

## ANTIMONY

(Data in metric tons of antimony content unless otherwise noted)

**Domestic Production and Use:** In 2018, no marketable antimony was mined in the United States. A mine in Nevada that had extracted about 800 tons of stibnite ore from 2013 through 2014 was placed on care-and-maintenance status in 2015 and had no reported production in 2018. Primary antimony metal and oxide were produced by one company in Montana using imported feedstock. Secondary antimony production was derived mostly from antimonial lead recovered from spent lead-acid batteries. The estimated value of secondary antimony produced in 2018, based on the average New York dealer price for antimony, was about \$34 million. Recycling supplied about 14% of estimated domestic consumption, and the remainder came mostly from imports. The value of antimony consumption in 2018, based on the average New York dealer price, was about \$251 million. The estimated distribution of domestic primary antimony consumption was as follows: nonmetal products, including ceramics and glass and rubber products, 33%; flame retardants, 36%; and metal products, including antimonial lead and ammunition, 31%.

<b>Salient Statistics—United States:</b>	<b>2014</b>	<b>2015</b>	<b>2016</b>	<b>2017</b>	<b>2018<sup>e</sup></b>
Production:					
Mine (recoverable antimony)	—	—	—	—	—
Smelter:					
Primary	519	627	645	602	400
Secondary	4,280	3,740	3,810	<sup>e</sup> 4,000	4,000
Imports for consumption:					
Ore and concentrates	378	308	119	61	98
Oxide	17,600	16,700	16,200	17,900	21,000
Unwrought, powder, waste and scrap <sup>1</sup>	6,210	5,790	7,150	6,830	6,500
Exports:					
Ore and concentrates <sup>1</sup>	41	31	12	46	47
Oxide	1,670	1,760	1,330	1,600	1,960
Unwrought, powder, waste and scrap <sup>1</sup>	1,570	1,440	623	653	550
Consumption, apparent <sup>2</sup>	25,400	23,700	26,000	26,800	29,000
Price, metal, average, dollars per pound <sup>3</sup>	4.25	3.27	3.35	3.98	3.90
Stocks, yearend	1,400	1,290	1,090	1,360	1,400
Employment, plant, number (yearend) <sup>e</sup>	27	27	27	27	27
Net import reliance <sup>4</sup> as a percentage of apparent consumption	81	82	83	83	85

**Recycling:** The bulk of secondary antimony is recovered at secondary lead smelters as antimonial lead, most of which was generated by, and then consumed by, the lead-acid battery industry.

**Import Sources (2014–17):** Metal: China, 58%; India, 17%; Vietnam, 6%; United Kingdom, 5%; and other, 14%. Ore and concentrate: Italy, 73%; China, 15%; India, 6%; Mexico, 3% and other, 3%. Oxide: China, 61%; Thailand, 11%; Belgium, 10%; Bolivia, 8%; and other, 10%.

<b>Tariff: Item</b>	<b>Number</b>	<b>Normal Trade Relations 12–31–18</b>
Ore and concentrates	2617.10.0000	Free.
Antimony oxide	2825.80.0000	Free.
Antimony and articles thereof:		
Unwrought antimony; powder	8110.10.0000	Free.
Waste and scrap	8110.20.0000	Free.
Other	8110.90.0000	Free.

**Depletion Allowance:** 22% (Domestic), 14% (Foreign).

**Government Stockpile:** None.

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**Events, Trends, and Issues:** In May 2018, the U.S. Department of the Interior, in coordination with other executive branch agencies, published a list of 35 critical minerals (83 FR 23295), including antimony. This list was developed to serve as an initial focus, pursuant to Executive Order 13817, “A Federal Strategy to Ensure Secure and Reliable Supplies of Critical Minerals” (82 FR 60835).

One company operated a smelter in Montana that produced antimony metal and oxides from imported intermediate products (antimony oxide and sodium antimonate), primarily from a smelter in Mexico that processed concentrates from mines in Australia and Mexico. The company reported successful testing of a new product, antimony trisulfide, which would be produced at the facility in Montana. The company also announced the reopening of two of its mines in Mexico.

China continued to be the leading global antimony producer in 2018 and accounted for more than 70% of global mine production. In 2016 and 2017, many large-scale producers reduced production and many small-scale producers closed in response to price declines in China and stricter environmental standards from Provincial and national governments. In 2018, producers in Hunan, Yunnan, and Guizhou Provinces maintained a steady production rate after their smelters completed upgrades to meet the environmental standards. In the next several years, antimony mining in the Guizhou Province was expected to be limited as a part of the Chinese Government’s mining industry reforms aiming to reduce mine overproduction.

### **World Mine Production and Reserves:**

	Mine production		Reserves <sup>5</sup>
	<u>2017</u>	<u>2018<sup>e</sup></u>	
United States	—	—	<sup>6</sup> 60,000
Australia	3,120	3,100	<sup>7</sup> 140,000
Bolivia	2,700	2,700	310,000
Burma	1,000	1,000	NA
China	98,000	100,000	480,000
Guatemala	25	25	NA
Iran	300	300	NA
Kazakhstan	700	700	NA
Laos	340	300	NA
Mexico	243	240	18,000
Pakistan	60	60	NA
Russia (recoverable)	14,400	14,000	350,000
Tajikistan	14,000	14,000	50,000
Turkey	2,000	2,000	100,000
Vietnam	380	300	NA
World total (rounded)	<u>137,000</u>	<u>140,000</u>	<u>1,500,000</u>

**World Resources:** U.S. resources of antimony are mainly in Alaska, Idaho, Montana, and Nevada. Principal identified world resources are in Australia, Bolivia, China, Mexico, Russia, South Africa, and Tajikistan. Additional antimony resources may occur in Mississippi Valley-type lead deposits in the Eastern United States.

**Substitutes:** Selected organic compounds and hydrated aluminum oxide are substitutes as flame retardants. Chromium, tin, titanium, zinc, and zirconium compounds substitute for antimony chemicals in enamels, paint, and pigments. Combinations of calcium, copper, selenium, sulfur, and tin are substitutes for alloys in lead-acid batteries.

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

<sup>1</sup>Gross weight.

<sup>2</sup>Defined as primary production + secondary production from old scrap + net import reliance.

<sup>3</sup>New York dealer price for 99.65% metal, cost, insurance, freight U.S. ports. Source: Platts Metal Week.

<sup>4</sup>Defined as imports of antimony in oxide, unwrought, powder, waste and scrap – exports of antimony in oxide, unwrought, powder, waste and scrap + adjustments for industry stock changes.

<sup>5</sup>See Appendix C for resource and reserve definitions and information concerning data sources.

<sup>6</sup>Company-reported probable reserves for the Stibnite Gold Project in Idaho.

<sup>7</sup>For Australia, Joint Ore Reserves Committee-compliant reserves were 65,000 tons.