

Mercury-added Products: Progress in Reductions & Ongoing Challenges

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N E W M O A



Overview

- Background - What do we know about the current uses of mercury in products?
- Mercury legacy products
- Overview - state & local programs & requirements
- Challenges

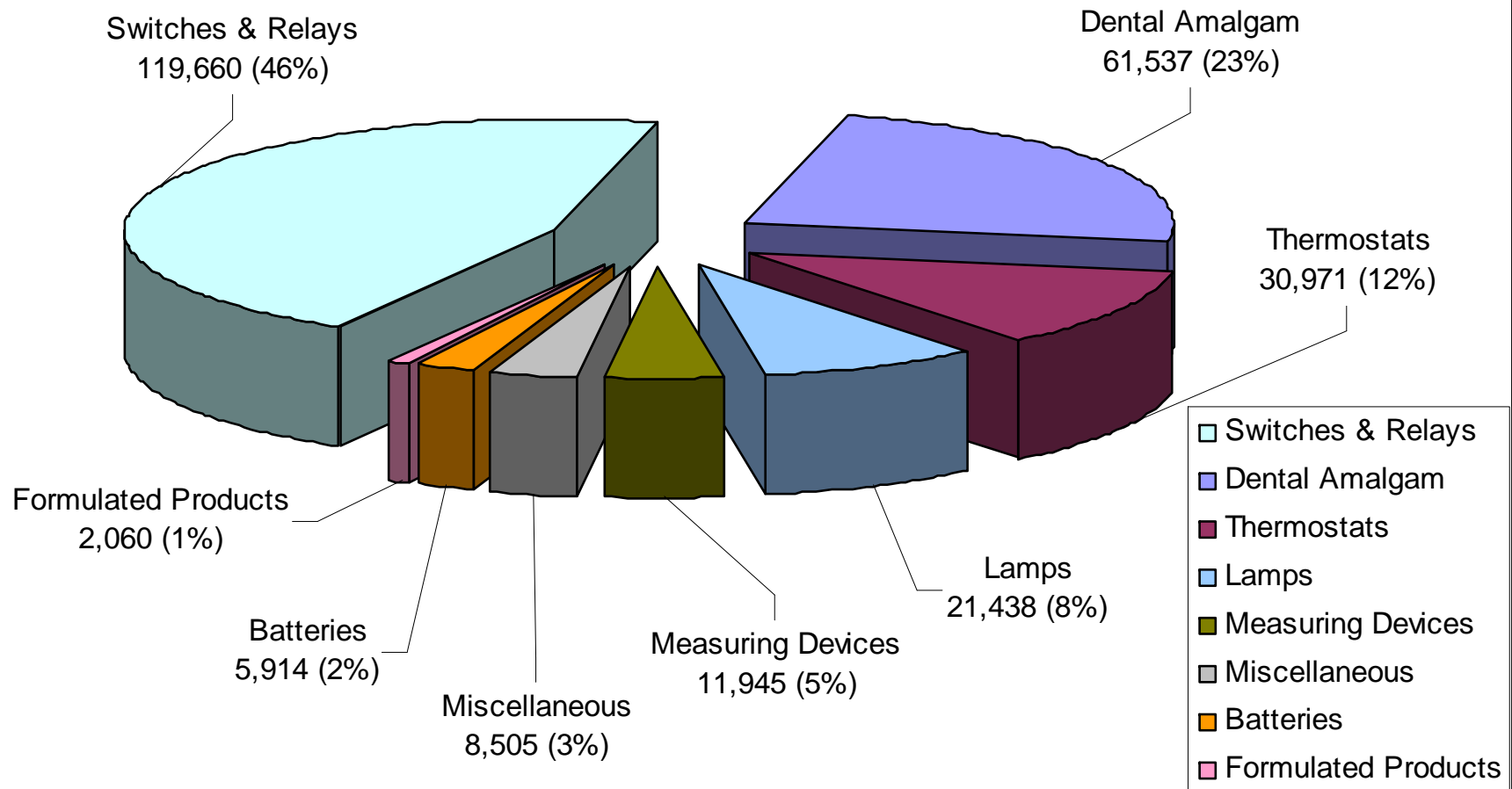
Mercury Use in Products: Overview

www.newmoa.org/prevention/mercury/imerc.cfm

- CT, LA, ME, MA, NH, NY, RI, & VT Notification requirements; data available online
- Report summarizing data for calendar year 2001 & 2004 mercury use:
www.newmoa.org/prevention/mercury/imerc/factsheets/mercuryinproducts.pdf
- Notification requires manufacturers/importers/distributors of mercury-added products for sale in the applicable states to report on mercury use in products & total mercury used in all products sold in U.S. in calendar year

