

Mercury Auto Switches in Ohio: Recent Activities

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Mercury Containing Vehicle Switches

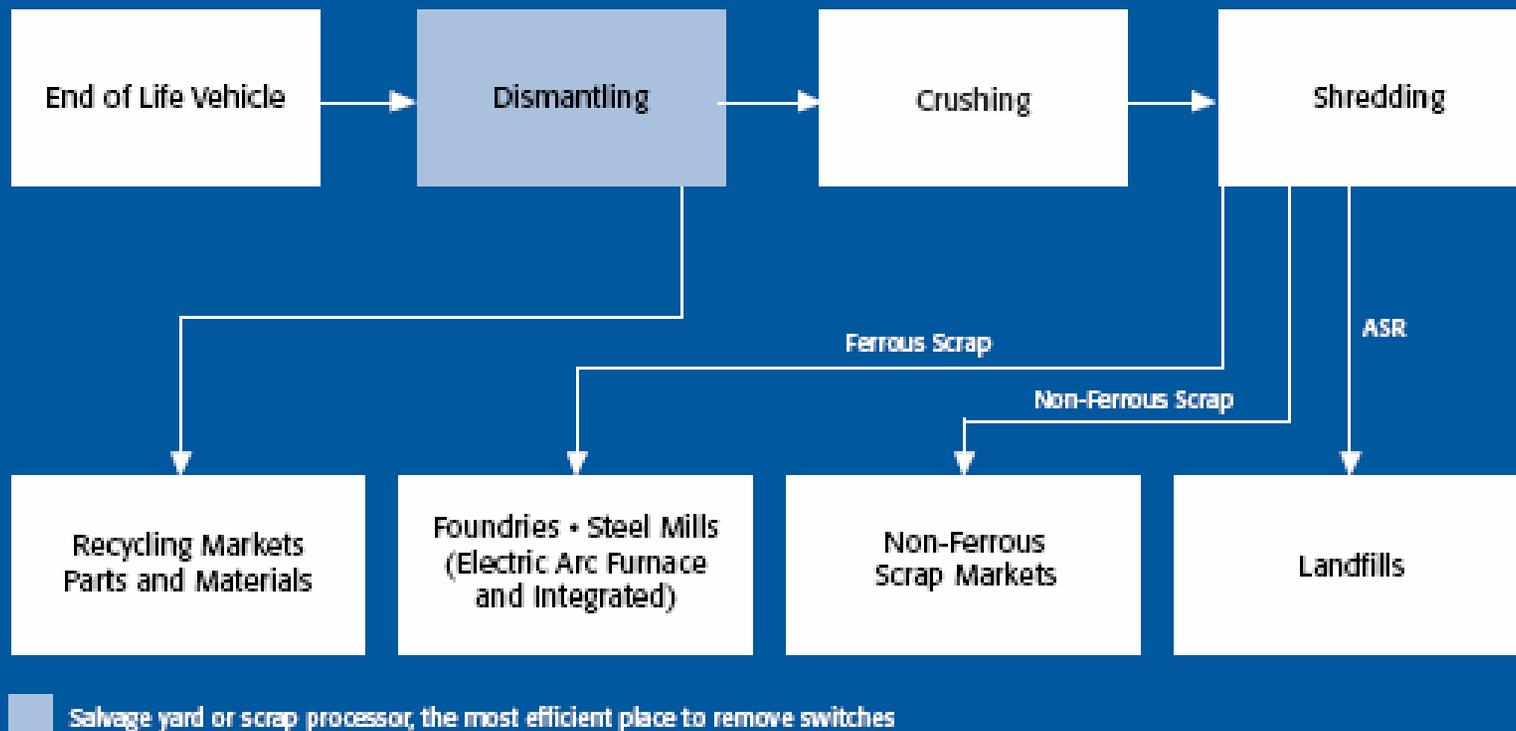
- Though phased out in domestic vehicles by model year 2003, mercury containing auto switches are major reservoir of mercury (up to 123 tons in current U.S. fleet) in vehicles still on road or in storage
- Majority of end-of-life vehicles are processed/recycled; if not pulled, mercury in switches can be released to environment during melting of shredded scrap metal in electric arc furnaces

Steel Recycling in U.S.

- Remelting of scrap steel:
 - Requires less energy than production of iron and steel products from iron ore
 - Reduces accumulation of scrap in environment
 - Reduces burden on landfills
- Primary source of steel for recycling is autos; 92% of feedstock in electric arc furnaces in 2003 was scrap
- Steel recycling rate from U.S. autos in 2004 was 102%*
- EAF Hg emissions may be 10 tons annually in U.S. Ohio ranked 4th nationally for 1973-2003 in auto Hg emissions (Ecology Center, 2004)

