

## ANTIMONY

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

**Domestic Production and Use:** One mine in Nevada produced some antimony concentrate in 2008. Primary antimony metal and oxide was produced by one company in Montana, using foreign feedstock. The estimated distribution of antimony uses was as follows: flame retardants, 40%; transportation, including batteries, 22%; chemicals, 14%; ceramics and glass, 11%; and others, 13%.

<b>Salient Statistics—United States:</b>	<b>2004</b>	<b>2005</b>	<b>2006</b>	<b>2007</b>	<b>2008<sup>e</sup></b>
Production:					
Mine (recoverable antimony)	—	—	—	W	W
Smelter:					
Primary	W	W	W	W	W
Secondary	3,650	3,030	3,520	3,480	3,350
Imports for consumption	33,500	22,700	23,200	21,900	22,400
Exports of metal, alloys, oxide, and waste and scrap <sup>1</sup>	3,810	2,140	2,140	1,950	2,050
Consumption, apparent <sup>2</sup>	36,800	31,400	24,300	23,700	23,800
Price, metal, average, cents per pound <sup>3</sup>	130	161	238	257	284
Stocks, yearend	2,830	2,110	2,120	1,900	1,850
Employment, plant, number <sup>e</sup>	30	10	10	10	10
Net import reliance <sup>4</sup> as a percentage of apparent consumption	90	88	86	85	86

**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 (2004-07):** Metal: China, 67%; Mexico, 11%; Peru, 8%; and other, 14%. Ore and concentrate: China, 66%; Bolivia, 2%; and other, 32%. Oxide: China, 47%; Mexico, 40%; Belgium, 7%; and other, 6%. Total: China, 51%; Mexico, 34%; Belgium, 6%; and other, 9%.

<b>Tariff: Item</b>	<b>Number</b>	<b>Normal Trade Relations 12-31-08</b>
Ore and concentrates	2617.10.0000	Free.
Antimony oxide	2825.80.0000	Free.
Antimony and articles thereof, including waste and scrap	8110.00.0000	Free.

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

**Government Stockpile:** None.

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**Events, Trends, and Issues:** In 2008, antimony production from domestic source materials was derived mostly from the recycling of lead-acid batteries. One mine in Nevada produced some antimony concentrate. 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 domestic smelter, in Montana, continues to make antimony products.

The price of antimony started the year at about \$2.66 per pound and generally rose during much of the year finishing August at \$3.04 per pound.

During 2008, the world's leading antimony producer, China, continued experiencing sporadic production problems. Rivers in southern China have been dry because of droughts in late winter, impeding the transportation of antimony materials. Also, Government authorities implemented measures ahead of the Summer Olympic Games that affected antimony production; among the Government's initiatives has been a crackdown on pollution levels, which restricted production at some antimony plants.

Several new antimony mine projects were being developed in Australia, Canada, and Mexico.

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

	Mine production		Reserves <sup>5</sup>	Reserve base <sup>5</sup>
	<u>2007</u>	<u>2008<sup>e</sup></u>		
United States	W	W	—	90,000
Bolivia	5,500	3,500	310,000	320,000
China	150,000	150,000	790,000	2,400,000
Russia (recoverable)	3,500	2,000	350,000	370,000
South Africa	4,400	3,000	44,000	200,000
Tajikistan	2,000	2,000	50,000	150,000
Thailand	—	—	420,000	450,000
Other countries	<u>4,000</u>	<u>4,000</u>	<u>150,000</u>	<u>330,000</u>
World total (rounded)	170,000	165,000	2,100,000	4,300,000

**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. 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.](#)