

## SILVER

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

**Domestic Production and Use:** In 2000, U.S. mine production of silver was about 2,100 tons with an estimated value of \$338 million. Nevada was the largest producer, with more than 590 tons. Precious metal ores accounted for approximately one-half of domestic silver production; the other one-half was recovered as a byproduct from processing of copper, lead, and zinc ores. There were 22 principal refiners of commercial-grade silver with an estimated output of approximately 4,000 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 products, catalysts, brazing alloys, dental amalgam, and bearings.

<b>Salient Statistics—United States:</b>	<b>1996</b>	<b>1997</b>	<b>1998</b>	<b>1999</b>	<b>2000<sup>e</sup></b>
Production: Mine	1,570	2,180	2,060	1,950	2,060
Refinery: Primary	NA	2,200	2,300	2,000	2,200
Secondary	NA	1,360	1,700	1,500	1,600
Imports for consumption <sup>2</sup>	3,010	2,540	3,330	2,660	4,360
Exports <sup>2</sup>	2,950	3,080	2,250	481	346
Consumption, apparent <sup>e</sup>	NA	6,000	6,200	6,100	7,700
Price, dollars per troy ounce <sup>3</sup>	5.19	4.89	5.54	5.25	5.25
Stocks, yearend: Treasury Department <sup>4</sup>	402	484	582	617	600
COMEX, CBT <sup>5</sup>	4,550	3,430	2,360	2,360	2,400
National Defense Stockpile	1,450	1,220	1,030	778	200
Employment, mine and mill, <sup>6</sup> number	1,400	1,550	1,550	1,600	1,500
Net import reliance <sup>7</sup> as a percent of apparent consumption <sup>e</sup>	NA	E	43	39	52

**Recycling:** About 1,600 tons of silver was recovered from old and new scrap in 2000.

**Import Sources<sup>2</sup> (1996-99):** Canada, 36%; Mexico, 31%; Peru, 8%; United Kingdom, 5%; and other, 20%.

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

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

**Government Stockpile:** The Government continued to dispose of the silver held in the National Defense Stockpile, using it primarily for the production of commemorative coins and the Eagle silver bullion coins. During the past 18 years, from 1982 through September 30, 2000, the Government has reduced the quantity of silver held in the Stockpile from 4,300 tons to about 496 tons.

### Stockpile Status—9-30-00<sup>8</sup>

Material	Uncommitted inventory	Committed inventory	Authorized for disposal	Disposal plan FY 2000	Disposals FY 2000
Silver	496	—	496	311	319

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**Events, Trends, and Issues:** Photographic applications account for about 28% of total silver demand, and digital imaging is considered to be a potential threat to this sector of the market. In contrast to the use of silver halide film in conventional photography, digital technology converts images directly into electronic form, thereby avoiding the need for silver. Silver halide pictures may also be scanned into electronic form, which necessitates the use of silver in taking and printing the picture but eliminates the need for silver halide technology in further processing.

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

	Mine production		Reserves <sup>9</sup>	Reserve base <sup>9</sup>
	1999	2000 <sup>e</sup>		
United States	1,950	2,060	33,000	72,000
Australia	1,720	1,850	30,000	36,000
Canada	1,250	1,300	37,000	47,000
Mexico	2,340	2,500	37,000	40,000
Peru	2,220	2,000	25,000	37,000
Other countries	<u>8,230</u>	<u>8,190</u>	<u>120,000</u>	<u>190,000</u>
World total (may be rounded)	17,700	17,900	280,000	420,000

**World Resources:** More than two-thirds of world silver resources are 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 byproduct silver. Although 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 primary 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. E Net exporter. NA Not available.

<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.