

## SILVER

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

**Domestic Production and Use:** In 2024, U.S. mines produced approximately 1,100 tons of silver with an estimated value of \$960 million. Silver was produced at 4 silver mines and as a byproduct or coproduct from 31 domestic base- and precious-metal operations. Silver was produced in 12 States, and Alaska continued as the country's leading silver-producing State, followed by Idaho. There were 24 U.S. refiners that reported production of commercial-grade silver with an estimated total output of 2,400 tons from domestic and foreign ores and concentrates and from new and old scrap. The physical properties of silver include high ductility, electrical conductivity, malleability, and reflectivity. In 2024, the estimated domestic uses for silver were physical investment (bars), 30%; electrical and electronics, 29%; coins and medals, 12%; photovoltaics (PV), 12%; jewelry and silverware, 6%; brazing and solder, 4%; and other industrial uses and photography, 7%. Other applications for silver include use in antimicrobial bandages, clothing, pharmaceuticals, and plastics; batteries; bearings; brazing and soldering; catalytic converters in automobiles; electroplating; inks; mirrors; photography; photovoltaic solar cells; water purification; wood treatment; and processing of spent ethylene oxide catalysts. Mercury and silver, the main components of dental amalgam, are biocides, and their use in amalgam inhibits recurrent decay.

<b>Salient Statistics—United States:</b>	<b>2020</b>	<b>2021</b>	<b>2022</b>	<b>2023</b>	<b>2024<sup>e</sup></b>
Production:					
Mine	1,080	1,020	1,010	1,020	1,100
Refinery:					
Primary	1,360	1,920	1,850	1,140	1,200
Secondary (new and old scrap)	582	908	1,090	1,150	1,200
Imports for consumption <sup>2</sup>	6,730	6,160	4,490	4,950	4,200
Exports <sup>2</sup>	141	137	276	73	140
Consumption, apparent <sup>3</sup>	8,250	7,950	6,320	7,070	6,400
Price, bullion, average, dollars per troy ounce <sup>4</sup>	20.58	25.23	21.88	23.54	27.70
Stocks, yearend:					
Industry	55	56	55	27	35
Treasury <sup>5</sup>	498	498	498	498	498
New York Commodities Exchange—COMEX	12,334	11,064	9,299	8,643	9,520
Employment, mine and mill, number <sup>6</sup>	1,175	1,440	1,396	1,455	1,400
Net import reliance <sup>7</sup> as a percentage of apparent consumption	80	76	67	69	64

**Recycling:** In 2024, approximately 1,200 tons of silver was recovered from new and old scrap, accounting for about 19% of apparent consumption.

**Import Sources (2020–23):**<sup>2</sup> Mexico, 44%; Canada, 17%; Republic of Korea, 5%; Poland, 5%; and other, 29%.

<b>Tariff:</b>	<b>Item</b>	<b>Number</b>	<b>Normal Trade Relations 12–31–24</b>
	Silver ores and concentrates	2616.10.0040	0.8 ¢/kg on lead content.
	Bullion	7106.91.1010	Free.
	Dore	7106.91.1020	Free.

**Depletion Allowance:** 15% (domestic), 14% (foreign).

**Government Stockpile:** The U.S. Department of the Treasury maintains stocks of silver (see salient statistics above).

**Events, Trends, and Issues:** The estimated average silver price in 2024 was \$27.70 per troy ounce, 18% higher than the average price in 2023. The price began the year at \$24.00 per troy ounce and decreased to the low of \$22.00 per troy ounce on January 22. During the first 10 months of 2024, the price reached a high of \$34.60 per troy ounce on October 22.

In 2024, global consumption of silver was an estimated 37,000 tons, a slight increase from that in 2023. Coin and bar consumption decreased by 13% in 2024, but consumption of silver for industrial uses was estimated to have increased by 9% compared with that in 2023 owing to growth in the global economy, which was expected to increase demand for consumer electronics, and rising electric vehicle output. Consumption of silver in jewelry and silverware was estimated to have increased by 4% and 7%, respectively. Global consumption of silver exceeded supply and was cited as a reason for price increases in 2024.<sup>8</sup>

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World silver mine production decreased in 2024 to an estimated 25,000 tons compared with 25,500 tons in 2023. Domestic silver mine production was estimated to have increased by 6% in 2024. The Rochester Mine in Nevada was ramping up an expansion project and the Lucky Friday Mine in Idaho resumed production in January 2024 after a fire in August 2023.

**World Mine Production and Reserves:** Reserves for China, Peru, and Poland were revised based on Government reports.

	Mine production		Reserves <sup>9</sup>
	2023	2024 <sup>e</sup>	
United States	1,020	1,100	23,000
Argentina	808	800	6,500
Australia	1,030	1,000	<sup>10</sup> 94,000
Bolivia	1,350	1,300	22,000
Canada	306	300	4,900
Chile	1,260	1,200	26,000
China	3,400	3,300	70,000
India	813	800	8,000
Kazakhstan	985	1,000	NA
Mexico	6,290	6,300	37,000
Peru	3,200	3,100	140,000
Poland	1,320	1,300	61,000
Russia	1,240	1,200	92,000
Sweden	404	400	NA
Other countries	<u>2,050</u>	<u>2,100</u>	<u>57,000</u>
World total (rounded)	25,500	25,000	640,000

**World Resources:**<sup>9</sup> Although silver was a principal product at several mines, silver was primarily obtained as a byproduct from lead-zinc, copper, and gold mines, in descending order of silver 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 reserves and resources in the future.

**Substitutes:** Digital imaging, film with reduced silver content, silverless black-and-white film, and xerography substitute for traditional photographic applications for silver. Surgical pins and plates may be made with stainless steel, 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.

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

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

<sup>2</sup>Silver content of base metal ores and concentrates, ash and residues, refined bullion, and dore; excludes coinage and waste and scrap material.

<sup>3</sup>Defined as mine production + secondary production + imports – exports ± adjustments for Government and industry stock changes.

<sup>4</sup>Engelhard's industrial bullion quotations. Source: S&P Global Platts Metals Week.

<sup>5</sup>Source: U.S. Mint. Balance in U.S. Mint only; includes deep storage and working stocks.

<sup>6</sup>Source: U.S. Department of Labor, Mine Safety and Health Administration (MSHA). Only includes mines where silver is the primary product.

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

<sup>8</sup>Source: Metals Focus, 2024, World silver survey 2024: Silver Institute, prepared by Metals Focus, 88 p. (Accessed October 10, 2024, at <https://www.silverinstitute.org/wp-content/uploads/2024/04/World-Silver-Survey-2024.pdf>.)

<sup>9</sup>See Appendix C for resource and reserve definitions and information concerning data sources.

<sup>10</sup>For Australia, Joint Ore Reserves Committee-compliant or equivalent reserves were 27,000 tons.