

## ANTIMONY

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

**Domestic Production and Use:** There was no domestic mine production of antimony in 2003. The only domestic source of antimony, a silver mine that produced antimony as a byproduct, closed early in 2001 with no output in that year. Primary antimony metal and oxide was produced by two companies in Montana and Texas using imported feedstock. The estimated value of primary antimony metal and oxide produced in 2003 was \$41 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%.

<b>Salient Statistics—United States:</b>	<b>1999</b>	<b>2000</b>	<b>2001</b>	<b>2002</b>	<b>2003<sup>e</sup></b>
Production:					
Mine (recoverable antimony)	450	W	—	—	—
Smelter:					
Primary	15,300	13,300	9,100	W	W
Secondary	8,220	7,700	5,380	5,350	4,200
Imports for consumption	36,800	41,600	37,900	28,500	25,400
Exports of metal, alloys, oxide, and waste and scrap <sup>1</sup>	3,660	7,120	7,610	4,250	3,300
Shipments from Government stockpile	5,790	4,540	4,620	4,627	2,530
Consumption, apparent <sup>2</sup>	36,500	49,400	45,200	W	W
Price, metal, average, cents per pound <sup>3</sup>	63	66	65	88	110
Stocks, yearend	10,900	6,780	4,990	5,490	5,000
Employment, plant, number <sup>e</sup>	75	40	40	35	30
Net import reliance <sup>4</sup> as a percentage of apparent consumption	82	84	61	W	W

**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 that industry in recent years have caused lesser amounts of secondary antimony to be produced.

**Import Sources (1999-2002):** Metal: China, 83%; Mexico, 7%; Hong Kong, 5%; and other, 5%. Ore and concentrate: China, 36%; Australia, 25%; Austria, 9%; and other, 30%. Oxide: China, 41%; Mexico, 25%; Belgium, 13%; South Africa, 13%; Bolivia, 3%; Hong Kong, 2%; and other, 3%. Total: China, 54%; Mexico, 19%; Belgium, 8%; South Africa, 8%; Hong Kong, 3%; and other, 8%.

<b>Tariff: Item</b>	<b>Number</b>	<b>Normal Trade Relations 12/31/03</b>
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 (DNSC) proceeded for the 11th consecutive year. Sales were conducted bimonthly on the first Thursday of each month on a negotiated bid basis through a Basic Ordering Agreement (BOA) sales plan. There was no maximum limit to the quantity for which a company could submit a bid. The materials offered were grade B ingots, cakes, and broken pieces. At the start of calendar year 2003, the antimony inventory in the DNSC was 2,534 metric tons, all held at the Center's Somerville, NJ, depot. The DNSC sold the entire antimony inventory in 2003.

### Stockpile Status—9-30-03<sup>5</sup>

<b>Material</b>	<b>Uncommitted inventory</b>	<b>Committed inventory</b>	<b>Authorized for disposal</b>	<b>Disposal plan FY 2003</b>	<b>Disposals FY 2003</b>
Antimony	—	—	—	2,618	2,618

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**Events, Trends, and Issues:** In 2003, antimony production from domestic source materials was derived entirely from the recycling of lead-acid batteries. Recycling supplied only a minor portion of estimated domestic demand. In recent years, the number of primary antimony smelters has been cut in half, as smelters in New Jersey and Texas were closed.

The price of antimony metal held fairly steady at about \$1.19 per pound through May, and then declined to \$0.95 per pound by August.

During 2003, the United States and most major antimony-consuming countries experienced a continuing trend toward sharply lower demand. 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:**

	<b>Mine production</b>		<b>Reserves<sup>6</sup></b>	<b>Reserve base<sup>6</sup></b>
	<b><u>2002</u></b>	<b><u>2003<sup>e</sup></u></b>		
United States	—	—	80,000	90,000
Bolivia	2,000	2,400	310,000	320,000
China	130,000	125,000	790,000	2,400,000
Russia (recoverable)	5,000	4,500	350,000	370,000
South Africa	5,800	5,700	34,000	250,000
Tajikistan	3,000	2,500	50,000	150,000
Other countries	<u>2,000</u>	<u>2,000</u>	<u>150,000</u>	<u>330,000</u>
World total (rounded)	148,000	142,000	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.

<sup>e</sup>Estimated. W Withheld to avoid disclosing company proprietary data. — Zero.

<sup>1</sup>Gross weight.

<sup>2</sup>Domestic mine production + secondary production from old scrap + net import reliance.

<sup>3</sup>New York dealer price for 99.5% to 99.6% metal, c.i.f. U.S. ports.

<sup>4</sup>Defined as imports – exports + adjustments for Government and industry stock changes.

<sup>5</sup>See Appendix B for definitions.

<sup>6</sup>See Appendix C for definitions.