



Massachusetts
Department
of
ENVIRONMENTAL
PROTECTION

fact sheet

Mercury Management for Vehicle Recyclers, Scrap Recycling Facilities and Mobile Crushers

Why is mercury in “end of life” vehicles a problem?

Many vehicles made before the start of model year 2003 contain switches and other components made with mercury. Most mercury switches are found in convenience lighting (in hood and trunks), and in anti-lock brake systems. Mercury can also be found in certain types of high-intensity discharge headlights and some sensors.

Mercury is a toxic metal. When steel from vehicles is recycled without first removing mercury-added components, the mercury is released into the air when the steel is re-smelted. Airborne mercury is deposited on land and in lakes and ponds, where it can accumulate in people and wildlife. Children and fetuses are particularly vulnerable, because it can damage their developing brains. Massachusetts public health officials have warned people to limit their consumption of certain types of fish caught in our lakes, streams and ponds, with particular cautions for pregnant women, nursing mothers, women of child-bearing years, and young children. While many other sources of mercury have been addressed since the mid 1990s, mercury-added switches in recycled steel are still a source of pollution, which is a significant concern for public health and the environment.

What are vehicle recyclers and mobile crushers required to do with mercury-added vehicle switches and other mercury-added vehicle components?

Regulations to implement the Massachusetts Mercury Management Act (Chapter 190 of the Acts of 2006) require that *mercury-added components must be removed from vehicles before they are crushed or shredded*, unless the component is inaccessible due to significant damage in that area of the vehicle where it is located or the component is a mercury-added lamp used to backlight the vehicle dashboard or other electronic device.

Who has to remove mercury-added components?

Anyone who crushes or arranges to crush an end-of-life vehicle must ensure that all mercury components are removed before the vehicle is crushed. This requirement applies to partial crushing, flattening or baling and includes vehicle recyclers who use stationary or mobile crushers. Also, scrap recycling facilities can accept end-of-life vehicles that have not been crushed and still contain mercury-added components (e.g., “vehicles on the hook”), but must remove these components before the vehicle is flattened, crushed or baled.

How should the mercury-added components be managed after they are removed from the vehicles?

Automobile manufacturers have established a program to collect and recycle *mercury-added switches and switch assemblies*, which is administered by End of Life Vehicle Solutions (ELVS). This program will collect removed mercury-added vehicle switches and recycle them *free of charge to participating vehicle recyclers*. You can sign up to participate in this program by calling toll-free (877) 225-3587 or through the website: <http://www.elvsolutions.org/>. ELVS will send you a collection bucket, information about

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which vehicles contain mercury-added switches, and instructions for removing them and sending them to a licensed reclamation facility that they have contracted with for recycling.

Mercury-added switches that have been removed intact (e.g., a complete convenience lighting tilt switch assembly or an ABS assembly) and mercury “bullets” that are encased in metal and removed from switch units should be managed as “Universal Waste.” This means you should:

- > Store switches and/or switch assemblies in the bucket with the lid securely fastened until you have collected enough for shipment to the reclamation facility.
- > Use the bucket label that ELVS sent to identify the bucket’s content as “Universal Waste – Mercury-containing Devices”.
- > Store switches for no more than one year. Please note that you must document the date on which you started to store each batch (this is frequently done by noting the start date on the bucket label).
- > When your bucket is full, call United Parcel Service (UPS) to arrange for a pick-up. Use the instructions that ELVS sent or check on their website, using the code to ensure that your bucket will be delivered to the reclamation facility at *ELVS’ expense*.
- > Used mercury-added switches cannot be re-installed in vehicles. Other mercury-added components, such as HID headlamps that have been removed, which are not accepted in the ELVS program, may be offered for resale. If you do not re-sell these components, they should be managed as Universal Wastes, following the directions below.

For all other mercury-added components that have been removed intact, or if you do not participate in the ELVS collection/recycling program, you must:

- > Store mercury-added components in a secure heavy plastic or metal container with a tight lid.
- > Label your container as “Universal Waste – Mercury-Containing Devices”.
- > Send switches and other components directly to a recycling facility that has obtained a Class C Hazardous Waste Recycling Permit from MassDEP, or to a licensed recycling facility located in another state.
- > You can use a common carrier (such as the U.S. Postal Service, UPS, Federal Express, or other shipping service) to transport the switches.

Mercury in most switches is encased in metal, which does not break easily, and can be handled as “Universal Waste.” However, in some Volvos made between model year 1975 and 1991, the mercury ampoules in switches used for lights in engines and luggage compartments were made of glass. Volvo also used glass encasing for mercury in switches for vanity mirror lights in model years 1986-1991. Glass mercury switches were also used in Audi engine compartment lights in 1992 and earlier vehicles.

