

Product Stewardship A Success for Maine

Case Study #4 Automobile Switches



Mercury is a heavy metal that can be toxic to the central nervous system. Removing mercury from old cars before processing them is a vital part of reducing exposure to this dangerous element.”

– Lani Graham, MD, MPH,
Former Director, Maine Bureau of Health

In 2001 the Maine Legislature addressed a major source of mercury in the environment by enacting a law that created a “product stewardship” program for mercury-containing switches in motor vehicles.

This law established a system in which car manufacturers, car dismantlers, and scrap recyclers share responsibility for safely collecting and recycling mercury switches from old cars. This prevents mercury exposure, which harms the health of Maine people and the environment.

More than 60,000 switches have been recovered and recycled through the program since it began in 2003, preventing more than 130 pounds of mercury from entering Maine’s environment.

Shared Responsibility

- Automobile dismantlers, junkyards, and scrap metal recyclers remove mercury switches before the vehicles are crushed.
- The Maine Department of Environmental Protection provides information and training on switch removal.
- Vehicle manufacturers provide for a consolidation and recycling system for the switches and pay a cash bounty for every switch returned.
- Incentive payments for switches have increased over the life of the program, from \$1 per unit in 2003 to \$4 per unit today.

Since 2011, Maine’s program has been administered as part of a national program called End of Life Vehicle Solutions (ELVS). ELVS is a product stewardship organization formed by the automobile manufacturers that are required to recycle mercury switches. They provide collection buckets, pay for shipping and recycling, and pay the cash incentive to dismantlers and scrap metal recyclers for each switch.

What is “Product Stewardship”?

Product Stewardship is an advanced recycling strategy that requires manufacturers to share responsibility for the safe collection and recycling or disposal of their products and packaging. Product stewardship shifts recycling and disposal costs from taxpayers to producers and consumers.

What Are Mercury Switches?



For decades, mercury switches were used in cars as part of gravity-controlled light switches in hoods, trunks, and some anti-lock brake systems. Auto light switches each contain about 1 gram of mercury; brake system switches each contain about 3 grams. A concentration of just 0.1 to 2.0 micrograms per liter of mercury in a water system can be lethal to aquatic wildlife. Since 2003, mercury switches in cars have been banned; however, many older cars contain this toxic component.

Product Stewardship is a Simple Solution



Littlefield's Late Model Used Parts, Corinna

Littlefield's Late Model Used Parts is an automobile dismantling and recycling business located in the small town of Corinna. Owner Kerby Littlefield has been working at the garage for more than 40 years, at first under his father and then taking over the business in 1989. The 68-year-old business employs 5 full-time employees. Their business is to purchase damaged cars at auction from around the country, transport them to the garage, dismantle them piece by piece, and sell the parts to customers in Maine and beyond.

The garage, like all others in the state, is required to remove mercury switches from the vehicles before they are dismantled and sold for usable parts or scrapped for metal. Ed Poulin, who has worked at Littlefield's for 27 years, dismantles the vehicles one by one, removes all the mercury switches, and stores them for recycling.

"It doesn't take too much time. I like taking things apart so I don't mind removing the switches," says Ed. "It's pretty simple. I usually know which cars have the switches, and if I'm not sure I can consult the instructions we've been given."

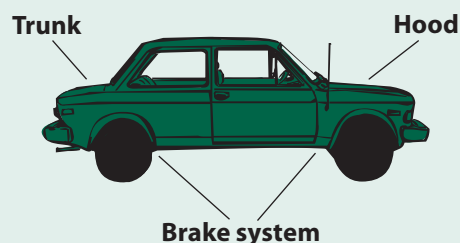
Each switch is stored in a special "Universal Waste" collection bucket provided by the vehicle manufacturers. At Littlefield's, the dismantler simply drops the switch in the bucket and logs the Vehicle Identification Number on a form. After three years, or once the bucket is full, the garage ships the bucket to ELVS, the national product stewardship organization. Littlefield's receives \$4 for each switch returned. Their most recent shipment contained 128 switches; earning Littlefield's a payment of more than \$500.