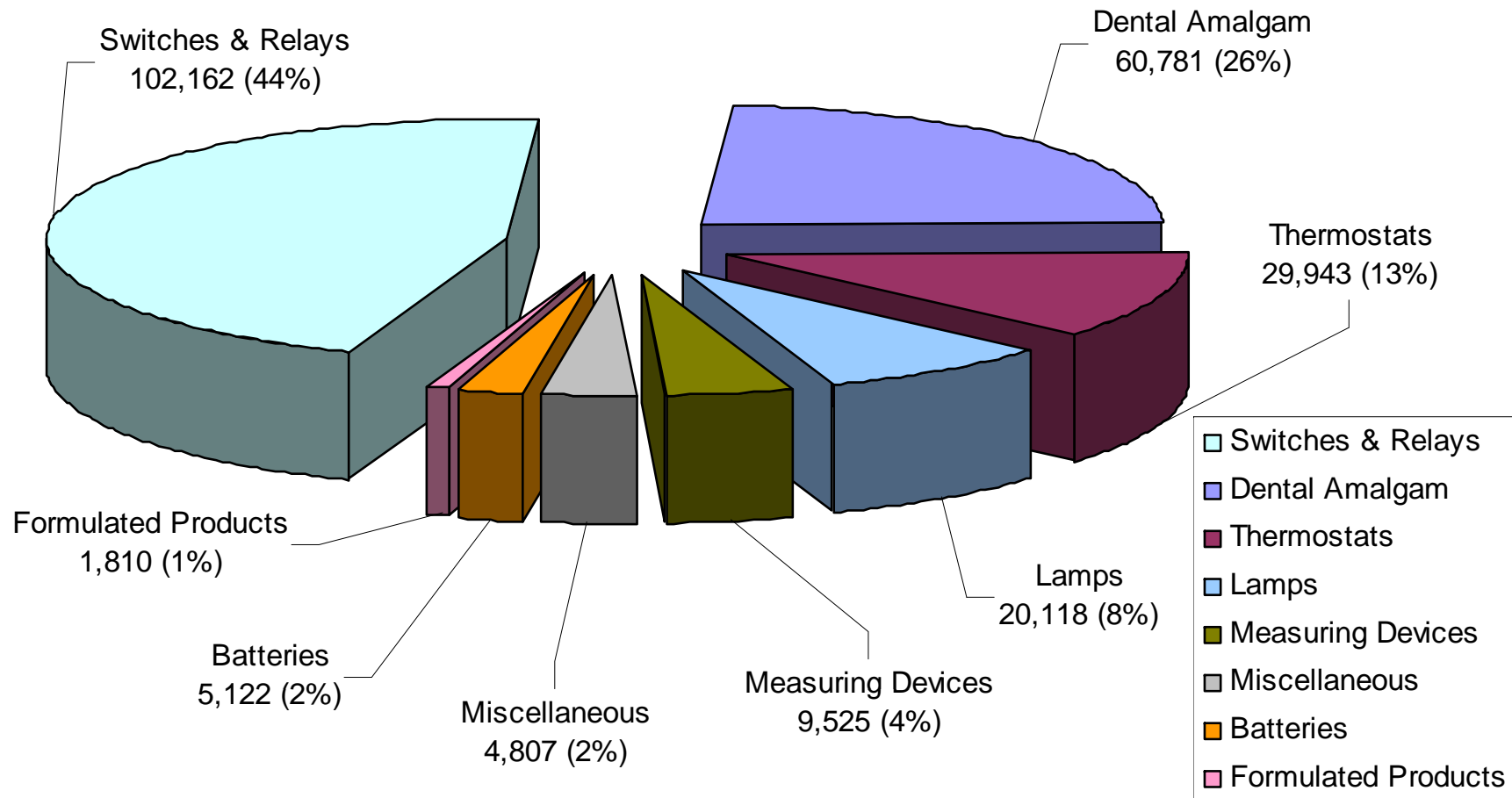
2001 Total Mercury Use by Product Category in U.S.

