

IMERC Fact Sheet

Formulated Mercury-Added Products

Last Update: October 2008

“Formulated Mercury-Added Products” summarizes the use of mercury-added chemical products that are sold as a consistent mixture of chemicals. These include laboratory chemicals, cleaning products, coating materials, acids, alkalis, bleach, stains, reagents, preservatives, fixatives, buffers, and dyes.¹ This Fact Sheet covers all the types of formulated mercury-added products; the total amount of formulated mercury-added products that were sold as new in the U.S. in 2001 and 2004; and companies that have phased-out the products’ manufacture and sale.

The information in this Fact Sheet is based on data submitted to the state members of the Interstate Mercury Education and Reduction Clearinghouse (IMERC)² including Connecticut, Louisiana, Maine, Massachusetts, New Hampshire, New York, Rhode Island, and Vermont. The data is available online through the IMERC Mercury-Added Products Database.³

A number of important caveats must be considered when reviewing the data summarized in this Fact Sheet:

- The information may not represent the entire universe of formulated mercury-added products sold in the U.S. The IMERC-member states continuously receive new information from mercury-added product manufacturers, and the data presented in this Fact Sheet may underestimate the total amount of mercury sold in this product category.
- The information summarizes formulated mercury-added products sold nationwide since 2001. It does not include products sold prior to January 1, 2001 or exported outside of the U.S.
- Reported data includes only mercury that is used in the product, and does not include mercury emitted during mining, manufacturing, or other points in the products’ life cycle.

¹ This Fact Sheet does not cover mercury-added pharmaceuticals and personal care products that are regulated by the Food and Drug Administration (FDA).

² IMERC: <http://www.newmoa.org/prevention/mercury/imerc/about.cfm>

³ Mercury-Added Products Database:
<http://www.newmoa.org/prevention/mercury/imerc/notification/index.cfm>

Types of Formulated Mercury Products

The mercury content of formulated products are reported as a concentration in parts per million (ppm). Manufacturers are permitted to report the mercury amount in individual formulated products as an exact number or as a range.



Thimerosal-Preserved Vaccine
Photo Source: Center for Disease Control



Mercury Compounds
Photo Source: Cuoco & Cormier

Mercury content for preservatives and reagents and mercury compounds typically ranges from greater than 0 to greater than 250 ppm, with some products containing a mercury concentration of greater than 100,000 ppm.

Mercury Use in Formulated Products

Formulated mercury-added products can be grouped into two categories: preservatives and reagents (i.e., thimerosal); and mercury compounds (i.e., mercuric chloride, mercuric nitrate, and others).⁴

Thimerosal is a mercury-added organic compound that is widely used as a preservative in pharmaceuticals, including vaccines, and other formulated products to prevent bacterial contamination.⁵ Mercury compounds, such as mercury chloride and mercuric nitrate, are used in chemical reagents, in the leather tanning process, as a catalyst for vinyl chloride, in electroplating, and in various laboratory experiments and applications. Mercury compounds may also be found in school science laboratories and are sometimes used for various chemistry experiments in high schools and colleges/universities.

Table 1 presents the amount of mercury sold in formulated products in 2001 and 2004 in the U.S. as reported by 20 manufacturers that have reported to the IMERC-member states. More detailed information can be found in the report, *Trends in Mercury Use in Products: Summary of the IMERC Mercury-added Products Database*, June 2008.⁶

⁴ Manufacturers are not required to notify their total bulk elemental mercury sales to IMERC under the IMERC-member state notification requirements because it is not classified as a mercury-added product. Therefore, data on the use of elemental mercury is not included in this Fact Sheet.

⁵ Vaccines are pharmaceutical products regulated by the U.S. Food and Drug Administration (FDA). The IMERC-member states exclude these products from their Notification requirements. Therefore, data on mercury use in thimerosal in vaccines is not included in this Fact Sheet.

⁶ Trends in Mercury Use in Products: Summary of the IMERC Mercury-Added Products Database:
<http://www.newmoa.org/prevention/mercury/imerc/pubs/reports.cfm>

Table 1: Total Formulated Mercury-added Products Sold in the U.S. (Pounds)		
Product	2001 Total Mercury	2004 Total Mercury
Preservatives/Reagents	598	472
Mercury Compounds	1,462	1,338
TOTAL	2,060 (~1.03 tons)	1,810 (~0.95 tons)

In 2001, approximately one ton of mercury was sold in formulated products, which decreased by approximately 0.1 tons in 2004, representing a decline of approximately 12 percent. As pharmaceutical and chemical manufacturers continue efforts to eliminate thimerosal use as a preservative and educational institutions discontinue use of elemental mercury and mercury compounds in teaching experiments due to state restrictions, mercury use in this product category is likely to continue to decline.

Phase-Outs & Bans on the Sale of Formulated Mercury-added Products

The following IMERC-member states currently have restrictions on the sale and/or distribution of formulated mercury-added products: Connecticut, Louisiana, and Rhode Island.⁷ Minnesota also bans the sale and distribution of over-the-counter pharmaceutical products and cosmetics (including toiletries and fragrances) that contain mercury.⁸

The following is a list of companies and formulated mercury-added products that the manufacturers have reportedly eliminated from the U.S. market since 2001:

Rowley Biochemical reported to the IMERC-member states that they stopped the sale and distribution of mercury compounds (e.g., mercuric chloride and mercuric oxide) to Connecticut as of August 2003, in conjunction with Connecticut's mercury-added product phase-out law which became effective on July 1, 2004. In October 2006, Rowley Biochemical confirmed to the IMERC-member states that they had completely discontinued the manufacture and sale of all of their mercury-added products throughout the U.S.

Aquarium Pharmaceuticals, Inc. (also known as Mars Fishcare) reported to the IMERC-member states that they stopped the sale and distribution of mercury-added test solutions and reagents to Connecticut prior to January 1, 2004. They also reported in 2007 that they have taken several steps to ensure that their mercury-added chemical products are no longer shipped to Connecticut or Rhode Island.

⁷ State Mercury-Added Phase-Out Guidance:
<http://www.newmoa.org/prevention/mercury/imerc/phaseoutinfo.cfm>

⁸ State Mercury-Added Product Ban Guidance:
<http://www.newmoa.org/prevention/mercury/imerc/productban.cfm>

EMD Chemicals reported to the IMERC-member states that they no longer sell or distribute their mercury-added chemical reagents, fixatives, and test solutions in Connecticut, Rhode Island, and Massachusetts, in conjunction with the effective dates of these states' mercury-added product phase-out laws (July 1, 2004; July 1, 2005; and May 1, 2007).

Jackson ImmunoResearch Laboratories, Inc. reported to the IMERC-member states that they phased-out the manufacture of mercury-added chemical products (e.g., thimerosal) in 2004 and completed the sale and distribution of their remaining inventory of mercury-added products by the end of 2006.

Anatrace, Inc. reported to the IMERC-member states that they no longer sell or distribute mercury-added chemical products, including Baker's dimercurial and dimercurial acetate, as of September 30, 2005.

BioGenex Laboratories, Inc. reported to the IMERC-member states that they ceased the manufacture and sale of their chemical buffer products containing thimerosal, a mercury-added preservative in October 2005. They have replaced the use of thimerosal in this product with sodium azide, a preservative that does not contain mercury.

Instrumentation Laboratory reported to the IMERC-member states that they no longer sell or distribute their mercury-added solutions and diagnostic test kits (i.e., containing thimerosal) to Connecticut and Rhode Island as of December 2006. They also reported that they planned to cease the manufacture of these products in 2007, but have yet to confirm this to the IMERC-member states.