

# PUSHING TECHNOLOGY



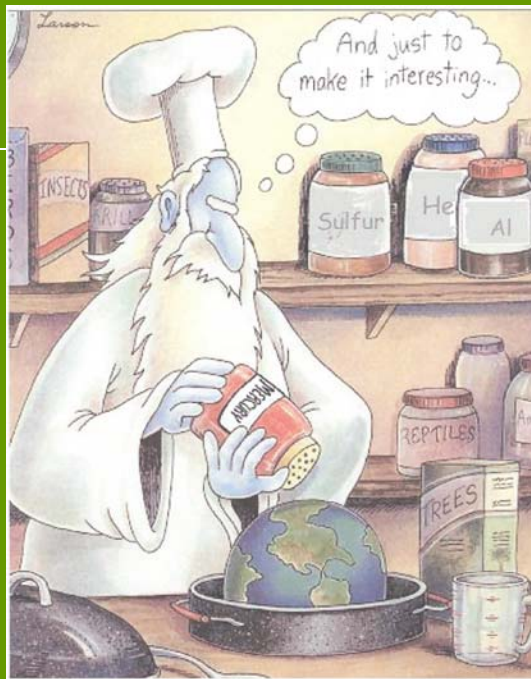
## REPLACING MERCURY-ADDED PRODUCTS

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RI DEPARTMENT OF  
ENVIRONMENTAL MANAGEMENT

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## How we got here

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- 1998 Conference of New England Governors and Eastern Canadian Premiers meeting led to the development of the Mercury Action Plan: a regional approach to achieve reductions in mercury use, emissions, and discharges
- Goal: virtual elimination of anthropogenic mercury releases in the region

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## Northeast Waste Management Officials' Association (NEWMOA)

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- To assist this partnership, NEWMOA developed model legislation for the states
- In 2001 NEWMOA launched the Interstate Mercury Education and Reduction Clearinghouse (IMERC)
- The IMERC state members currently include California, Connecticut, Illinois, Louisiana, Maine, Massachusetts, Minnesota, New Hampshire, New Jersey, New York, North Carolina, Rhode Island, Vermont, and Washington

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## NEWMOA MODEL INCLUDES

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- Interstate Clearinghouse
- Notification and Labeling
- Product Phase-out and Exemption
- Bans on the Sale of Certain Mercury-Added
- Collection Plans
- Disposal Ban
- Control on the Sale of Elemental Mercury
- Public Education and Outreach
- Universal Waste Rule
- State Procurement

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## IMERC

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- The Interstate Mercury and Education Reduction Clearinghouse (IMERC) Mercury-Added Products Database presents information submitted by or on behalf of mercury-added product manufacturers to the IMERC-member states on the amount and purpose of mercury in consumer products. The database is intended to inform consumers, companies, recyclers, policy makers, and others about: products that contain intentionally-added mercury, the amount of mercury in a specific product, the amount of mercury in a specific product line sold in the U.S. in a given year, and manufacturers of mercury-added products

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## MERCURY IN PRODUCTS

- Thermometers
- Thermostats
- Fluorescent and other lamps (including CFLs)
- Manometers
- Barometers
- Switches
- Relays
- Button-cell batteries
- Dental amalgam
- Chemicals and Formulated Products

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## THERMOMETERS



### Alternatives:

- Galinstan-in-glass (liquid in a glass tube)
- Compact digital thermometers
- colored-liquid in glass thermometer (alcohol, kerosene, and citrus extract based solvents that are dyed blue, red or green)
- Digital
- Bi-metal
- Infrared thermometers

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## SWITCHES, RELAYS AND THERMOSTATS



- NEW PRODUCTS USE:
- Metallic balls
- Mechanical or Solid State Switches
- Electronic Ignition
- Magnetic switches
- Optical switches
- Digital electronic thermostats

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## ELECTRICAL LIGHTING



- There are no non-mercury fluorescent or HID bulbs available at this time.
- CFLs contain an average of 5 milligrams of mercury
- Green tip or low-mercury fluorescent lighting contains less mercury (3.5-4mg)
- Light-emitting diode (LED) technology

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## MEASURING DEVICES AND CONTROL INSTRUMENTS



Alternatives:

- Electronic monitors
- Aneroid manometer
- needle/bourdon gauge
- digital manometer

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## DENTAL SUPPLIES



Alternatives include:

- Gold
- Ceramic
- Porcelain
- Polymers
- Composites

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## BATTERIES



- Alternatives to Hg:
- Use of an anti-corrosion additive material in the anode
- proprietary active cathode material (surface process technology for the cathode material)
- surface process technology for the cathode material to further suppress zinc corrosion
- Lithium
- Capacitors
- Photovoltaic cells

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## NEON



- Neon lights are estimated to contain between 50 mg and 600 mg mercury dosage per bulb.
- In the past several years, sign manufacturers have reduced the amount of mercury to less than 100 mg per bulb

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## FORMULATED MERCURY-ADDED PRODUCTS



- Thimerosal, which is approximately 50% mercury by weight, has been one of the most widely used preservatives in vaccines (25 micrograms of mercury per 0.5 ml dose)
- Mercury compounds (e.g., mercuric chloride, mercuric nitrate, and others) were used as fungicides and biocides in paint
- Product reformulation

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## LEGACY PRODUCTS



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## RESOURCES

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### **An Investigation of Alternatives to Mercury Containing Products**

#### **Lowell Center for Sustainable Production**

<http://www.state.me.us/dep/mercury/lcspfinal.pdf>

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## RESOURCES

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### **NEWMOA P2Rx Mercury Hub**

#### **Mercury in Products**

[http://www.newmoa.org/prevention/topichub/index.cfm?page=subsection&hub\\_id=22&subsec\\_id=19](http://www.newmoa.org/prevention/topichub/index.cfm?page=subsection&hub_id=22&subsec_id=19)

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## IN CONCLUSION

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### Don't Mess With Mercury

<http://www.youtube.com/watch?v=HzZuvtDFqCQ>

<http://dontmesswithmercury.org/>



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