IF YOU REMOVE GLASS-ENCASED MERCURY SWITCHES from the switch unit, the switch must be managed as “Hazardous Waste.” These means that the ampoules must be disposed of at a facility that is licensed to treat, store or dispose of hazardous waste, and you must use a licensed hazardous waste transporter for the shipment. **DO NOT MIX GLASS SWITCHES IN THE COLLECTION BUCKET WITH METAL MERCURY SWITCHES.** If you do and the glass breaks, the entire bucket of switches will be contaminated, and must be handled as hazardous waste.

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Can I re-sell mercury-added switches or other mercury-added components?

Mercury *switches* removed from end-of-life vehicles must be recycled (as Universal Waste) or disposed of as Hazardous Waste, and may not be re-sold. However, other mercury-added components (e.g., high-intensity head lamps and airbag deployment devices that contain mercury sensors) can be re-sold. If you do not re-sell these components, then they must be managed as Universal Waste (note: ELVS will not collect or recycle them).

How should I handle mercury spills?

Removing mercury switches and other components from end-of-life vehicles before they are crushed will minimize the possibility of mercury spills at your facility (and the associated cleanup liability and costs). Mercury is not likely to leak in vehicle switches encased in metal. However, as with any hazardous material, you will need to be prepared to contain, clean up, and manage residuals from any mercury spill. Mercury contaminated residue from a spill should be stored in a plastic container that is structurally sound and has a tight lid, and must be transported and disposed of as a Hazardous Waste. See below for links to guidance for handling spills.

Staff training: Your facility will need to ensure that all employees who remove and/or manage mercury-added switches and other components are aware of proper handling methods and emergency procedures for containing and cleaning up mercury spills and leaks.

How will scrap recycling facilities know that crushed vehicles have had their mercury switches removed?

Before delivering or selling vehicle bodies to scrap recycling facilities, vehicle recyclers must certify in writing that all mercury-added vehicle switches have been removed. MassDEP has developed required language that you may preprint on your bills of lading:

"I certify that mercury-added switches have been removed from the vehicles in this shipment in compliance with 310 CMR 74.04"

followed by the signature of the corporate official making the certification (which may be preprinted or signed for each bill of lading), the typed or printed name of the corporate official and his or her title.

Alternatively, you can have stickers printed with the same statement above, followed by the signature of the corporate official. A sticker would need to be affixed to each vehicle from which switches were removed.

You may develop an alternative format containing this statement with the signature of the corporate official. However, the format needs to be approved by MassDEP before you use it. Please submit your proposed form to, Lori Segall, Mercury Program Manager, MassDEP Bureau of Waste Prevention, One Winter Street-6th floor, Boston, MA 02108 or email it to: lori.segall@state.ma.us

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Do I have any reporting requirements to MassDEP?

MassDEP regulations (310 CMR 74.00) require vehicle recyclers and scrap recycling facilities to file a certification form annually with MassDEP that describes their mercury component removal activities in the past calendar year. Forms must be submitted to MassDEP by May 16, 2008 and by March 1 in subsequent years. You can download a blank form at: <http://www.mass.gov/dep/recycle/hazardous/autobiz.htm#mercury>

More Information: Vehicle Switches

- End of Life Vehicle Solutions, Inc. (ELVS) website lists vehicle makes and models with mercury convenience light switches, ABS G-force sensors, and air bag units with mercury switches and their locations in the vehicles. The website also has two short videos on how to remove convenience light switches: <http://www.elvsolutions.org/educational.html/> It shows removal of the mercury "bullet" from the light assembly, but that is not necessary to participate in the ELVS program
- Clean Car Campaign website has photographs of convenience light assemblies and antilock brake units with instructions on how to remove them from specific makes of vehicles: <http://www.cleancarcampaign.org/switchremoval.shtml>

More Information: Mercury Spills

- How to handle mercury spills: <http://www.mass.gov/dep/recycle/hazardous/autobiz.htm#mercury>
- Where to purchase mercury spill kits (partial list):
Michigan Department of Environmental Quality
http://www.michigan.gov/deq/0,1607,7-135-3307_29693_4175-11766--,00.html

More Information: Other Massachusetts Requirements

- MassDEP information for automotive recyclers about compliance with Massachusetts environmental rules: <http://www.mass.gov/dep/recycle/hazardous/autobiz.htm>
- Massachusetts has established reportable quantities for the release into the environment of the following materials that are commonly found at vehicle recycling facilities:

Waste oil	10 gallons
Gasoline	10 gallons
Ethylene glycol (antifreeze)	10 gallons

For releases of specific solvents or other hazardous materials, please go to <http://public.dep.state.ma.us/MOMHL/HazMat.aspx> and type the name of the material in the box