

SILVER

(Data in metric tons,¹ silver content, unless otherwise specified)

Domestic Production and Use: In 2023, U.S. mines produced approximately 1,000 tons of silver with an estimated value of \$760 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 Nevada. There were 24 U.S. refiners that reported production of commercial-grade silver with an estimated total output of 3,000 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 2023, the estimated domestic uses for silver were physical investment (bars), 34%; electrical and electronics, 27%; coins and medals, 13%; photovoltaics (PV), 10%; jewelry and silverware, 6%; brazing and solder, 3%; 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.

<u>Salient Statistics—United States:</u>	<u>2019</u>	<u>2020</u>	<u>2021</u>	<u>2022</u>	<u>2023^e</u>
Production:					
Mine	981	1,080	1,020	1,010	1,000
Refinery:					
Primary	1,360	1,360	1,920	1,850	1,900
Secondary (new and old scrap)	627	582	908	1,090	1,100
Imports for consumption ²	4,760	6,730	6,160	4,490	4,700
Exports ²	220	141	137	275	80
Consumption, apparent ³	6,150	8,250	7,950	6,320	6,700
Price, bullion, average, dollars per troy ounce ⁴	16.24	20.58	25.23	21.88	23.40
Stocks, yearend:					
Industry	52	55	56	55	58
Treasury ⁵	498	498	498	498	498
New York Commodities Exchange—COMEX	9,865	12,334	11,064	9,300	8,400
Employment, mine and mill, number ⁶	990	1,180	1,440	1,400	1,500
Net import reliance ⁷ as a percentage of apparent consumption	74	80	76	67	69

Recycling: In 2023, approximately 1,100 tons of silver was recovered from new and old scrap, accounting for about 16% of apparent consumption.

Import Sources (2019–22):² Mexico, 44%; Canada, 18%; Poland, 5%; Switzerland, 4%; and other, 29%.

<u>Tariff:</u>	<u>Item</u>	<u>Number</u>	<u>Normal Trade Relations</u>
			<u>12–31–23</u>
	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 2023 was \$23.40 per troy ounce, 7% higher than the average price in 2022. The price began the year at \$24.70 per troy ounce and decreased to the low of \$20.15 per troy ounce in March, it then increased to a high of \$26.00 per troy ounce in May. It fluctuated between \$21.00 per troy ounce and \$26.00 from May to November.

In 2023, global consumption of silver was an estimated 36,000 tons, a 6% decrease from that in 2022 but still higher than consumption before the coronavirus disease 2019 (COVID-19) pandemic. Coin and bar consumption decreased by 7% in 2023 owing to most key markets declining after a strong 2022. In 2023, consumption of silver for industrial uses was estimated to have increased by 4% compared with that in 2022 owing to the installation of fifth-generation (5G) telecommunications infrastructure and power grids, gross domestic product (GDP) growth, increased production of PV, growth for consumer electronics and continued rising vehicle output. Consumption of silver in jewelry and silverware was estimated to have decreased by 15% and 24%, respectively. The decline was due to demand reverting to pre-pandemic levels for both.⁸

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World silver mine production increased slightly in 2023 to an estimated 26,000 tons, principally as a result of increased production from mines in Mexico and Chile as new silver mines were starting or ramping up. Domestic silver mine production was estimated to have remained essentially unchanged in 2023. In August, a fire took place at an underground silver-lead-zinc mine in Idaho; no personnel were in the mine at the time of the fire. Production was suspended for the remainder of 2023 while work was carried out to bypass the damaged area.

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

	Mine production		Reserves ⁹
	2022	2023 ^e	
United States	1,010	1,000	23,000
Argentina	913	910	6,500
Australia	1,167	1,200	¹⁰ 94,000
Bolivia	1,214	1,200	22,000
Chile	1,274	1,400	26,000
China	3,480	3,400	72,000
India	694	690	8,000
Kazakhstan	1,053	990	NA
Mexico	6,195	6,400	37,000
Peru	3,079	3,100	110,000
Poland	1,316	1,300	*63,000
Russia	1,280	1,200	92,000
Other countries	2,940	3,000	57,000
World total (rounded)	25,600	26,000	*610,000

World Resources:⁹ 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.

^eEstimated. NA Not available.

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

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

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

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

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

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

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

⁸Source: Metals Focus, 2023, World silver survey 2023: Silver Institute, prepared by Metals Focus, 84 p. (Accessed July 1, 2023, at <https://www.silverinstitute.org/wp-content/uploads/2023/04/World-Silver-Survey-2023.pdf>.)

⁹See Appendix C for resource and reserve definitions and information concerning data sources.

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

*Correction posted on March 5, 2024.