

Recycling Mercury Thermostats in Ohio

A FACTSHEET OF THE NATIONAL WILDLIFE FEDERATION



The Problem – Mercury in the Environment

Mercury contamination is the most common cause of fish consumption advisories in Ohio and across the U.S. A statewide advisory is in place in Ohio, recommending that all individuals limit their consumption of all fish from all the state's waters to no more than one meal per week (and more restrictive advisories are in place at dozens of water bodies).¹ By one estimate, over 600,000 babies annually in the U.S. are born at risk for neurodevelopmental problems (such as in memory, attention and language development) due to elevated mercury exposures.²

Human activities have significantly increased mercury levels in the environment, including through activities that release mercury incidentally present in feedstocks (e.g. coal burning) and through mining of mercury and use in products and processes. While there has been significant progress in reducing the uses of mercury



in the past 15 years, significant quantities are still used in various applications, including in switches and relays, electrical lighting, mercury cell chlor alkali plants, thermometers, and thermostats.

Mercury in Thermostats and Alternatives

Mercury has been used for a number of years in some electromechanical thermostats, where the mercury is part of a tilt switch that activates heating and/or cooling equipment. Some mercury thermostats have multiple switches, and the average mercury content of all mercury thermostats is approximately 4 grams per thermostat.³ As much as 21 tons of mercury has been used in producing mercury thermostats annually in the U.S., out of an estimate 189 – 250 tons consumed in products or processes.⁴

Ohio recently joined a group of at least nine states that have banned the sale and/or use of mercury containing thermostats,⁵ with the January 2007 signing of a mercury products bill that included restrictions on mercury containing thermostats. The new law prohibits the sale or installation of mercury containing thermostats in the state starting in April 2008 with two exemptions (in cases of a visually impaired person or manufacturing processes requiring temperature control).⁶ Non-mercury mechanical thermostats and digital thermostats have long been on the market; programmable digital ther-



mostats have the additional advantage of promoting energy efficiency – cutting down on utility bills and pollution – with over 200 models available.⁷ In addition, Honeywell recently introduced a mercury-free version of their standard round electromechanical thermostat popular in homes.⁸

Although mercury thermostat sales are being phased out in Ohio, there will long be a need to properly dispose of existing mercury thermostats, given the millions of such thermostats currently in use in the state. Mercury containing thermostats are considered universal waste, with streamlined management requirements compared to those that otherwise apply to hazardous waste.⁹ However, ensuring proper disposal of these products requires a commitment by those working with thermostats, and fortunately there is a voluntary national program to expedite the collection and recycling of mercury containing thermostats (see other side).

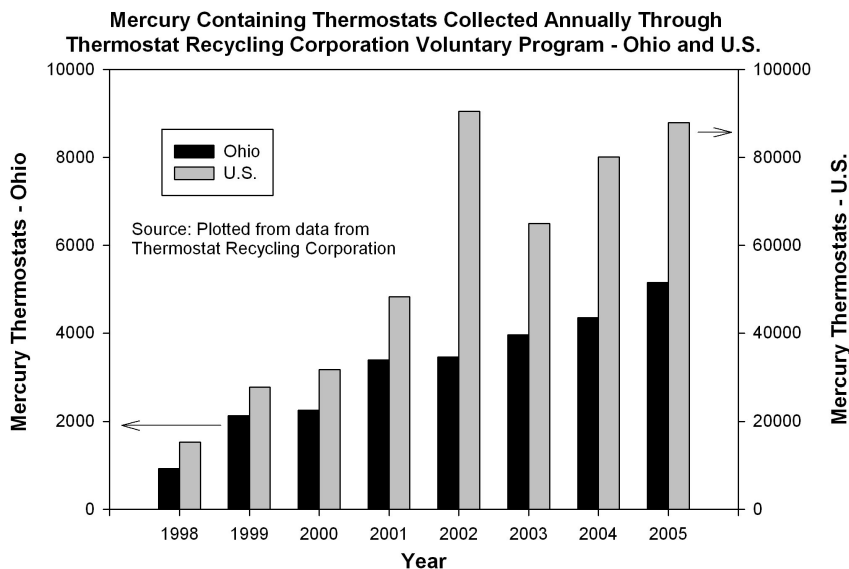
Recycling Mercury Containing Thermostats

