



Mineral Industry Surveys

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ANTIMONY IN THE SECOND QUARTER 2003

The New York dealer price of antimony metal published by Platts Metals Week started the quarter at \$1.25-\$1.32 per pound and remained steady in that range through early June when it started to decline, finishing June at \$1.04-\$1.15 per pound.

For many years, the Sunshine Mine in Kellogg, ID, was the only domestic mine for antimony. The parent company, Sunshine Mining and Refining Co., closed the mine and sold the refinery in 2001 after operating them at a loss for many years. Shortly thereafter, American Reclamation Inc. (ARI) purchased the mine, which had long been an important silver producer with antimony as a byproduct. Nevertheless, ARI filed for bankruptcy protection in May to forestall sale of the mine's assets by Shoshone County for property taxes of more than \$1 million that are in arrears. However, Sterling Mining Co. of Coeur d Alene, ID, has agreed to lease the mine and has an option to buy it. The lease extends for 15 years with an annual payment of \$120,000 and an option to purchase the mine site for \$3 to \$5 million. It is unclear if there are any plans to resume antimony production (Platts Metals Week, 2003a).

China's General Administration of Customs will monitor the import and export of antimony, manganese, zinc, and tungsten for a 6-month period at the ports of Changsha, Zhajiang, Nanchang, and Taiyuan. Information gained through monitoring will be used to identify trends and to provide an effective basis for the government to make macroeconomic decisions (Metal-Pages, 2003b§¹).

In China, the government has allocated only 67,000 metric tons (t) in its export quota for antimony—3,000 t less than the amount allocated in 2002 (Metal-Pages, 2003c§).

In 2002, Chinese firms exported a total of 20,300 t of refined antimony, a drop of 8% from that of 2001. Antimony oxide exports reached 49,500 t, a 37% increase over that of 2001 (Metal-Pages, 2003d§).

In China, the Jiangxi Nanfang Nonferrous Metals Smelter, one of the country's largest antimony production facilities, idled its antimony smelter in Hechi City and dismantled some of the

plant to reduce pollution. In the next few months, the company will make a final decision on whether to maintain a scaled-down antimony operation or to end production. Nanfang has a capacity of 20,000 t annually, although production rarely reached that level. The smelter is located in the Nandan area of the Guangxi autonomous region, which is suffering from an acute concentrates shortage due to a government crackdown on illegal mining that followed a fatal accident in July 2001. The Nanning smelter, also in Guangxi, announced that it also has stopped producing antimony, and the plant is likely to close permanently by yearend. Nanning produced about 4,000 t of antimony ingot prior to the Nandan mine closures (American Metal Market, 2003).

Severe flooding in south-central China forced antimony producer Hsikwangshan Mining Administration to scale back production. Officials claimed that the company suffered interruptions to production at its southern Lengshujiang mine as a result of prolonged heavy rainfall in Hunan province. Nevertheless, the company, known for its Twinkling Star brand of antimony trioxide, remained optimistic that it would be able to achieve its production forecast of 25,000 t for 2003. Hsikwangshan's capacity is 37,000 t annually (Metal Bulletin, 2003).

Also in China, Xingqian Union Antimony Products has temporarily halted antimony production due to a lack of raw material. Xingqian produced 1,000 t of antimony metal in 2002 (Platts Metals Week, 2003b).

In Japan, Sumitomo Metal Mining (SMM) agreed to sell its antimony trioxide flame retardant business to Nihon Seiko Co. The purchase will allow Nihon Seiko to increase its share of the 15,000-t Japanese antimony trioxide market (Metal-Pages, 2003e§).

In Mexico, Great Lakes Chemical Corp. (Lafayette, IN) announced that it added a fifth antimony oxide production line at its Reynosa facility. The plant's antimony trioxide product is combined with brominated flame retardants in polymer formulations widely used in electrical and electronics applications. It is also an effective flame retardant in high performance polyvinyl chloride (PVC) applications. Great

¹References that include a section mark (§) are found in the Internet References Cited section.

Lakes has stated that it is the world's largest producer of flame retardants (Metal-Pages, 2003a§).

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TABLE 1
SALIENT ANTIMONY STATISTICS ¹

(Metric tons, antimony content, unless otherwise specified)

| | 2002 | 2003 | |
|---|---------------------|---------------------|--------------------|
| | | First quarter | Second quarter |
| Production: | | | |
| Primary smelter ² | W | W | W |
| Secondary | 5,350 ^r | 1,150 | 974 |
| Imports for consumption: | 28,500 | 7,780 ^r | 4,950 ³ |
| Ore and concentrate | 1,310 | 149 | 39 ³ |
| Metal | 4,050 | 1,620 ^r | 663 ³ |
| Oxide ⁴ | 23,200 | 6,010 ^r | 4,240 ³ |
| Exports: | 4,960 ^r | 1,130 ^r | 514 ³ |
| Metal, alloys, and scrap (gross weight) | 1,030 ^r | 68 ^r | 66 ³ |
| Oxide ⁴ | 3,930 ^r | 1,060 ^r | 448 ³ |
| Consumption of primary antimony | 12,900 ^r | 3,040 ^r | 2,690 |
| Price: Average cents per pound ⁵ | 88.39 ^r | 119.82 ^r | 119.58 |
| Stocks, end of period ⁶ | 5,050 ^r | 5,610 ^r | 5,600 |

^rRevised. W Withheld to avoid disclosing company proprietary data.

¹Data are rounded to no more than three significant digits, except prices.

²Nearly all primary smelter output is antimony trioxide.

