

Hazardous Waste & Toxics Reduction Program

Mercury in Non-automotive Switches

Mercury switches have been used in a number of common household appliances over the years including: ovens, ice chests, sump pumps, and some water heaters. The use of mercury in appliances was virtually eliminated around the year 2000 and many appliances that pre-date this change are still in use.

When older appliances are replaced, they often end up at the scrap metal recycler. Mercury that was once safely contained in the unit can find its way into our environment and then into our food (see page two for a depiction of the mercury food cycle).

Though mercury could be present in any appliance, below is a partial list of appliance types that may contain a mercury switch or probe:

Type	Location	Prior to
Chest freezer	Light socket	01/01/2000
Washing machines	Lid opening and dynamic stabilizer switches	1972
Gas range	Flame sensor assembly	Labeled for mercury after 03/01/2000
Gas hot water heater	Thermocouples	Commercial models over 100 gallons. Probably not established in residential models
Septic tank sumps / bilge pump	Switch	Possibly still in use. No "Prior To" established
Gas Flow Regulators	Regulator attached to gas meter	Homes built prior to 1961
Gas Furnace Flame Sensor Thermocouple	Shut-off Valve	Before 2000
Thermostat	Inside device in glass ampule	Possibly still in use
Clothes Iron/Hair Iron	Tilt Switch	Before 2006
Silent Light Switches	Entire Device	Before 1991, Still in use.
Space heater	Internal switch	Possibly still in use
Thermometers, sphygmomanometers, and barometers	Entire device	Possibly still in use
Fluorescent light tubes	Entire device	Still in use

Accommodation Requests: To request materials in a format for the visually impaired, visit ecology.wa.gov/accessibility, call Ecology at 360-407-6700, Relay Service 711 or TTY at 877-833-6341.

¹ ecology.wa.gov/autoswitch

Auto Mercury Switch Removal Program

The [Auto Mercury Switch Removal Program](#)¹ pays auto recyclers and scrap processors to remove mercury switches.

Participants are reimbursed \$3.00 per light switch and \$9.00 per automotive brake system (ABS) sensor.

Free collection buckets, transportation, and disposal are provided for the switches.

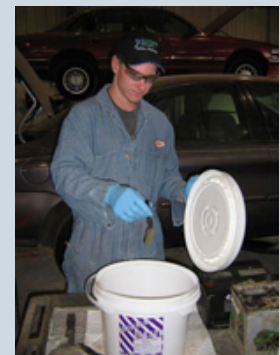


Figure 1. Auto worker places mercury switch into collection bucket

Impacts of the program

Mercury switches are electrical switches that use mercury pellets to turn them on and off.

Automobile recyclers in Washington have collected mercury switches from scrap vehicles since 2006.

Over 240,000 switches have been removed. That's more than 545 pounds of mercury kept out of the environment.

Why is mercury so dangerous?

Once in a lake or river, mercury is converted to methylmercury by bacteria and other processes. Fish absorb methylmercury from their food and from water as it passes over their gills. Mercury is tightly bound to proteins in all fish tissue, including muscle. *There is no method of cooking or cleaning fish that will reduce the amount of mercury in a meal.*²

Methylmercury accumulates as you move up the food chain:

1. Methylmercury in the water and sediment is taken up by tiny animals and plants known as plankton.
2. Small fishes eat large quantities of plankton over time.
3. Large predatory fish consume many smaller fish, accumulating methylmercury in their tissues. The older and larger the fish, the greater the potential for high mercury levels in their bodies.
4. Fish are caught and eaten by humans and animals, causing methylmercury to accumulate in their tissues.

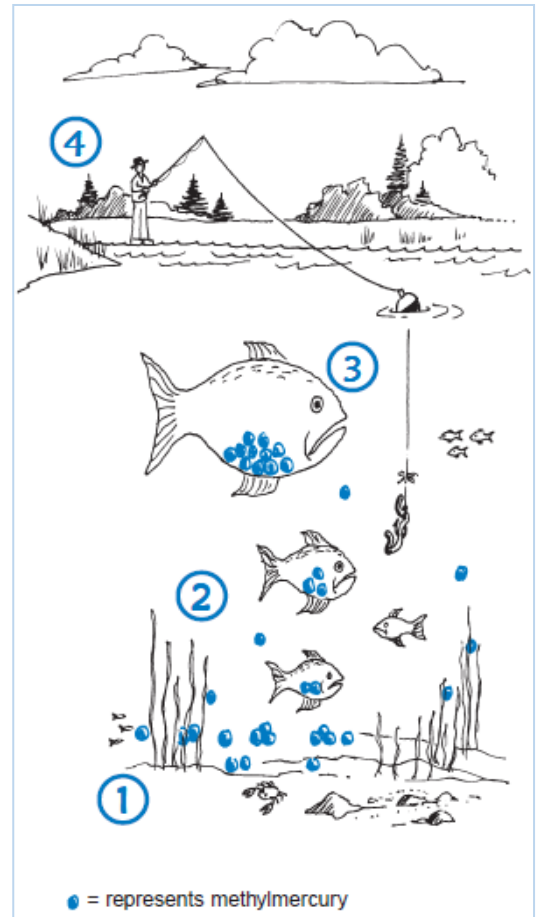


Figure 2. Methylmercury enters the food chain through sediment, water, and fish

Managing mercury-containing waste

Businesses can manage mercury-containing equipment and lamps under simplified rules for managing dangerous waste referred to as the [universal waste](#)³ rules (WAC 173-303-573). These rules reduce record keeping and other requirements associated with managing these types of dangerous waste.

Dentists must also take care to manage their mercury-containing dental waste. Dental offices in Washington State are required to use and maintain a dental amalgam separator.

What if I have other items that contain mercury?

If you have other mercury-containing devices that do not fit into these categories, please visit [Ecology's Moderate Risk Waste information website](#).⁴

For more information about the Auto Mercury Switch Removal Program, contact Jeffrey Gutschmidt at (425) 649-7140 or jeffrey.gutschmidt@ecy.wa.gov.

² Text adapted from Household Appliance Mercury Switch Removal Manual, p.2, "How Does Mercury Get Into Fish?" by Vermont Agency of Natural Resources.

³ ecology.wa.gov/universal-waste

⁴ ecology.wa.gov/householdmrw