

SILVER

(Data in metric tons¹ of silver content unless otherwise noted)

Domestic Production and Use: In 2013, the United States produced approximately 1,090 tons of silver with an estimated value of \$840 million. Silver was produced at 3 silver mines and as a byproduct or coproduct from 39 domestic base- and precious-metal mines. Alaska continued as the country's leading silver-producing State, followed by Nevada. There were 14 U.S. refiners that indicated production of commercial-grade silver, with an estimated total output of 2,500 tons from domestic and foreign ores and concentrates, and from old and new scrap. The physical properties of silver include high ductility, electrical conductivity, malleability, and reflectivity. Silver's principal end use categories include coins and medals, electrical and electronics, jewelry and silverware, and photography. Other applications for silver include use of silver in alloys, bandages for wound care, batteries, bearings, brazing and soldering, catalytic converters in automobiles, cell phone covers to reduce the spread of bacteria, clothing to minimize odor, electroplating, inks, mirrors, solar cells, water purification, and wood treatment. Silver was used for miniature antennas in radio frequency identification devices that were used in casino chips, freeway toll transponders, gasoline speed purchase devices, passports, and on packages to keep track of inventory shipments. Mercury and silver, the main components of dental amalgam, are biocides, and their use in amalgam inhibits recurrent decay. In 2013, the estimated uses for silver were electrical and electronics, 35%; coins and medals, 25%; photography, 10%; jewelry and silverware, 6%; and other, 24%.

Salient Statistics—United States:	2009	2010	2011	2012	2013^e
Production:					
Mine	1,250	1,280	1,120	1,060	1,090
Refinery:					
Primary	796	819	790	796	800
Secondary (new and old scrap)	1,340	1,330	1,710	1,660	1,700
Imports for consumption ²	3,450	5,370	6,410	5,140	5,000
Exports ²	419	709	904	946	340
Consumption, apparent ³	6,110	7,530	7,920	5,990	6,710
Price, dollars per troy ounce ⁴	14.69	20.20	35.26	31.21	23.80
Stocks, yearend:					
Industry	150	123	150	109	110
Treasury Department ⁵	498	498	498	498	498
COMEX	3,500	3,260	3,650	4,610	5,350
Employment, mine and mill, ⁶ number	764	814	1089	1,249	1,390
Net import reliance ⁷ as a percentage of apparent consumption	58	65	64	55	58

Recycling: In 2013, approximately 1,700 tons of silver was recovered from new and old scrap.

Import Sources (2009–12):² Mexico, 51%; Canada, 25%; Poland, 6%; Peru, 3%; and other, 15%.

Tariff: No duties are imposed on imports of unrefined silver or refined bullion.

Depletion Allowance: 15% (Domestic), 14% (Foreign).

Government Stockpile: None.

Events, Trends, and Issues: Through November 2013, silver prices averaged \$24.10 per troy ounce, 23% lower than the average of the first 11 months of 2012. The overall decline in silver prices corresponded to a drop in industrial consumption owing to a depressed global economic environment. Investment demand for silver continued to increase as investors sought safe-haven investments. Holdings in 13 silver exchange traded funds (ETFs), were about 24,000 tons at the end of October, up by 4,800 tons from yearend 2012.

Global demand for silver in photography continued to decline, and in the United States, demand fell to about 520 tons, compared with a high of about 2,000 tons in 2000. Although silver was still used in x-ray films, imaging facilities have been transitioning to digital imaging systems. Demand for silver in jewelry, electronic applications, and other industrial applications declined, while the use of silver in brazing alloys, coins, and solders increased. Silver demand for silverware remained unchanged. The use of trace amounts of silver in bandages for wound care and minor skin infections was also increasing.

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World silver mine production increased to a new record high of 26,600 tons, principally as a result of increased production from mines in China, Mexico, and the Russian Federation, including increased recoveries from mines in Russia and Kazakhstan, and Mexico's Peñasquito Mine. Overall, domestic silver production rose slightly, with the reopening in the first quarter of the Lucky Friday Mine (silver-lead zinc) in Idaho's Coeur d'Alene mining district. The Lucky Friday Mine was ordered closed at yearend 2011 by the Mine Safety and Health Administration after an accident and rock burst led to a buildup of material in the Silver Shaft, the primary access to the mine. The Drumlummon Mine (silver-gold) in Montana closed in the second quarter, owing to a drop in precious metal prices and was placed in care-and-maintenance status.

World Mine Production and Reserves: Reserves for Peru were revised based on new information from Government and industry sources.

	Mine production		Reserves ⁸
	2012	2013 ^e	
United States	1,060	1,090	25,000
Australia	1,730	1,700	88,000
Bolivia	1,210	1,200	22,000
Canada	663	720	7,000
Chile	1,190	1,200	77,000
China	3,900	4,000	43,000
Mexico	5,360	5,400	37,000
Peru	3,480	3,500	87,000
Poland	1,150	1,150	85,000
Russia	1,500	1,700	NA
Other countries	4,230	4,300	50,000
World total (rounded)	25,500	26,000	520,000

World Resources: Although silver was a principal product at several mines, silver was primarily obtained as a byproduct from lead-zinc mines, copper mines, and gold mines, in descending order of production. The polymetallic ore deposits from which silver was recovered account for more than two-thirds of U.S. and world resources of silver. Most recent silver discoveries have been associated with gold occurrences; however, copper and lead-zinc occurrences that contain byproduct silver will continue to account for a significant share of future reserves and resources.

Substitutes: Digital imaging, film with reduced silver content, silverless black-and-white film, and xerography substitute for silver that has traditionally been used in black-and-white as well as color printing applications. Surgical pins and plates may be made with tantalum and titanium in place of silver. Stainless steel may be substituted for silver flatware. Nonsilver batteries may replace silver batteries in some applications. Aluminum and rhodium may be used to replace silver that was traditionally used in mirrors and other reflecting surfaces. Silver may be used to replace more costly metals in catalytic converters for off-road vehicles.

^eEstimated. NA Not available.

¹One metric ton (1,000 kilograms) = 32,150.7 troy ounces.

²Ores and concentrates, refined bullion, and doré; excludes coinage, and waste and scrap material.

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

⁴Handy & Harman quotations.

⁵Balance in U.S. Mint only, includes deep storage and working stocks.

⁶Source: U.S. Department of Labor, Mine Safety and Health Administration.

⁷Defined as imports – exports + adjustments for Government and industry stock changes.

⁸[See Appendix C for resource/reserve definitions and information concerning data sources.](#)