

Study shows mercury levels from products decreasing, though still at dangerous levels

A recent study shows that mercury releases from products in the U.S. declined dramatically between 1990 and 2005, but that they continue to be a significant source of environmental contamination. Mercury released from products contributes nearly one-third of total mercury emissions to the air in the U.S. The findings offer a new view into the relative magnitudes of the different sources of mercury release.

Release of mercury to the environment is a serious problem and can harm the development of a fetus if the mother is exposed to high levels. Mercury also frequently accumulates in fish populations. A number of highly-used products release mercury throughout their lifecycles, often in ways that are difficult to measure directly. Therefore, there are considerable uncertainties about the magnitude of mercury release into the environment that is associated with these products.

The study, published in *Journal of Industrial Ecology*, uses a method called substance flow analysis to develop improved estimates of the environmental releases caused by mercury-containing products and to provide policy-makers with a better understanding of opportunities for reducing releases of mercury into the environment.

“Mercury-containing products such as thermometers, switches and dental products release mercury throughout the product life-cycle, including during production, use and disposal,” says Alexis Cain, lead author of the study and an environmental scientist with the EPA. “Substance flow analysis can be used to estimate the mercury releases to air, land and water at different stages of a product lifecycle. It can also help identify actions that would be effective in minimizing mercury releases.”

The disposal of mercury containing products has been the subject of public debate in recent years. Campaigns have been started to eliminate mercury thermometers and to discontinue mercury use in energy-saving fluorescent light bulbs. There is also controversy revolving around who should pay for the separate disposal of mercury containing switches and headlights removed from cars before they are crushed and recycled.

The study shows that in 2000, mercury releases caused by mercury-containing products accounted for an estimated 32 percent of mercury releases to air, 2 percent of mercury releases to land, and 4 percent of mercury releases to water. Significant sources of mercury releases include emissions from steel furnaces because of mercury containing devices in autos and other scrapped equipment, from transport and storage of waste because of broken mercury equipment, from cremations because of the mercury contained in dental amalgam used for tooth fillings, and from burn barrels used for trash disposal in rural areas.

The model can be used as a predictive tool to evaluate the potential impact of measures to reduce the use of mercury, to improve the management of mercury wastes or to reduce mercury releases through the installation of mercury control technologies.

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