MERCURY

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

Domestic Production and Use: Mercury has not been produced as a principal mineral commodity in the United States since 1992. In 2016, mercury was recovered as a byproduct from processing gold-silver ore at several mines in Nevada; however, production data were not reported. Secondary, or recycled, mercury was recovered from batteries, compact and traditional fluorescent lamps, dental amalgam, medical devices, and thermostats, as well as mercury-contaminated soils. It was estimated that less than 40 tons per year of mercury was consumed domestically. The leading domestic end users of mercury were the chlorine-caustic soda (chloralkali), electronics, and fluorescent-lighting manufacturing industries. Only two mercury cell chloralkali plants operated in the United States in 2016. Until December 31, 2012, domestic- and foreign-sourced mercury was refined and then exported for global use, primarily for small-scale gold mining in many parts of the world. Beginning January 1, 2013, export of elemental mercury from the United States was banned, with some exceptions, under the Mercury Export Ban Act of 2008.

Salient Statistics—United States:	2012	2013	2014	2015	2016[e]
Production:					
Mine (byproduct)	NA	NA	NA	NA	NA
Secondary	NA	NA	NA	NA	NA
Imports for consumption (gross weight), metal	249	38	49	26	20
Exports (gross weight), metal	28	(1)	—	(1)	—
Price, average value, dollars per flask 99.99%[2]					
Domestic, free market[3]	1,850	1,850	1,850	1,850	NA
European Union[4]	2,578	3,412	3,037	1,954	1,400
Net import reliance[5] as a percentage of apparent consumption	E	E	NA	NA	NA

Recycling: In 2016, eight facilities operated by six companies in the United States accounted for the majority of secondary mercury produced and were authorized by the U.S Department of Energy to temporarily store mercury. Mercury-containing automobile convenience switches, barometers, compact and traditional fluorescent lamps, computers, dental amalgam, medical devices, and thermostats were collected by smaller companies and shipped to the refining companies for retorting to reclaim the mercury. In addition, many collection companies recovered mercury when retorting was not required. The increased use of mercury substitutes has resulted in a shrinking reservoir of mercury-containing products for recycling. Minimizing the use of mercury in products that still require mercury has further reduced the amount of secondary mercury available for recovery.

Import Sources (2012–15): Argentina, 36%; Canada, 24%; Germany, 17%; Chile, 14%; and other, 9%.

Tariff: Item	Number	Normal Trade Relations 12–31–16
Mercury	2805.40.0000	1.7% ad val.

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

Government Stockpile: An inventory of 4,436 tons of mercury was held in storage at the Hawthorne Army Depot, in Hawthorne, NV. The Mercury Export Ban Act of 2008 required the U.S. Department of Energy to establish long-term management and storage capabilities for domestically produced elemental mercury. Sales of mercury from the stockpiles remained suspended.

Stockpile Status—9–30–16[6]

Material	Inventory	Disposal Plan FY 2016	Disposals FY 2016
Mercury	4,436	—	—

Events, Trends, and Issues: Owing to mercury toxicity and concerns for the environment and human health, overall mercury use has declined in the United States. Mercury continues to be released to the environment from numerous sources, including mercury-containing car switches when automobiles are scrapped without recovering them for recycling, coal-fired powerplant emissions, and incineration of mercury-containing medical devices. Mercury is no longer used in batteries and paints manufactured in the United States. Some button-type batteries, cleansers,

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fireworks, folk medicines, grandfather clocks, pesticides, and skin-lightening creams and soaps may still contain mercury. Mercury compounds were used as catalysts in the coal-based manufacture of vinyl chloride monomer in China. Conversion to nonmercury technology for chloralkali production and the ultimate closure of the world's mercury-cell chloralkali plants may release a large quantity of mercury to the global market for recycling, sale, or, owing to export bans in Europe and the United States, storage.

Globally, the number of operating primary mercury mines was uncertain; however, most were located in China, Kyrgyzstan, or Russia. Reported mercury production in China, which had averaged about 1,400 tons per year from 2008 through 2012, trended sharply upward beginning in 2013 to 2,800 tons in 2015. Production in the first 8 months of 2016 was reported to have increased by 40% from that of the same period in 2015.

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. The quantity of byproduct mercury entering the global supply from foreign gold-silver processing may fluctuate dramatically from year to year because mercury is frequently stockpiled in producing countries. Domestic mercury consumption will continue to decline owing to increased use of light-emitting-diode (LED) lighting and consequent reduced use of conventional fluorescent tubes and compact fluorescent bulbs, and continued substitution of nonmercury-containing products, such as digital thermometers, and in measuring, control, and dental applications.

World Mine Production and Reserves:

	Mine production		Reserves[7]
	2015	2016[e]	
United States	NA	NA	Quantitative estimates
China	2,800	4,000	of reserves are not available.
Kyrgyzstan	40	40	China, Kyrgyzstan, and Peru are
Mexico (exports)	300	300	thought to contain the largest
Peru (exports)	35	40	reserves.
Tajikistan	30	30	
Other countries	60	50	
World total (rounded)	3,270	4,500	

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. In Spain, once a leading producer of mercury, mining at its centuries-old Almaden Mine stopped 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 centuries of use.

Substitutes: Ceramic composites substitute for the dark-gray mercury-containing dental amalgam. "Galistan," an alloy of gallium, indium, and tin, replaces the mercury used in traditional mercury thermometers, and digital thermometers have replaced traditional thermometers. At chloralkali plants around the world, mercury-cell technology is being replaced by newer diaphragm and membrane cell technology. LEDs 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.

[e]Estimated. E Net exporter. NA Not available. — Zero.

[1]Less than ½ unit.

[2]Some 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.

[3]Platts Metals Week average annual mercury price quotation. Actual prices may vary significantly from quoted prices. Price discontinued December 2015.

[4]Average annual price published by Metal-Pages .

[5]Defined as imports – exports + adjustments for Government stock changes.

[6]See Appendix B for definitions.

[7]See Appendix C for resource and reserve definitions and information concerning data sources.