

## SILVER

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

**Domestic Production and Use:** In 2003, U.S. mine production of silver was about 1,230 tons, with an estimated value of \$184 million. Alaska replaced Nevada as the leading producer. Precious-metal ores accounted for approximately one-half of domestic silver production; the remainder was recovered as a byproduct from the processing of copper, lead, and zinc ores. There were 21 principal refiners of commercial-grade silver, with an estimated total output of 3,800 tons. About 30 fabricators accounted for more than 90% of the silver consumed in arts and industry. The remainder was consumed mostly by small companies and artisans. Aesthetic uses of silver for decorative articles, jewelry, tableware, and coinage were overshadowed by industrial and technical uses. Industrial and technical uses include photographic materials, electrical and electronic products, catalysts, brazing alloys, dental amalgam, and bearings.

<b>Salient Statistics—United States:</b>	<b>1999</b>	<b>2000</b>	<b>2001</b>	<b>2002</b>	<b>2003<sup>e</sup></b>
Production:					
Mine	1,950	1,860	1,740	1,420	1,300
Refinery:					
Primary	2,000	2,780	2,640	2,580	2,700
Secondary	1,500	1,680	1,060	1,030	1,100
Imports for consumption <sup>2</sup>	2,660	3,810	3,310	4,600	3,300
Exports <sup>2</sup>	481	279	963	624	320
Consumption, apparent <sup>e</sup>	5,500	6,300	5,800	7,700	5,430
Price, dollars per troy ounce <sup>3</sup>	5.25	5.00	4.39	4.62	4.66
Stocks, yearend:					
Treasury Department <sup>4</sup>	617	220	220	220	220
COMEX, CBT <sup>5</sup>	2,360	2,920	3,340	3,290	3,260
National Defense Stockpile	778	458	200	—	—
Employment, mine and mill, <sup>6</sup> number	1,500	1,500	1,100	1,000	980
Net import reliance <sup>7</sup> as a percentage of apparent consumption <sup>e</sup>	39	43	44	68	56

**Recycling:** About 1,100 tons of silver was recovered from old and new scrap in 2003.

**Import Sources<sup>2</sup> (1999-2002):** Mexico, 45%; Canada, 42%; Peru, 5%; United Kingdom, 4%; and other, 4%.

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

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

**Government Stockpile:** The Defense Logistics Agency (DLA) has transferred all of the remaining silver in the National Defense Stockpile to the U.S. Mint for use in the manufacture of numismatic and bullion coins. Under an agreement with the U.S. Department of the Treasury, the metal was carried as DLA stocks until the metal was consumed by the Mint. The transfer marked the end of silver requirements for the National Defense Stockpile.

### Stockpile Status—9-30-03<sup>8</sup>

<b>Material</b>	<b>Uncommitted inventory</b>	<b>Committed inventory</b>	<b>Authorized for disposal</b>	<b>Disposal plan FY 2003</b>	<b>Disposals FY 2003</b>
Silver	—	—	—	21	21

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**Events, Trends, and Issues:** Silver use in photography fell for the fourth successive year. The decline exceeded that of the two previous years combined by more than 4%. In 2003, estimated sales of digital cameras could increase 10% to reach 26 million units, compared with a modest fall in sales of conventional cameras. The switch to digital cameras by the consumer and the professional sectors is expected to gradually reduce the share of cameras using film. As new technology is introduced and the costs of digital cameras become more competitive with conventional cameras, this trend can be expected to accelerate.

The deficit between world silver fabrication demand and world silver supply (mine production and scrap) remained very large in 2003 at about 2,000 tons. Industrial demand for silver increased while world silver mine production declined and is likely to decline further. Overall world silver demand fell by about 4%, primarily due to lower demand in India.

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

	Mine production		Reserves <sup>9</sup>	Reserve base <sup>9</sup>
	2002	2003 <sup>e</sup>		
United States	1,420	1,300	25,000	80,000
Australia	2,077	2,100	31,000	37,000
Canada	1,344	1,270	16,000	35,000
Chile	1,350	1,300	NA	NA
China	2,500	2,300	26,000	120,000
Mexico	2,748	2,800	37,000	40,000
Peru	2,687	2,750	36,000	37,000
Poland	1,200	1,200	51,000	140,000
Other countries	4,600	4,000	50,000	80,000
World total (rounded)	20,000	19,000	270,000	570,000

**World Resources:** More than two-thirds of world silver resources is associated with copper, lead, and zinc deposits, often at great depths. The remainder is in vein deposits in which gold is the most valuable metallic component. Although most recent discoveries have been primarily gold and silver deposits, significant future reserves and resources are expected from major base-metal discoveries that contain silver. While the price of silver and improved technology may appear to increase the reserves and reserve base, the extraction of silver from these resources will be driven by demand for the base metals.

**Substitutes:** Aluminum and rhodium can be substituted for silver in mirrors and other reflecting surfaces. Tantalum can be used in place of silver for surgical plates, pins, and sutures. Stainless steel is an alternate material used widely in the manufacture of table flatware. Nonsilver batteries being developed may replace silver batteries in some applications. Silverless black and white film, xerography, and film with reduced silver content 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, plus silver content of ores, concentrates, precipitates, and doré; 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: Mine Safety and Health Administration.

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

<sup>8</sup>See Appendix B for definitions.

<sup>9</sup>Includes silver recoverable from base-metal ores. See Appendix C for definitions.