

## ANTIMONY

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

**Domestic Production and Use:** There was no domestic mine production of antimony in 2005. 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 one company in Montana, using foreign feedstock. Secondary antimony was recovered, mostly in alloy form, at lead smelters; its value, based on the price of antimony metal, was about \$17 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>2001</b>	<b>2002</b>	<b>2003</b>	<b>2004</b>	<b>2005<sup>e</sup></b>
Production:					
Mine (recoverable antimony)	—	—	—	—	—
Smelter:					
Primary	9,100	W	W	W	W
Secondary	5,380	5,350	5,600	6,310	6,110
Imports for consumption	37,900	28,500	26,700	33,500	31,400
Exports of metal, alloys, oxide, and waste and scrap <sup>1</sup>	7,610	4,250	3,680	3,810	3,200
Shipments from Government stockpile	4,620	4,630	2,070	—	—
Consumption, apparent <sup>2</sup>	42,000	34,500	32,000	39,500	34,100
Price, metal, average, cents per pound <sup>3</sup>	65	88	108	130	145
Stocks, yearend	4,990	5,060	6,320	2,790	3,000
Employment, plant, number <sup>e</sup>	40	35	30	30	10
Net import reliance <sup>4</sup> as a percentage of apparent consumption	87	84	83	84	82

**Recycling:** Traditionally, the bulk of secondary antimony has been recovered as antimonial lead, most of which was generated by and then consumed by the battery industry. Changing trends in that industry in recent years, however, have generally reduced the amount of secondary antimony produced; the trend to low-maintenance batteries has tilted the balance of consumption away from antimony and toward calcium as an additive.

**Import Sources (2001-04):** Metal: China, 73%; Mexico, 10%; Hong Kong, 6%; and other, 11%. Ore and concentrate: China, 69%; Austria, 13%; Australia, 5%; Mexico, 1%; and other, 12%. Oxide: China, 40%; Mexico, 35%; Belgium, 11%; South Africa, 10%; and other, 4%. Total: China, 49%; Mexico, 30%; Belgium, 8%; South Africa, 7%; and other, 6%.

<b>Tariff: Item</b>	<b>Number</b>	<b>Normal Trade Relations 12-31-05</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:** None.

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**Events, Trends, and Issues:** In 2005, 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 consumption. In recent years, the number of primary antimony smelters has been reduced, as smelters in New Jersey and Texas were closed in 2004. Only one smelter in Montana continues to make antimony products.

The price of antimony started the year at about \$1.35 per pound and rose steadily to about \$1.45 per pound during March; during June, it had risen to about \$1.60 per pound, and by mid-September, had increased to \$1.85 per pound. The price continued to rise through early fall.

During 2005, antimony use in the United States and most other antimony-consuming countries increased. On the supply side, major world producers, especially in China, continued to experience production constraints. This led to a world supply deficit, helping to fuel price rises.

### **World Mine Production, Reserves, and Reserve Base:**

	Mine production		Reserves <sup>5</sup>	Reserve base <sup>5</sup>
	<u>2004</u>	<u>2005<sup>e</sup></u>		
United States	—	—	80,000	90,000
Bolivia	3,000	2,500	310,000	320,000
China	100,000	105,000	790,000	2,400,000
Russia (recoverable)	NA	NA	350,000	370,000
South Africa	5,300	5,300	44,000	200,000
Tajikistan	2,000	1,800	50,000	150,000
Other countries	<u>2,800</u>	<u>2,200</u>	<u>150,000</u>	<u>330,000</u>
World total (rounded)	113,000	117,000	1,800,000	3,900,000

**World Resources:** U.S. resources of antimony 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. NA Not available. W Withheld to avoid disclosing company proprietary data. — Zero.

<sup>1</sup>Gross weight, for metal, alloys, waste, and scrap.

<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 C for definitions.](#)