About 100 Maine businesses – either auto dismantlers and recyclers or scrap metal recyclers – currently collect mercury switches for recycling. All of them benefit from the cash incentive provided by manufacturers for each switch returned. And because these businesses remove, collect, and safely dispose of these switches, mercury is kept out of our land, water, and air.

"This is an easy program for us to carry out. And I think the cash incentive is a good way to get all the auto parts businesses in the state to do a good job."

– Owner Kerby Littlefield

Locations of Mercury Switches in Cars



Product Stewardship Helps Small Businesses



Aable Auto Parts, Chelsea

Since 1982 Bob Miville has owned Aable Auto Parts in Chelsea. Now semi-retired, Bob was instrumental in educating the automotive industry in New England about mercury removal. His son Gabe Miville and daughter Lisa Mitchell now oversee the business. Aable employs 7 total full-time employees. They purchase unwanted vehicles from customers around the state or from nation-wide auctions, dismantle the vehicles piece by piece, sell the re-useable parts to customers in Maine and beyond, and crush and sell the remaining parts to be recycled.

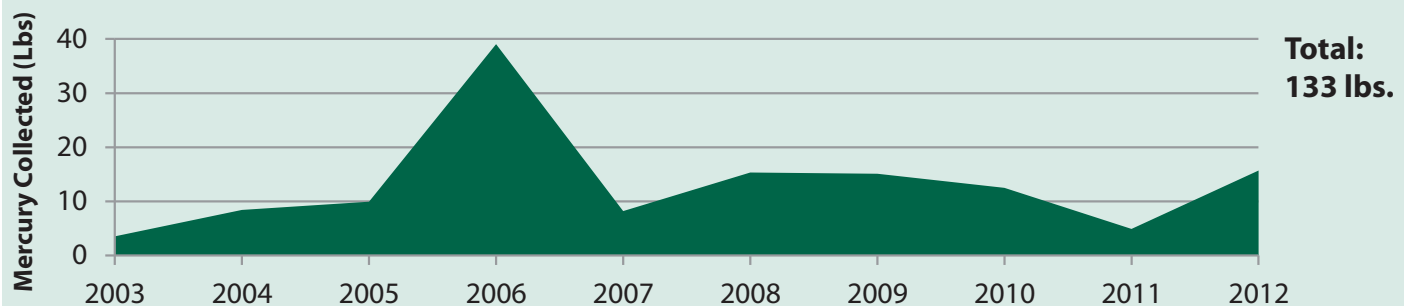
Auto Dismantler John Miville (no relation) has been with Aable for 22 years. In 2001 he helped educate other mechanics about switch removal in a series of trainings throughout the state. Since that time he has removed all of the switches that come through his garage. Fortunately, the use of mercury in vehicle switches has been banned since 2003, but many cars do still end up at auto recyclers with the toxic components still intact. "There's fewer and fewer that come through these days, since the newer cars don't use mercury in the switches," says Miville.

After 10 years of removing mercury switches from older cars, businesses like Aable easily comply with the program. Their employees are pleased to be able to take steps to protect the environment while also benefitting the business financially. "It feels good to know you're doing something good for Maine," says Miville, "And the payments we get for sending the switches in is that much more motivation."

"For those businesses like us that want to do the right thing for the environment, the mercury switch recycling program is a great benefit."

