

ANTIMONY

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

Domestic Production and Use: There was no domestic mine production of antimony in 2002. The only domestic source of antimony, a silver mine that produced antimony as a byproduct, closed early in 2001 without any output in the year. A small amount of antimony was recovered as a byproduct of lead and silver-copper smelting. Primary antimony metal and oxide was produced by three companies in Montana, New Jersey, and Texas, using foreign feedstock and a small amount of domestic feed material. The estimated value of primary antimony metal and oxide produced in 2002 was \$30 million. Secondary antimony was recovered, mostly in alloy form, at lead smelters; its value, based on the price of antimony metal, was about \$2 million. The estimated distribution of antimony uses was as follows: flame retardants, 55%; transportation, including batteries, 18%; chemicals, 10%; ceramics and glass, 7%; and other, 10%.

Salient Statistics—United States:	1998	1999	2000	2001	2002^e
Production:					
Mine (recoverable antimony) ¹	489	450	W	—	—
Smelter:					
Primary	24,000	23,800	20,900	18,000	16,000
Secondary	7,710	8,220	7,920	6,660	4,000
Imports for consumption	34,600	36,800	41,600	37,900	16,000
Exports of metal, alloys, oxide, and waste and scrap ²	4,170	3,660	7,120	7,610	7,000
Shipments from Government stockpile	4,160	5,790	4,540	4,620	4,000
Consumption, apparent ³	42,700	36,500	49,400	45,200	18,000
Price, metal, average, cents per pound ⁴	72	63	66	65	79
Stocks, yearend	10,600	10,900	6,780	4,970	4,000
Employment, plant, number ^e	80	75	40	40	—
Net import reliance ⁵ as a percentage of apparent consumption	81	82	84	61	41

Recycling: Traditionally, the bulk of secondary antimony has been recovered as antimonial lead, most of which was generated and then also consumed by the battery industry. However, changing trends in this industry in recent years have caused lesser amounts of secondary antimony to be produced.

Import Sources (1998-2001): Metal: China, 86%; Mexico, 6%; Hong Kong, 5%; and other, 3%. Ore and concentrate: China, 37%; Australia, 29%; Austria, 6%; and other, 28%. Oxide: China, 43%; Mexico, 20%; Belgium, 13%; South Africa, 10%; Bolivia, 6%; Hong Kong, 3%; and other, 5%. Total: China, 52%; Mexico, 21%; Belgium, 9%; South Africa, 9%; Hong Kong, 6%; and other, 3%.

Tariff: Item	Number	Normal Trade Relations 12/31/02
Ore and concentrates	2617.10.0000	Free.
Antimony and articles thereof, including waste and scrap	8110.00.0000	Free.
Antimony oxide	2825.80.0000	Free.

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

Government Stockpile: Sales of antimony from the Defense National Stockpile Center proceeded for the 10th consecutive year. Sales were conducted on a negotiated bid basis and were held bimonthly on the first Thursday of the month. There was no maximum quantity for which a company could submit a bid, but the minimum quantity was 18 metric tons. Grade A and grade B ingots, cakes, and broken pieces were offered. The antimony sulfide ore inventory has been depleted. The Somerville, NJ, depot holds the remaining antimony inventory.

Stockpile Status—9-30-02⁶

Material	Uncommitted inventory	Committed inventory	Authorized for disposal	Disposal plan FY 2002	Disposals FY 2002
Antimony	2,588	1,154	2,588	4,500	2,091

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Events, Trends, and Issues: In 2002, antimony production from domestic source materials was derived mainly from the recycling of lead-acid batteries. Recycling supplied only a minor portion of estimated domestic demand.

The price of antimony metal held fairly steady during the first half of 2002. Prices started the year at \$0.63 per pound and ended the first half at \$0.67 per pound. Prices rose sharply in July and August, ending August at \$0.89 per pound. Prices in September increased to \$1.13 per pound. Industry observers thought the significant price increases were caused by a dearth of antimony worldwide, caused mostly by the success of China's export control system.

During 2002, the United States and most major antimony-consuming countries experienced a marked decrease in demand that lasted through most of the year. It affected virtually all consumption categories, and observers attributed it mostly to the economic slowdown of recent years.

World Mine Production, Reserves, and Reserve Base: Reserves and reserve base estimates have been revised for China, Kyrgyzstan, South Africa, and Tajikistan based on new information from those countries.

	Mine production		Reserves ⁷	Reserve base ⁷
	2001	2002 ^e		
United States	—	—	80,000	90,000
Bolivia	2,000	2,200	310,000	320,000
China	135,000	125,000	790,000	2,400,000
Kyrgyzstan	150	200	120,000	250,000
Russia	4,500	5,000	350,000	370,000
South Africa	3,900	4,000	33,000	250,000
Tajikistan	2,500	3,000	50,000	150,000
Other countries	<u>2,950</u>	<u>2,000</u>	<u>25,000</u>	<u>75,000</u>
World total (may be rounded)	151,000	141,000	1,800,000	3,900,000

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

Substitutes: Compounds of chromium, tin, titanium, zinc, and zirconium substitute for antimony chemicals in paint, pigments, and enamels. Combinations of cadmium, calcium, copper, selenium, strontium, sulfur, and tin can be used as substitutes for hardening lead. Selected organic compounds and hydrated aluminum oxide are widely accepted substitutes as flame-retardants.

^eEstimated. W Withheld to avoid disclosing company proprietary data. — Zero.

¹Data for 1998-2000 from the U.S. Securities and Exchange Commission 10-K report.

²Gross weight.

³Domestic mine production + secondary production from old scrap + net import reliance.

⁴New York dealer price for 99.5% to 99.6% metal, c.i.f. U.S. ports.

⁵Defined as imports - exports + adjustments for Government and industry stock changes.

⁶See Appendix B for definitions.

⁷See Appendix C for definitions.