

MERCURY

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

Domestic Production and Use: Mercury has not been produced as a principal mineral commodity in the United States since 1992, when the McDermitt Mine, in Humboldt County, NV, closed. In 2011, mercury was recovered as a byproduct from processing gold-silver ore at several mines in Nevada; however, these production data were not reported. Secondary, or recycled, mercury was recovered by retorting end-of-use mercury-containing products that mainly included batteries, compact and traditional fluorescent lamps, dental amalgam, medical devices, and thermostats, as well as mercury-contaminated soils. The mercury was processed and refined for resale or exported. Secondary mercury production data were not reported. Mercury use is not carefully tracked in the United States; however, no more than 100 metric tons per year of mercury was consumed domestically. The leading domestic end user of mercury was the chlorine-caustic soda industry. Owing to mercury toxicity and concerns for the environment and human health, overall mercury use has declined in the United States. Mercury has been released to the environment from mercury-containing car switches when the automobile is scrapped for recycling, from coal-fired powerplant emissions, 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, compact and traditional fluorescent lights, dental amalgam, and neon lights; however, its primary use is for small-scale gold mining in many parts of the world. Some button-type batteries, cleansers, fireworks, folk medicines, grandfather clocks, pesticides, and some skin-lightening creams and soaps may contain mercury.

Salient Statistics—United States:	2007	2008	2009	2010	2011^e
Production:					
Mine (byproduct)	NA	NA	NA	NA	NA
Secondary	NA	NA	NA	NA	NA
Imports for consumption (gross weight), metal	67	155	206	294	160
Exports (gross weight), metal	84	732	753	459	200
Price, average value, dollars per flask, free market ²	530	600	600	1,076	1,950
Net import reliance ³ as a percentage of apparent consumption	E	E	E	E	E

Recycling: In 2011, six companies in the United States accounted for the majority of secondary mercury recycling and production. Mercury-containing automobile convenience switches, barometers, computers, dental amalgam, fluorescent lamps, medical devices, thermostats, and some mercury-containing toys were collected by as many as 50 smaller companies and then the mercury-containing materials were shipped to larger companies for retorting and reclamation of the mercury. The increased use of nonmercury substitutes has resulted in a shrinking reservoir of mercury-containing products for recycling.

Import Sources (2007–10): Peru, 50%; Chile, 37%; Germany, 7%; Canada, 4%; and other, 2%.

Tariff: Item	Number	Normal Trade Relations
Mercury	2805.40.0000	12-31-11 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, DLA Strategic Materials has indicated that consolidated storage is preferred. An additional 1,329 tons of mercury was held by the U.S. Department of Energy, Oak Ridge, TN. Sales of mercury from the National Defense Stockpile remained suspended.

Stockpile Status—9-30-11⁴

Material	Uncommitted inventory	Authorized for disposal	Disposal plan FY 2011	Disposals FY 2011
Mercury	4,436	4,436	—	—

Events, Trends, and Issues: The United States was a leading exporter of mercury in 2011, and the principal export destinations included Canada, Guyana, and Vietnam. The average price of a flask of domestic mercury was \$1,950; however, by July, prices were reported in the \$2,400-to-\$2,600 range. Mercury is used for small-scale gold mining in

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many parts of the world and the price of gold, rising to slightly more than \$1,800 per troy ounce in September, has influenced the global demand for mercury. In Colombia, the price of mercury in the small-scale gold mining areas may be as much as \$100 per kilogram; therefore, a flask may be worth as much \$3,450. Mercury prices were also affected by the European Union mercury export ban that took place in March, as well as the impending United States export ban that will take place in 2013. Diminishing supplies of mercury reclaimed from end-of-use, mercury-containing products, and the availability of mercury from China and Kyrgyzstan also affected mercury prices.

Global consumption of mercury was estimated to be 2,000 tons per year, and approximately 50% of this consumption came from the use of mercury compounds to make vinyl monomer in China and Eastern Europe. Use of nonmercury technology for chloralkali production and the ultimate closure of the world's mercury-cell chloralkali plants may put a large quantity of mercury on the global market for recycling, sale, or, owing to export bans in Europe and the United States, storage. Only 4 mercury cell chlorine-caustic soda plants were in use in the United States in 2011, compared with 5 in 2008, and 14 in 1996. The Federal Government was trying to find storage sites for the Nation's excess mercury, and seven States—Colorado, Idaho, Missouri, Nevada, South Carolina, Texas, and Washington—were being considered.

Byproduct mercury production is expected to continue from large-scale domestic and foreign gold-silver mining and processing, as is secondary production of mercury from an ever-diminishing supply of mercury-containing products, such as automobile convenience switches and thermostats. However, the volume of byproduct mercury that enters the global supply from foreign gold-silver processing may change dramatically from year to year; for example, mercury in Chile and Peru is typically stockpiled until there is sufficient material for export. Mercury may also be recycled from compact and traditional fluorescent lamps. Domestic mercury consumption will continue to decline as nonmercury-containing products, such as digital thermometers, are substituted for those containing mercury.

World Mine Production and Reserves:

	Mine production		Reserves ⁵
	2010	2011 ^e	
United States	NA	NA	—
Chile (byproduct)	176	100	NA
China	1,600	1,400	21,000
Kyrgyzstan	250	250	7,500
Mexico (reclaimed)	21	15	27,000
Peru (byproduct)	102	35	NA
Spain	NA	NA	NA
Other countries	100	130	38,000
World total (rounded)	2,250	1,930	93,000

World Resources: China, Kyrgyzstan, Mexico, Peru, Russia, Slovenia, Spain, and Ukraine have most of the world's estimated 600,000 tons of mercury resources. Mexico reclaims mercury from Spanish Colonial silver mining waste. In Peru, mercury production from the Santa Barbara Mine (Huancavelica) stopped in the 1990s; however, Peru continues to be an important source of byproduct mercury imported into the United States. Spain, once a leading producer of mercury from its centuries-old Almaden Mine, stopped mining in 2003. In the United States, there are mercury occurrences in Alaska, Arkansas, California, Nevada, and Texas; however, mercury has not been mined as a principal mineral 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 traditional mercury thermometers. At chloralkali plants around the world, mercury-cell technology is being replaced by newer diaphragm and membrane cell technology. 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 0.035 ton.

²Platts Metals Week average mercury price quotation for the year. Actual prices may vary significantly from quoted prices.

³Defined as imports – exports + adjustments for Government and industry stock changes.

⁴See Appendix B for definitions.

⁵See Appendix C for resource/reserve definitions and information concerning data sources.