*: Fenton, M., U.S.G.S. Minerals Yearbook, Iron and Steel Scrap, 2004

Figure 1
Existing Vehicle Recycling Infrastructure



Source: Quicksilver Caucus, Removing Mercury Switches from Vehicles, August 2005

Mercury Switches – Previous Ohio Efforts

- Ohio Small Business Assistance Office produced Environmental Compliance Guide for Motor Vehicle Salvage Yards (updated in 2003)
- Ohio Environmental Protection Agency (OEPA) produced “Everything But the Rattle” video on best management practices for auto recycling industry
- SBAO also produced fact sheet on mercury switches:



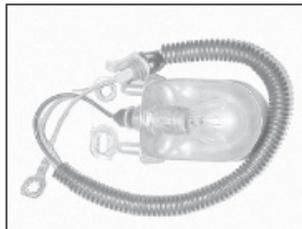
Fact Sheet

March 2003
Number 23

Managing Mercury Switches: Information for Auto Recyclers

Why is mercury a problem?

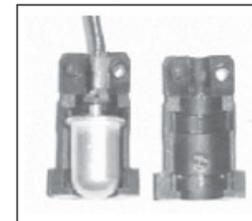
Mercury is a highly toxic metal and is often found in vehicle hood and trunk light switches. During crushing or shredding, mercury can be released into the environment, polluting water and soil. Mercury can also be released to the air when steel mills melt metal from scrapped autos.



Although the amount of mercury

Where are mercury switches located on cars?

Mercury light switches are often found on the car's hood and/or trunk. The actual mercury switch is the small, bullet-shaped metal or glass capsule that forms the base of the light socket and is visible once the bulb is removed. Sometimes the mercury switch will be found not at the light



NWF Efforts in Ohio

- Have worked with Ohio EPA on developing education/outreach efforts to salvage yards on mercury switches
- Had considered hosting workshop with salvage yard representatives on mercury switch issue
- Recent discussions with OEPA have indicated importance of direct outreach with appropriate materials (fact sheets and potentially more detailed video on switch removal practice)
- NWF decided survey of salvage yards would be helpful in identifying outreach measures

Auto Salvage Yard Survey

- Survey conducted by Liz Szaluta and Knoll Larkin, students at University of Michigan School of Public Health
- Purpose was to identify:
 - Awareness of mercury auto switch issues among OH salvage yards
 - Current recycling efforts
 - Information needs to more effectively address issue
- Involved phone survey of salvage yards (both Automobile Recyclers Association members and non-members), with 27 questions (open- and close-ended)

Auto Salvage Yard Survey: Results

- Sample size was 104 businesses; completed 30 surveys, with 10 refusals, and inability to contact 64
- Most businesses (86%) store and scrap nonworking vehicles
- Most businesses (95%) work with both domestic vehicles and imports
- 71% were aware of mercury switch issue
- 23% remove mercury switches “all the time”
- 14% remove mercury switches “most of the time”
- 57% never remove mercury switches

Auto Salvage Yard Survey: Results – 2

- Of those removing mercury switches, most (88%) do not take further action after pulling the switches (typically do not know what to do with the switches)
- Barriers to pulling switches included:
 - Time (47%)
 - Cost (37%)
 - Others (lack of information; extra effort; not knowing how to pull switches; not knowing how to dispose of removed switches; lack of legal requirements)
- Most (88%) indicated interest in participating in voluntary switch removal program

Auto Salvage Yard Survey – Next Steps

- Finalizing summary report
- Currently following up with participants interested in more information/switch removal program (have visited one Columbus facility)
- Compiling information on additional salvage yards in Ohio not part of original database
- In discussions with OEPA, determining most appropriate outreach/education effort to pursue (options include workshop, fact sheet preparation and distribution, and/or direct visits with targeted facilities)

Current Ohio EPA Efforts

- OEPA staff meeting in February 2005 to discuss development of voluntary program. Partners included:
 - Auto manufacturers
 - Ohio Auto and Truck Recycling Association
 - Institute of Scrap Recycling Industries
- While interest in voluntary program, ongoing challenge is funding, with opportunities including bounty, supplemental environmental project, and some funds from OEPA
- Currently, effort aimed at implementing recommendation of new national program in Ohio

Source: Frederick Jones, OEPA, personal comm.

National Mercury Switch Recovery Program

- Voluntary program announced in March 2006 (tentative agreement)
- Partners include:
 - Vehicle manufacturers
 - Steel manufacturers
 - Vehicle dismantlers, crushers, shredders, brokers
 - State representatives, U.S. EPA
 - Environmental community
- Vehicle manufacturers would have lead responsibility on collection and transport to collection/recycling facilities, education and outreach, and database to track progress

National Mercury Switch Recovery Program – 2

- Dismantlers and other participating facilities will recover mercury switches and submit to program
- Vehicle manufacturers and steelmakers will each contribute to three-year, \$4 million implementation fund, with incentive payments to those recovering switches
- Program will be implemented until 2017 (with possible termination earlier or extension, based on significance of estimated emissions)

Source: National Mercury Switch Recovery Program, Statement of Principles for Agreement, available at <http://www.steel.org/> or <http://www.ecocenter.org/>

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