

## SILVER

(Data in metric tons<sup>1</sup> of silver content unless otherwise noted)

**Domestic Production and Use:** In 2005, mines in the United States produced approximately 1,300 tons of silver with an estimated value of \$295 million. Alaska was the country's leading silver-producing State; however, production data were withheld to protect company proprietary data. Approximately 99% of domestic silver was produced as a byproduct from base-metal ores at 12 mines and from precious-metal ores at 13 mines. Placer mines accounted for 1% or less of total silver production. 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. Silver's properties include relatively high ductility, electrical conductivity, malleability, and reflectivity. Silver is mainly used in industrial applications, photography, jewelry and silverware, and coins. Silver is also used for batteries, bearings, brazing and soldering, catalysts, dental amalgam, electronics, electroplating, medical and wound care, mirrors, solar energy, and water purification.

<b>Salient Statistics—United States:</b>	<b>2001</b>	<b>2002</b>	<b>2003</b>	<b>2004</b>	<b>2005<sup>e</sup></b>
Production:					
Mine	1,740	1,350	1,240	1,250	1,300
Refinery:					
Primary	2,640	2,580	2,580	1,140	1,080
Secondary	1,060	1,030	1,010	1,920	2,000
Imports for consumption <sup>2</sup>	3,340	4,300	4,510	4,100	4,530
Exports <sup>2</sup>	783	680	181	422	390
Consumption, apparent <sup>e</sup>	5,460	5,980	6,440	6,700	7,720
Price, dollars per troy ounce <sup>3</sup>	4.39	4.62	4.91	6.69	7.15
Stocks, yearend:					
Treasury Department <sup>4</sup>	220	220	220	220	220
COMEX, CBT <sup>5</sup>	3,250	3,290	3,430	3,580	3,300
National Defense Stockpile	21	—	—	—	—
Employment, mine and mill, <sup>6</sup> number	1,120	910	840	900	860
Net import reliance <sup>7</sup> as a percentage of apparent consumption <sup>e</sup>	49	60	65	53	57

**Recycling:** Approximately 2,000 tons of silver was recovered from old and new scrap in 2005.

**Import Sources (2001-04):<sup>2</sup>** Mexico, 48%; Canada, 37%; Peru, 9%; Chile, 2%; and other, 4%.

**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 in 2004. This transfer marked the end of silver requirements for the National Defense Stockpile.

## SILVER

**Events, Trends, and Issues:** In 2005, silver prices continued to rise and averaged \$7.15 per troy ounce, which surpassed 2004's 17-year high of \$6.69 and 1987's high of \$6.99. Prices rose to above \$8.00 per troy ounce in November. The 2005 average price of \$7.15 per troy ounce was in response to investment and fabrication demand, especially in the jewelry and silverware market. Silver use in photography fell again in 2005 mainly owing to the growth of digital photography in the amateur market. Competition from the growing digital camera market combined with weak sales of film caused the overall demand to be lower. Declines were also seen in silver-containing color negative paper, consumer film, and health and commercial photography. The antibacterial use of silver in trace amounts in wound care is increasing. Silver ions embedded in clothing help regulate body heat and odor. Silver is also being used in manufactured products such as washing machines that release silver to sterilize clothing. The deficit between world silver fabrication demand and world silver supply (mine production and scrap) remained large in 2005 at about 1,700 tons.

### **World Mine Production, Reserves, and Reserve Base:**

	Mine production		Reserves <sup>8</sup>	Reserve base <sup>8</sup>
	2004	2005 <sup>e</sup>		
United States	1,250	1,300	25,000	80,000
Australia	2,240	2,250	31,000	37,000
Canada	1,340	1,330	16,000	35,000
Chile	1,360	1,400	NA	NA
China	2,450	2,800	26,000	120,000
Mexico	2,700	2,700	37,000	40,000
Peru	3,060	3,060	36,000	37,000
Poland	1,250	1,300	51,000	140,000
South Africa	72	80	NA	NA
Other countries	<u>3,960</u>	<u>4,100</u>	<u>50,000</u>	<u>80,000</u>
World total (rounded)	19,700	20,300	270,000	570,000

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

**Substitutes:** Silver used in mirrors and other reflecting surfaces may be replaced by aluminum and rhodium. Tantalum may be used in place of silver for surgical plates and pins. Stainless steel may be substituted for silver in tableware. Nonsilver batteries being developed may replace silver batteries in some applications. Digital imaging, film with reduced silver content, silverless black and white film, and xerography are alternatives to some uses of silver in photography.

<sup>e</sup>Estimated. NA Not available. — Zero.

<sup>1</sup>One metric ton (1,000 kilograms) = 32,150.7 troy ounces.

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

<sup>3</sup>Handy & Harman quotations.

<sup>4</sup>Balance in U.S. Mint only.

<sup>5</sup>COMEX: Commodity Exchange Inc., New York. CBT: Chicago Board of Trade.

<sup>6</sup>Source: U.S. Department of Labor, Mine Safety and Health Administration.

<sup>7</sup>Defined as imports – exports + adjustments for Government and industry stock changes.

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