³Data for April and May only.

⁴Antimony content is calculated by the U.S. Geological Survey.

⁵New York dealer price for 99.5% to 99.6% metal, c.i.f. U.S. ports.

⁶Producer and consumer stocks.

TABLE 2
INDUSTRY STOCKS OF PRIMARY ANTIMONY
IN THE UNITED STATES ¹

(Metric tons, antimony content)

| Class of material | 2003 ² | |
|--------------------|----------------------------|----------------|
| | First quarter ^r | Second quarter |
| Metal | 709 | 718 |
| Oxide | 4,650 | 4,630 |
| Other ³ | 248 | 252 |
| Total | 5,610 | 5,600 |

^rRevised.

¹Data are rounded to no more than three significant digits; may not add to totals shown.

²Estimated 100% coverage based on reports from respondents who held 78% of the total stocks of antimony at the end of 2002.

³Includes ore and concentrate, sulfide, and residues.

TABLE 3
INDUSTRIAL CONSUMPTION OF PRIMARY ANTIMONY ¹

(Metric tons, antimony content)

| Class of material consumed | 2002 ^r | 2003 ² | |
|----------------------------|-------------------|----------------------------|----------------|
| | | First quarter ^r | Second quarter |
| Metal | W | W | W |
| Oxide | 11,000 | 2,490 | 2,310 |
| Other ³ | 1,860 | 549 | 380 |
| Total | 12,900 | 3,040 | 2,690 |

^rRevised. W Withheld to avoid disclosing company proprietary data; included with "Other."

¹Data are rounded to no more than three significant digits; may not add to totals shown.

²Estimated 100% coverage based on reports from respondents who consumed 23% of the total antimony in 2002.

³Includes ores and concentrates, sulfide and residues.

TABLE 4
REPORTED CONSUMPTION OF PRIMARY ANTIMONY, BY CLASS OF
MATERIAL PRODUCED¹

(Metric tons, antimony content)

| Product | 2002 | 2003 ² | |
|-----------------------------|---------------------|--------------------|----------------|
| | | First quarter | Second quarter |
| Metal: | | | |
| Bearing metals and bearings | W | W | W |
| Other ³ | 2,780 ^r | 898 ^r | 639 |
| Total | 2,780 ^r | 898 ^r | 639 |
| Nonmetal: | | | |
| Ceramics and glass | W | W | W |
| Plastics | W | W | W |
| Other ⁴ | 2,710 ^r | 773 ^r | 842 |
| Total | 2,710 ^r | 773 ^r | 842 |
| Flame-retardants: | | | |
| Plastics | 6,050 ^r | 527 ^r | 453 |
| Other ⁵ | 1,360 ^r | 840 ^r | 756 |
| Total | 7,410 ^r | 1,370 ^r | 1,210 |
| Total reported | 12,900 ^r | 3,040 ^r | 2,690 |

^rRevised. W Withheld to avoid disclosing company proprietary data; included with "Other."

¹Data are rounded to no more than three significant digits; may not add to totals shown.

²Estimated 100% coverage based on reports from respondents who consumed 23% of the total antimony in 2002.

³Includes ammunition, antimonial lead, bearing metals and bearings, cable coverings, castings, sheet and pipe, and solder.

⁴Includes ammunition primers, pigments, ceramics and glass, and plastics.

⁵Includes adhesives, pigments, rubber, and textiles.

TABLE 5
U.S. IMPORTS FOR CONSUMPTION OF ANTIMONY, BY CLASS AND COUNTRY ¹

(Metric tons, antimony content)

| Class and country | 2002 | 2003 | | | | January- May ² |
|---|------------------|------------------|-------|-------|-------|------------------------------|
| | | First quarter | March | April | May | |
| Ore and concentrate: | | | | | | |
| China | 715 | 96 | 39 | 20 | 20 | 135 |
| Other | 597 | 53 | 10 | -- | -- | 53 |
| Total | 1,310 | 149 | 49 | 20 | 20 | 188 |
| Metal: | | | | | | |
| China | 2,590 | 1,380 | 402 | 136 | 155 | 1,670 |
| Hong Kong | 92 | -- | -- | -- | 21 | 21 |
| Mexico | 880 | 38 | 21 | 157 | -- | 195 |
| Peru | 285 | 91 | -- | 60 | 63 | 214 |
| Other | 197 ^r | 110 | 22 | 48 | 23 | 183 |
| Total | 4,050 | 1,620 | 445 | 401 | 262 | 2,280 |
| Oxide: | | | | | | |
| Belgium | 3,060 | 647 | 232 | 227 | 304 | 1,180 |
| China | 8,430 | 2,370 | 515 | 1,040 | 996 | 4,400 |
| Hong Kong | 798 | 413 | 81 | -- | 283 | 696 |
| Mexico | 8,110 | 2,110 | 588 | 471 | 471 | 3,050 |
| South Africa | 2,620 | 395 | 200 | 173 | 229 | 797 |
| Other | 178 | 76 | 28 | 25 | 29 | 131 |
| Total | 23,200 | 6,010 | 1,640 | 1,930 | 2,310 | 10,300 |
| Grand total | 28,500 | 7,780 | 2,140 | 2,350 | 2,590 | 12,700 |
| Other antimony compounds (gross weight) | 101 | 1 | -- | 11 | 11 | 23 |

^rRevised. -- Zero.

¹Data are rounded to no more than three significant digits; may not add to totals shown.

²Includes revisions to prior months' data.

Source: U.S. Census Bureau. Antimony content is calculated by the U.S. Geological Survey.