Total Use of Mercury in Products: 2001 (pounds)



2004 Total Mercury Use by Products Category in U.S.

Total Use of Mercury in Products: 2004 (pounds)



Caveats

- Continually identify manufacturers & products with mercury
- No pre-2001 data in database/report
- Product categories with known underreporting - neon lamps, switches & relays
- No data on pharmaceuticals
- Does not cover full life cycle - releases during mining, recycling, manufacturing

Overall Results

- 131 tons of mercury sold in products in 2001 & 117 tons sold in products in 2004; decline of 11% (14 tons)
- Switches, relays, & dental amalgam capsules accounted for ~70% of total mercury use in 2001 & 2004 in the U.S.
- ~60 tons of mercury was sold in switches & relays in 2001, which declined by 14.5% in 2004
- ~30 tons of mercury was sold in dental amalgam in 2001 & 2004

Overall Results

- ~15.5 & 15 tons of mercury were sold in thermostats in 2001 & 2004, respectively, a decrease of 3.5%
- Approximately 10.7 tons of mercury sold in lamps in 2001, which decrease by to 10.1 tons in 2004, a decline of 6%

Overall Results

- Measuring devices - barometers, manometers, thermometers, & blood pressure cuffs - 6 tons in 2001 & 4.8 tons in 2004
- Measuring devices contain the largest amounts of mercury in individual products
- ~3 tons of mercury used in button cell batteries in 2001; declined by 14% in 2004 to 2.6 tons

Overall Results

- Total amount of mercury reportedly phased-out by the manufacturers from 2002 to 2006: ~11.6 tons
- Anticipate greater reductions in mercury use after 2006 when many state laws restricting sale of products went into effect
- Currently compiling & reviewing 2007 data

Mercury-added Products Fact Sheets

www.newmoa.org/prevention/mercury/imerc/FactSheets/index.cfm

- Cover mercury use in:
 - Switches & relays
 - Dental amalgam
 - Measuring devices
 - Batteries
 - Cooking equipment (i.e., gas ovens)
 - Lighting
 - Thermostats
 - Pumps
 - Formulated products

Mercury-added Legacy Products Webpage

- Legacy product: no longer sold as new
- Commercial & consumer products
- Commercial: hospitals, measuring devices, schools, & other commercial buildings
- Consumer: antiques, appliances, automobiles, novelties, religious items, sports & recreational equip.
- newmoa.org/prevention/mercury/projects/legacy/index.cfm

Mercury-added Legacy Products Webpage

Gas Flow Regulators

Description: Some residential homes that were built prior to 1961 contain a mercury regulator attached to the gas meter inside the home (often in the basement). Mercury-containing pressure regulators typically have horizontal disc-shaped bodies. These regulators contain between one and two teaspoons of liquid elemental mercury, which is equivalent to approximately 100-135 grams, or about a quarter of a pound.

Purpose of the Mercury: The purpose of the regulator is to allow an appropriate flow of natural gas to the household boiler and other appliances. The mercury in the regulator aids in maintaining the gas flow pressure and acts as a seal to the relief vent in the event of a pressure surge.

Potential Hazards: Mercury gas flow regulators do not create a spill risk while in service, but mercury spills are common during removal. Extreme care should be taken not to spill any mercury during removal. If a spill does occur, persons should immediately contact their state environmental agency for instructions on proper clean-up and disposal. Persons that have been exposed to a mercury spill should contact the public health department or poison control center.

Recycling/Disposal: These devices should be removed only by qualified gas company personnel. In homes scheduled for demolition that have mercury regulators, the owner should contact the local gas company to ensure proper removal of these devices. In other homes, the owner should contact the gas company, so that they will be aware of the presence of the mercury device and remove it properly when the meter needs to be replaced. The mercury must be disposed of as hazardous waste or recycled and reclaimed for reuse.

