

ANTIMONY

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

Domestic Production and Use: One silver mine in Idaho produced antimony as a byproduct for the first 2 months of 2001 before it shut down, and an additional very small amount of antimony was recovered as a byproduct of the smelting of lead and silver-copper ores. Primary antimony metal and oxide was produced by four companies at processing plants that used foreign feedstock and a small amount of domestic feed material. Single plants were in Idaho, Montana, New Jersey, and Texas. The estimated value of primary antimony metal and oxide produced in 2001 was \$55 million. Secondary antimony was recovered, mostly in alloy form, at lead smelters; its value, based on the price of antimony metal, was about \$3 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:	1997	1998	1999	2000	2001^e
Production:					
Mine (recoverable antimony) ¹	356	498	450	W	300
Smelter:					
Primary	26,400	24,000	23,800	20,900	18,000
Secondary	7,550	7,710	8,220	7,920	7,500
Imports for consumption	39,300	34,600	36,800	37,600	39,000
Exports of metal, alloys, oxide, and waste and scrap ²	3,880	4,170	3,190	1,080	1,500
Shipments from Government stockpile	2,930	4,160	5,790	4,536	4,500
Consumption, apparent ³	46,600	42,700	36,500	49,376	49,800
Price, metal, average, cents per pound ⁴	98	72	63	66	65
Stocks, yearend	10,800	10,600	10,900	10,300	10,300
Employment, plant, number ^e	100	80	75	70	70
Net import reliance ⁵ as a percentage of apparent consumption	83	81	82	84	86

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 (1997-2000): Metal: China, 87%; Mexico, 6%; Hong Kong, 4%; Kyrgyzstan, 2%; and other, 1%. Ore and concentrate: China, 32%; Australia, 29%; Mexico, 22%; Austria, 4%; Russia, 3%; and other, 10%. Oxide: China, 44%; Mexico, 15%; South Africa, 13%; Belgium, 11%; Bolivia, 9%; and other, 8%. Total: China, 32%; Mexico, 15%; South Africa, 13%; Belgium, 11%; Bolivia, 9%; and other, 20%.

Tariff: Item	Number	Normal Trade Relations 12/31/01
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: Government stockpile sales of antimony continued for the ninth year, after being resumed in 1993 for the first time since 1988. Public Law 103-160 provided authorization for the sales. During the year, the Defense Logistics Agency (DLA) held monthly sales for antimony using a negotiated bid process. The DLA announced that its Annual Materials Plan for fiscal year 2002 permitted the disposal of up to 5,000 tons of antimony, the same amount allotted in 2001. Antimony was stockpiled in eight DLA depots, with the largest inventories stored in New Haven, IN, and Somerville, NJ.

Stockpile Status—9-30-01⁶

Material	Uncommitted inventory	Committed inventory	Authorized for disposal	Disposal plan FY 2001	Disposals FY 2001
Antimony	4,716	2,691	4,716	4,536	4,622

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Events, Trends, and Issues: In 2001, antimony production from domestic source materials was derived mainly from the recycling of lead-acid batteries. Recycling plus U.S. mine output supplied only a minor portion of estimated domestic demand. The only domestic mine that produced antimony shut down in Idaho at the end of February.

The price of antimony metal continued to decline during the first half of 2001. Prices started the year at \$0.68 to \$0.73 per pound and ended the first half at \$0.62 to \$0.66 per pound. By the end of August, the price had slipped to \$0.58 to \$0.62 per pound. Industry observers attributed the price decline to a continued world oversupply situation, aggravated by growing exports from China.

Environmental and ecological problems associated with the treatment of antimony raw materials were minimal, because all domestic processors of raw materials now avoid sulfide-containing materials.

World Mine Production, Reserves, and Reserve Base:

	Mine production		Reserves ⁷	Reserve base ⁷
	<u>2000</u>	<u>2001^e</u>		
United States	W	300	80,000	90,000
Bolivia	2,800	3,000	310,000	320,000
China	100,000	95,000	900,000	1,900,000
Kyrgyzstan	200	200	120,000	150,000
Russia	5,000	3,000	350,000	370,000
South Africa	5,000	5,000	240,000	250,000
Tajikistan	2,000	2,000	50,000	60,000
Other countries	⁸ 3,000	6,000	25,000	75,000
World total (may be rounded)	118,000	115,000	2,100,000	3,200,000

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.

¹Data for 1997-2000 from the United States 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.

⁸Includes U.S. production.