

SILVER

(Data in metric tons¹ of silver content unless otherwise noted)

Domestic Production and Use: In 2019, U.S. mines produced approximately 980 tons of silver with an estimated value of \$510 million. Silver was produced at 4 silver mines and as a byproduct or coproduct from 33 domestic base- and precious-metal operations. 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 2,500 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 2019, the estimated domestic uses for silver were electrical and electronics, 30%; jewelry and silverware, 26%; coins and medals, 12%; photography, 3%; and other, 29%. 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; photovoltaic solar cells; water purification; and wood treatment. Mercury and silver, the main components of dental amalgam, are biocides, and their use in amalgam inhibits recurrent decay.

Salient Statistics—United States:	2015	2016	2017	2018	2019^e
Production:					
Mine	1,090	1,150	1,030	934	980
Refinery:					
Primary	1,530	1,530	1,420	1,420	1,400
Secondary (new and old scrap)	1,100	1,010	1,030	1,050	1,100
Imports for consumption ²	5,930	6,160	5,040	4,840	4,700
Exports ²	818	289	157	602	300
Consumption, apparent ³	6,590	8,040	7,320	6,090	6,500
Price, average, dollars per troy ounce ⁴	15.72	17.20	17.07	15.75	16.20
Stocks, yearend:					
Industry	869	866	490	632	630
Treasury ⁵	498	498	498	498	498
New York Commodities Exchange—COMEX	5,000	5,710	7,570	9,140	9,800
Employment, mine and mill, number ⁶	1,210	1,190	1,010	961	970
Net import reliance ⁷ as a percentage of apparent consumption	67	73	72	67	68

Recycling: In 2019, approximately 1,100 tons of silver was recovered from new and old scrap, about 17% of apparent consumption.

Import Sources (2015–18):² Mexico, 48%; Canada, 29%; Peru, 5%; Poland, 4%; and other, 14%.

Tariff: Item	Number	Normal Trade Relations 12–31–19
Silver ores and concentrates, silver content	2616.10.0040	0.8 ¢/kg on lead content.
Bullion, silver content	7106.91.1010	Free.
Dore, silver content	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 2019 was \$16.20 per troy ounce, 3% higher than the average price in 2018. The price began the year at \$15.46 per troy ounce, then decreased to a low of \$14.37 per troy ounce on May 28. The price increased to a high of \$19.40 per troy ounce on September 4 before trending downward through November.

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In 2019, global consumption of silver was estimated to have increased slightly from that of 2018. Coin and bar consumption increased for the third year in a row. Consumption for jewelry and silverware was also estimated to have increased in 2019. Photography and other industrial uses decreased in 2019. Overall, production in the global silver market was estimated to have been greater than consumption in 2019 resulting in an excess supply of silver; however, investor purchases were expected to more than offset the surplus and support the higher silver price.⁸

World silver mine production increased slightly in 2019 to an estimated 27,000 tons, principally as a result of increased production from mines in Argentina, Australia, Mexico, and Poland. Some silver-producing mines in Chile and Peru experienced reductions in production owing to protester blockades and worker strikes. Domestic silver mine production increased by 5% in 2019 compared with that in 2018 principally from increased production at mining operations in Alaska.

World Mine Production and Reserves: Reserves for Australia, Peru, and Poland were revised based on new information from official Government sources.

	Mine production		Reserves ⁹
	2018	2019 ^e	
United States	934	980	25,000
Argentina	1,020	1,200	NA
Australia	1,220	1,400	¹⁰ 90,000
Bolivia	1,190	1,200	22,000
Chile	1,370	1,300	26,000
China	3,570	3,600	41,000
Mexico	6,120	6,300	37,000
Peru	4,160	3,800	120,000
Poland	1,470	1,700	100,000
Russia	2,100	2,100	45,000
Other countries	3,730	3,600	57,000
World total (rounded)	26,900	27,000	560,000

World Resources: Although silver was a principal product at several mines, silver was primarily obtained as a byproduct from lead-zinc mines, copper mines, and gold mines, in descending order of 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, 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: Platts Metals Week.

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

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

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

⁸DiRienzo, Michael, and Newman, Philip, 2019, Release of Metal Focus interim silver market review—Silver to remain in a small surplus in 2019, but improving investor sentiment will help drive the price higher: Silver Institute and Metal Focus, November 19, 2 p.

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

¹⁰For Australia, Joint Ore Reserves Committee-compliant reserves were 25,000 tons.