Statutes and Other Information: As technology progressed, other regulators were developed that do not contain mercury. Therefore, new homes built after 1961 do not have mercury gas flow regulators.

Related Links:

http://www.atsdr.cdc.gov/hac/pha/resmerc/nic_p1.html

<http://www.health.state.mn.us/divs/eh/hazardous/topics/mercurygas.pdf> http://www.epa.gov/region07/factsheets/2008/mercury_gas_regulators_05_06_2008.html <http://www.epa.gov/epaoswer/hazwaste/mercury/con-prod.htm#1c10>



Source: Minnesota Dept. of Health, (disc-shaped mercury-containing gas pressure regulator)



Source: Minnesota Dept. of Health, (mercury-containing device found on a low pressure system)

Mercury-added Products Laws - Notification & Labeling

- Notification Requirements
- Labeling Requirements: CT, LA, ME, MA, MN, NH, NY, RI, VT, WA (also MD & OR)
- Compliance information on Notification & Labeling:
www.newmoa.org/prevention/mercury/imerc/plnotification.cfm
- Interstate Clearinghouse - IMERC

Disposal Bans & UWR

- Disposal Bans: Cannot dispose of any mercury-added product in landfill or incinerator; must safely recycle or dispose as HW; effective in ME, MA, MN, NH, NY, RI, & VT
- Regulatory framework: Universal Waste Rule; varies by state; some states more stringent than EPA

Mercury-added Products Laws - Sales Bans

- Bans: No sale in state or local area after effective date; in effect for numerous products, many states
- Bans are product specific & mostly target switches & relays, measuring devices, & thermostats
- Compliance information:

www.newmoa.org/prevention/mercury/imerc/productban.cfm

Mercury-added Laws - Phase-outs

- Phase-outs: No sale in state (i.e., CA, CT, IL, LA, ME, MA, NH, RI, & VT) after effective date unless apply for & receive exemption; collection plans
- Product specific (varies by state) or by amount of mercury in the product
- Interstate Cooperation - IMERC
- Compliance information:

www.newmoa.org/prevention/mercury/imerc/phaseoutinfo.cfm

Mercury-added Products Collection Programs

Many models for programs -

- State & local governments often in partnership w/companies - fever thermometers & drug stores
- Manufacturers - thermostats, bounty, & Thermostat Recycling Corporation
- Lamp recycling - increasingly important - required in some states
- Dental amalgam separators - increasingly required by states

Mercury-added Products Collection Programs

Many models for programs -

- Collection plan requirement
- School cleanouts: state & local governments often in partnership w/schools
- Dairy manometers: state & local governments often in partnership w/agricultural agencies & programs
- Hospitals: EPA & health care initiative

Mercury-added Products Collection Programs

Many models for programs -

- Car switches: state & local governments in partnership w/car manufacturers under national program (started w/state laws)
- Household hazardous waste programs - households & small businesses
- PSI initiatives - promoting extended producer responsibility for thermostats & lamps

Example - Mercury-added Products Collection Programs in the Northeast

- Est. for NE: ~7.5 tons 2000 - 2006
- Dairy manometers - 140 lbs.
- Fever thermometers - 352 lbs.
- Public K-12 schools - 4,695 lbs. (456)
- Hospitals - 761 lbs.
- HHW collection - 6,092 lbs.
- Auto switches - 267.5 lbs. (>120,000)
- Thermostats (TRC) - 458 lbs.
- Bulk dental mercury - 2,151 lbs.

Mercury-added Products Collection Programs

Key Challenges-

- Retail & manufacturer involvement, focused on fluorescent lamp & thermostat recycling
- Product breakage (i.e., lamps) in homes & businesses; safe cleanup & disposal
- Neon, tanning, & other lamps
- Long term safe management of mercury

Additional Information

www.newmoa.org/prevention/mercury

Online Information Resources-

- IMERC
- Mercury Topic Hubs
- Mercury Reduction Projects Database
- Mercury Use in Schools Webpage
- Lamp Recycling

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