

MERCURY

(Data in metric tons of mercury content unless otherwise noted)¹

Domestic Production and Use: Mercury has not been produced as a primary mineral commodity in the United States since 1992, when the McDermitt Mine, Humboldt County, NV, closed; however, mercury was produced as a byproduct from several gold-silver mines in Nevada. Byproduct mercury production data were not reported. Secondary mercury was also recovered by retorting end-of-use mercury-containing products, such as batteries, compact and traditional fluorescent lamps, dental amalgam, medical devices, and thermostats, as well as mercury contaminated soils. Secondary mercury production data were not reported. The domestic chlorine-caustic soda industry was the leading end user of mercury. Some of the mercury used at these facilities was recycled in-plant; however, approximately 100 tons of replacement mercury is purchased yearly. Some mercury-containing chlor-alkali waste, as “amalgam” (not chemically defined), was exported to Canada and landfilled. Mercury use has declined in the United States because of mercury toxicity and concerns for human health. Mercury has been released to the environment from mercury-containing car switches when the automobile is scrapped for recycling, coal-fired power plants, and from incinerated mercury-containing medical devices. Mercury is no longer used in batteries and paints manufactured in the United States. Mercury was imported, refined, and then exported for global use in chlorine-caustic soda production, dental amalgam, fluorescent lights, and small-scale gold mining. Some button-type batteries, cleansers, fireworks, folk medicines, grandfather clocks, pesticides, and skin-lightening creams and soaps may contain mercury.

Salient Statistics—United States:	2004	2005	2006	2007	2008^e
Production:					
Mine (byproduct)	NA	NA	NA	NA	NA
Secondary	NA	NA	NA	NA	NA
Imports for consumption (gross weight), metal ²	92	212	94	67	150
Exports (gross weight), metal	278	319	390	84	900
Price, average value, dollars per flask, free market ³	365.00	555.00	670.00	530.00	600.00
Net import reliance ⁴ as a percentage of apparent consumption	E	E	E	E	E

Recycling: In 2008, six companies in the United States accounted for the majority of secondary mercury reclamation and production. More than 50 smaller companies collected barometers, computers, dental amalgam, gym flooring, medical devices, thermostats, and some mercury-containing toys and shipped them on to larger companies for retorting. The reservoir of mercury-containing products for recycling is shrinking because of increased use of nonmercury materials and devices that substitute for mercury.

Import Sources (2004-07): Peru, 39%; Chile, 20%; Germany, 13%; Russia, 11%; and other, 17%.

Tariff: Item	Number	Normal Trade Relations
Mercury	2805.40.0000	12-31-08 1.7% ad val.

Depletion Allowance: 22% (Domestic), 14% (Foreign).

Government Stockpile: An inventory of 4,436 tons of mercury was held at several sites in the United States; however, the Defense Logistics Agency has indicated that consolidated storage is the preferred alternative. Sales of mercury from the National Defense Stockpile remained suspended. An additional 1,329 tons of mercury was held by the U.S. Department of Energy, Oak Ridge, TN.

Stockpile Status—9-30-08⁵

Material	Uncommitted inventory	Authorized for disposal	Disposal plan FY 2008	Disposals FY 2008
Mercury	4,436	4,436	—	—

Events, Trends, and Issues: The United States is a leading exporter of mercury. In 2008, the principal export destinations of U.S. mercury were the Netherlands, Vietnam, and India. According to trade journals, the average cost of a flask of domestic mercury was \$550 to \$650 in 2008. Global consumption for mercury was estimated to be approximately 2,000 tons per year and approximately 50% of this consumption comes from the use of mercury compounds used to make vinyl monomer in China and Eastern Europe. Mercury is also widely used for small-scale

