

SILVER

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

Domestic Production and Use: In 2006, approximately 1,100 tons of silver with an estimated value of nearly \$400 million were produced in the United States. Alaska continued as the country's leading silver-producing State, followed by Nevada; however, company production data are proprietary and were withheld. Domestic silver was produced as a byproduct from 36 base- and precious-metal mines. There were 21 principal refiners of commercial-grade silver, with an estimated total output of 3,000 tons from domestic and foreign ores and concentrates, and from old and new scrap. The physical properties of silver include ductility, electrical conductivity, malleability, and reflectivity. Silver's traditional use categories include coins and medals, industrial applications, jewelry and silverware, and photography. However, in April 2006, an important new category, the silver exchange traded fund (ETF), which was modeled after the gold ETF that was started in 2003, was established. Under the ETF, physical silver is held by an investment agency. At the same time, the demand for silver in industrial applications is increasing and includes use of silver in bandages for wound care, batteries, brazing and soldering, in cell phone covers to reduce the spread of bacteria, in clothing to minimize odor, in catalytic converters in automobiles, electronics and circuit boards, electroplating, hardening bearings, mirrors, solar cells, wood treatment to resist mold, and water purification. Silver and mercury, the main components of dental amalgam, are biocides and their use in amalgam inhibits recurrent decay. Silver was widely used for miniature antennas in Radio Frequency Identification Devices (RFIDs) that were used in passports and on packages to keep track of inventory shipments.

Salient Statistics—United States:	2002	2003	2004	2005	2006^e
Production:					
Mine	1,350	1,240	1,250	1,230	1,100
Refinery:					
Primary	2,580	2,580	1,140	2,530	1,000
Secondary	1,030	1,010	1,920	980	1,050
Imports for consumption ²	4,300	4,510	4,100	3,880	4,000
Exports ²	680	181	422	166	500
Consumption, apparent ^e	5,980	6,440	6,700	5,750	6,110
Price, dollars per troy ounce ³	4.62	4.91	6.69	7.34	11.20
Stocks, yearend:					
Treasury Department ⁴	220	220	220	220	220
COMEX, CBT ⁵	3,290	3,430	3,580	3,750	3,290
Exchange Traded Fund	—	—	—	—	3,330
Employment, mine and mill, ⁶ number	910	840	900	900	800
Net import reliance ⁷ as a percentage of apparent consumption ^e	60	65	53	61	65

Recycling: Approximately 1,000 tons of silver was recovered from old and new scrap in 2006. This includes 60 to 90 tons of silver that are reclaimed and recycled annually from photographic wastewater.

Import Sources (2002-05):² Mexico, 51%; Canada, 34%; Peru, 12%; Chile, 2%; and other, 1%.

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

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

Government Stockpile: All of the remaining silver in the National Defense Stockpile was transferred to the U.S. Mint by the Defense Logistics Agency for use in the manufacture of numismatic and bullion coins by yearend 2004. This transfer marked the end of silver requirements for the National Defense Stockpile.

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Events, Trends, and Issues: In 2006, silver prices continued to rise and averaged \$11.20 per troy ounce, surpassing 2005's high of \$7.34, 2004's 17-year high of \$6.69, and 1987's high of \$6.99. Prices rose to more than \$14.00 per troy ounce in April and May in response to investment interest in the silver ETF, which was established in late April. Demand also rose for the use of silver in fabrication and industrial applications. Photographic use of silver was relatively stable, and losses to digital photography because of weak film sales were offset by the use of high-purity silver for color paper. Silver is still used in X-ray films, and 99% of the silver in photographic wastewater may be recovered. The use of trace amounts of silver in bandages for wound care and minor skin infections is increasing. Sports and everyday clothing may be embedded with silver, which will help regulate body heat and control odor. The deficit in world silver production as compared with world silver demand was about 700 t in 2006.

World Mine Production, Reserves, and Reserve Base:

	Mine production		Reserves ⁸	Reserve base ⁸
	2005	2006 ^e		
United States	1,230	1,100	25,000	80,000
Australia	2,050	2,150	31,000	37,000
Canada	1,120	1,310	16,000	35,000
Chile	1,400	1,400	NA	NA
China	2,500	2,550	26,000	120,000
Mexico	2,890	3,000	37,000	40,000
Peru	3,190	3,200	36,000	37,000
Poland	1,300	1,300	51,000	140,000
South Africa	89	90	NA	NA
Other countries	3,500	3,400	50,000	80,000
World total (rounded)	19,300	19,500	270,000	570,000

World Resources: Silver was obtained as a byproduct from processing copper, gold, and lead-zinc ores. More than two-thirds of U.S. and world resources of silver are contained in such polymetallic deposits. The remaining silver resources are in veins in which gold is the primary commodity, and most recent silver discoveries have been associated with gold occurrences. However, base-metal discoveries that contain byproduct silver will account for a significant share of future reserves and resources.

Substitutes: Aluminum and rhodium may be used to replace silver used in mirrors and other reflecting surfaces. Tantalum and titanium may be used for surgical plates and pins in place of silver. Stainless steel may be substituted for silver flatware, and germanium added to silver will help keep tableware from tarnishing. Nonsilver batteries may replace silver batteries in some applications. Alternatives to silver use in traditional photographic applications include digital imaging, film with reduced silver content, silverless black and white film, and xerography.

^eEstimated. NA Not available. — Zero.

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

²Refined bullion, doré, and other unwrought silver; excludes coinage, waste, and scrap material.

³Handy & Harman quotations.

⁴Balance in U.S. Mint only.

⁵COMEX: Commodity Exchange Inc., New York. CBT: Chicago Board of Trade.

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

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

⁸Includes silver recoverable from base-metal ores. [See Appendix C for definitions.](#)