamination of our living and work spaces and directly impact our land, air and water.

What mercury-containing items are found at home?

Here is a short list: thermometers, old paints, shoes with light-up heels (older models), thermostats and temperature probes, old pesticides, medical products such as Mercurochrome, fluorescent and other lamps, old button batteries, medical batteries and tilt switches. Detergents and cleaners may contain traces of mercury.

Where should these broken, worn out and unneeded items go?

In a word, the answer is recycle. Products which are known to contain mercury should not be thrown out with the garbage or flushed down the drain. It is quite likely that mercury that is incinerated, buried or flushed to a wastewater treatment plant will sooner or later reach the environment. There are recycling options for most products which contain mercury. Easily recycled are fluorescent lamps, button batteries, and liquid mercury in switches, thermometers and temperature probes. The Dane County Clean Sweep Program accepts and recycles household pesticides, old (and new) paints, and liquid mercury in vessels, thermometers, and switches.

You can help by purchasing wisely and avoiding products containing mercury. This is a simple and important aspect of the concept known as pollution

prevention. Keep mercury out of circulation and avoid the need for recycling or waste treatment.

Mercury Uses: What about at work?

Besides the common mercury-containing items we use at home, there are numerous uses of mercury in our working lives. Here are a few examples:

Medical / Veterinary Facilities: Cantor tubes; manometers; thermometers; thimerosal; impurities in reagents; batteries; lamps.

Clinical Laboratories: histology fixatives; reagents.

Analytical Labs: catalysts; reagents; trace impurities; elemental mercury.

Agriculture: Some 150 pesticides, most being outdated, contain some mercury; manometers; thermometers; lamps.

Dental Facilities: amalgam (fillings material), including unused and scrap; liquid mercury.

Educational Facilities: bottles of mercury on school shelves (remember, in the "old days", playing with the quick silver drops?); lamps; tilt switches; pressure gauges; temperature probes; thermostats.

What can you do about mercury and the environment?

As you see, mercury is used in many ways and in many places, and therefore, it has numerous opportunities to reach the environment. You can help reduce environmental contamination by following this advice:

- Interrupt the transfer of mercury to the environment. Mercury is an element, it does not break down.
- Do not flush mercury-containing items, and do not toss them.
- Purchase wisely to avoid mercury-containing items.
- Encourage your employer to use alternatives to mercury-containing devices.
- Recycle, a concept that is becoming second nature to most of us.
- Conserve electricity, which reduces mercury emissions from coal combustion.

Whom to call, where to go?

Your questions on these mercury issues can be directed to the Madison Metropolitan Sewerage District (MMSD) at 222-1201 extension 362.

The City of Madison / Dane County Clean Sweep facility at 2302 Fish Hatchery Road, in Madison, will assist with the disposal of household mercury-containing items from May through October. Call Clean Sweep at 267-1997 for more information and for hours of operation.

Resources:

"Important Health Information for People Eating Fish from Wisconsin Waters", 1997, Wis. Dept of Health and Wis. DNR Pub No. FH82497

"The Mercury Sourcebook", 1997, Wis. DNR

This information provided as a public service by:
Madison Metropolitan Sewerage District
1610 Moorland Road
Madison WI 53713-3398