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gold mining in many parts of the world, and the rising price of gold, to as high as \$1,000 per troy ounce in 2008, has also influenced the global demand for mercury. Diminishing supplies of mercury that can be recycled from end-of-use, mercury-containing products, and availability of mercury from China, Kyrgyzstan, and Spain, also affect the mercury price. Nonmercury technology for the production of chlorine and caustic soda and the ultimate closure of the world's mercury-cell chlor-alkali plants will put tons of mercury on the global market for recycling, sale, or storage. The U.S. Department of State, the U.S. Environmental Protection Agency (EPA), the U.S. Geological Survey (USGS), and other Government agencies participated in interagency meetings to address management of commodity-grade mercury. The EPA provided estimates of costs for permanent mercury storage. The Energy Independence and Security Act of 2007 was signed by the President and will phase out general service incandescent bulbs in favor of mercury-containing compact fluorescent bulbs in Federal buildings. The Mercury Market Minimization Act of 2008, a bill to prohibit the sale, distribution, and export of elemental mercury (S. 906), was signed by the President. All exports of the substance will be banned as of January 1, 2013. The USGS completed an inventory of mercury use in Peru, an important source of imported mercury and user of mercury for small-scale gold mining. Governmental regulations and environmental standards are likely to continue as major factors in domestic mercury recycling, supply, and demand. Byproduct mercury production is expected to continue from gold-silver mining and processing, as is secondary production of mercury from a diminishing supply of mercury-containing products. Mercury may also be recovered and recycled from compact and traditional fluorescent lamps. Domestic mercury consumption will continue to decline as nonmercury-containing products, such as digital thermometers, are substituted.

World Mine Production, Reserves, and Reserve Base:

	Mine production		Reserves ⁶	Reserve base ⁶
	2007	2008 ^e		
United States	NA	NA	—	7,000
Algeria	—	—	—	3,000
China	800	600	NA	NA
Italy	—	—	—	69,000
Kyrgyzstan	250	250	7,500	13,000
Spain	—	—	—	90,000
Other countries	120	100	38,000	61,000
World total (rounded)	1,170	950	46,000	240,000

World Resources: China, Kyrgyzstan, Russia, Slovenia, Spain, and Ukraine have most of the world's estimated 600,000 tons of mercury resources. Spain, once a leading producer of mercury from its centuries-old Almaden Mine, stopped mining in 2003, and production is from stockpiled material. In the United States, there are mercury occurrences in Alaska, Arkansas, California, Nevada, and Texas; however, mercury has not been mined as a primary metal commodity since 1992. The declining consumption of mercury, except for small-scale gold mining, indicates that these resources are sufficient for another century or more of use.

Substitutes: For aesthetic or human health concerns, natural-appearing ceramic composites substitute for the dark-gray mercury-containing dental amalgam. "Galistan," an alloy of gallium, indium, and tin, or alternatively, digital thermometers, now replaces the mercury used in thermometers. Mercury-cell technology is being replaced by newer diaphragm and membrane cell technology at chlor-alkali plants. Light-emitting diodes that contain indium substitute for mercury-containing fluorescent lamps. Lithium, nickel-cadmium, and zinc-air batteries replace mercury-zinc batteries in the United States, indium compounds substitute for mercury in alkaline batteries, and organic compounds have been substituted for mercury fungicides in latex paint.

^eEstimated. E Net exporter. NA Not available. — Zero.

¹Some international data and dealer prices are reported in flasks. One metric ton (1,000 kilograms) = 29.0082 flasks, and 1 flask = 76 pounds, or 34.5 kilograms, or 0.034 ton.

²Import totals decreased compared with those in Mineral Commodity Summaries 2008 because previously calomel, a mercury chloride and a potential source of mercury, reportedly was imported from Chile; however, a review of Chilean customs data indicated that the material was cuprous chloride and not mercury chloride.

³Platts Metals Week average mercury price quotation for the year. Actual prices may vary significantly from quoted prices.

⁴Defined as imports – exports + adjustments for Government and industry stock changes.

⁵[See Appendix B for definitions.](#)

⁶[See Appendix C for definitions.](#)