– Office Manager Lisa Mitchell

Mercury Recycled From Maine's Auto Switch Program

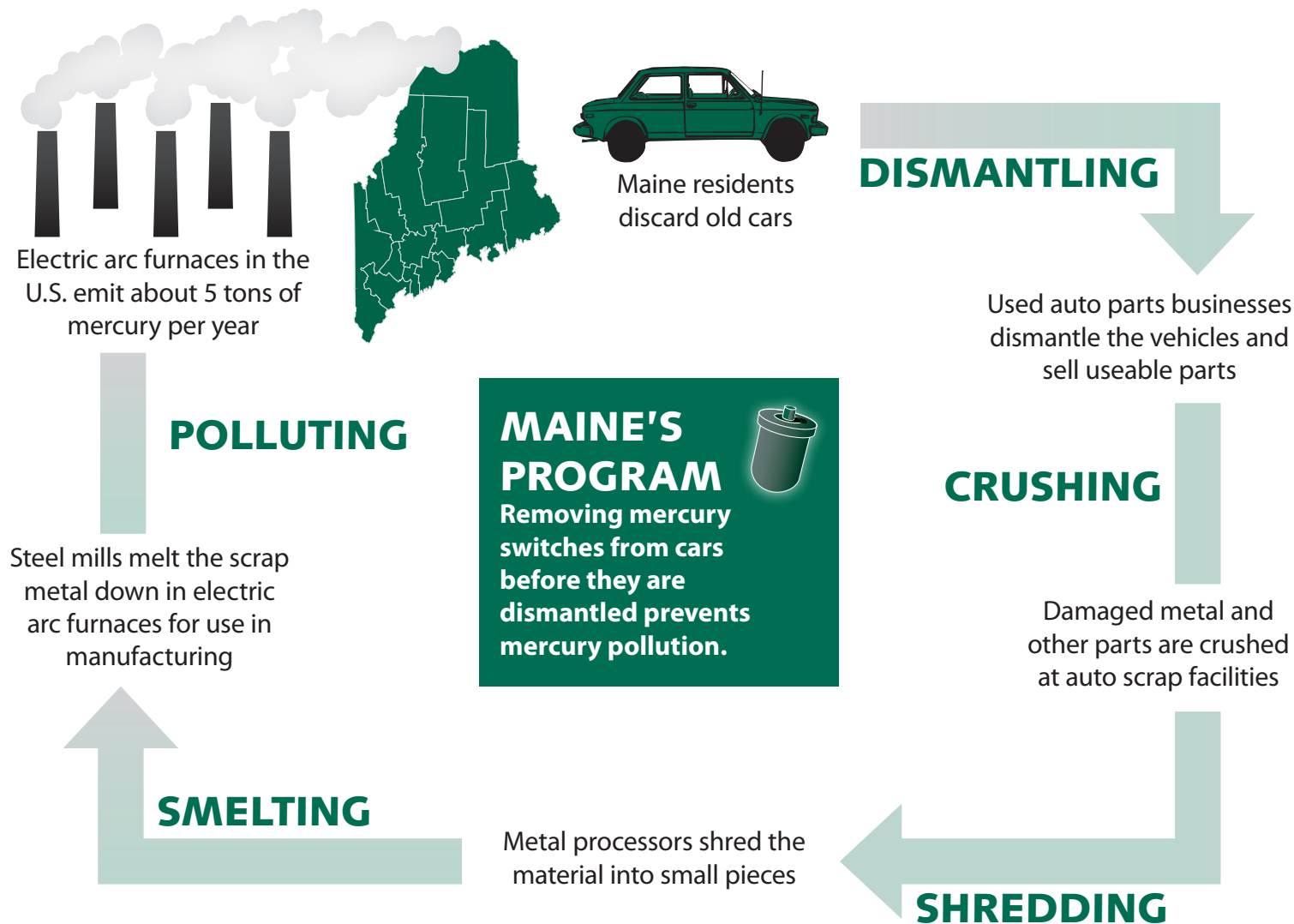


Product Stewardship Protects Maine's Environment

The Problem with Mercury

The Maine Legislature created a product stewardship program for mercury auto switches because mercury is a serious toxic metal and a potent neurotoxin. It attacks the developing brains of infants and children, causing brain damage and developmental problems in children. It has also been linked to health problems in adults.

If mercury auto switches are not removed from a vehicle prior to scrap recycling, mercury is released during the smelting process. Mercury persists and accumulates in the environment and in wildlife, where it causes developmental and neurological effects. Levels of mercury in Maine fish, loons, and eagles are among the highest in North America. Maine health officials have produced safe guidelines to limit fish consumption from Maine's inland waters due to mercury contamination levels.



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For Further Information:

NRCM's Product Stewardship work: www.nrcm.org/productstewardship.asp

Help support sustainable materials policies by joining NRCM's Action Network:
www.nrcm.kintera.org/Action_network_signup

End of Life Vehicle Solutions Corporation (ELVS): elvsolutions.org

Maine DEP Motor Vehicle Recycling Resources:
www.maine.gov/dep/waste/motorvehiclerecycling/index.html