The Thermostat Recycling Corporation (TRC) is a national, voluntary not-for-profit corporation that was established nearly a decade ago by thermostat manufacturers Honeywell, General Electric and White-Rodgers (the three companies that have produced the largest number of mercury thermostats) to address this issue. The program focuses on wholesale heating, ventilation and air conditioning (HVAC) companies. Participating wholesalers receive a collection bin, and after it is filled with intact collected thermostats, the bin is sent to the TRC (with shipping covered by the TRC), the thermostats are disassembled, and the mercury subsequently recycled.¹⁰

There has been a general increase in collection of thermostats through the program – in both Ohio and the U.S. – since 1998, as indicated in the adjoining graph.¹¹ For 2005, nearly six percent of all thermostats collected nationally were from Ohio, which is

higher than the state's share of the U.S. population.¹² According to the TRC, 57 Ohio wholesalers were participating in the program as of September 2006.¹³ However, the overall participation in the program across the country is still well below where it could be: for example, the 48, 215 thermostats collected in 2001 nationally amounted to only 1.5 percent of the over 3.2 million units produced that year by the three largest mercury thermostat manufacturers.¹⁴

Increasing collection rates will require greater involvement by both HVAC wholesalers and individual contractors, and associations can play a key role in highlighting the importance of the issue with members and encouraging them to participate in the national program. Replacing mercury thermostats and reducing the improper disposal of these thermostats are important steps in helping to protect Ohio's environment.



Further Information

Thermostat Recycling Corporation, <http://www.nema.org/gov/ehs/trc/>
1-800-238-8192

Energy Star, <http://www.energystar.gov/>

Ohio EPA Mercury Reduction
http://www.epa.state.oh.us/ocapp/p2/mercury_pbt/mercury.html



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References

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3. Product Stewardship Institute, Thermostat Stewardship Initiative, Background Research Summary, Final, October 18, 2004, <http://www.productstewardship.us/displaycommon.cfm?an=1&subarticlenbr=98>
4. Leopold, B.R., Use and Release of Mercury in the United States, report to U.S. EPA National Risk Management Research Laboratory, EPA/600/R-02/104, December 2002, available at <http://www.epa.gov/nrmrl/pubs/600r02104/600r02104prel.pdf>
5. Quicksilver Caucus 2006, Mercury-Added Product White Paper, November 2006, http://www.ecos.org/section/committees/cross_media/quicksilver
6. Additions to Ohio Revised Code, Sections 3734.61 to 3734.65, http://www.legislature.state.oh.us/BillText126/126_HB_443_EN_N.html
7. See Energy Star, Programmable Thermostats Product List, http://www.energystar.gov/ia/products/prod_lists/thermostats_prod_list.pdf
8. Harris, A. D. Classic and new technology battle for residential control (2006 Dealer Design Awards: Honoring Products in the Category of Residential Controls, Including Zoning), *Air Conditioning, Heating & Refrigeration News* 228.12 (July 17, 2006), pp. 46-48.
9. Ohio Environmental Protection Agency, Universal Waste, Department of Hazardous Waste Management Guidance Document, December 2004, http://www.epa.state.oh.us/dhwm/pdf/New_Universal_Waste_Guidance.pdf
10. See fact sheets/flyers at Thermostat Recycling Corporation, <http://www.nema.org/gov/ehs/trc/>
11. Data plotted from Thermostat Recycling Corporation, Thermostat and Mercury Recovery Rises Again in 2005, spreadsheet available at <http://www.nema.org/gov/ehs/trc/>
12. Population data from U.S. Census Bureau, Quick Facts, <http://quickfacts.census.gov/qfd/states/39000.html>
13. Thermostat Recycling Corporation, 2006 September Wholesaler Participation Lists spreadsheet, <http://www.nema.org/gov/ehs/trc/>
14. Production data noted in Product Stewardship Institute, 2004, *Op. Cit.*