

# Mineral Industry Surveys

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#### **ANTIMONY IN THE FOURTH QUARTER 2007**

Consumption of primary antimony in the fourth quarter of 2007 was estimated by the U.S. Geological Survey to be 9% lower than that in the third quarter of 2007 and 13% lower than that in the fourth quarter of 2006. During the first 11 months of 2007, antimony imports totaled 25,800 metric tons (t) compared with a total of 27,300 t for the comparable period of 2006. During the first 11 months of 2007, China remained the leading supplier of antimony metal and antimony oxide to the United States.

Antimony prices remained fairly steady during the fourth quarter of 2007. The Platts Metals Week New York dealer price for antimony metal started the fourth quarter in the range of \$2.60 to \$2.64 per pound and finished the fourth quarter at \$2.64 to \$2.69 per pound.

U.S. Antimony Corp. (Thompson Falls, MT) announced assay results conducted at its Mexican subsidiary, Antimonio de Mexico S.A. de C.V. in the State of Queretaro, Mexico. The Mexican operation has been producing antimony concentrates for several years. Part of the feed for Antimonio's flotation mill would come from dumps from previous mining operations. The dumps are estimated to contain more than 10,000 t of contained antimony. The assays from these pits range from 1.69% antimony to 4.74% antimony (AntimonyNet, 2007c).

Stockpile Reserves Inc. (Lovelock, NV) announced that its reactivated Fencemaker Mine, about 50 miles southeast of Lovelock, NV, produced 9 t of antimony-in-concentrate during 2007. No other domestic mines were reported to have produced antimony-in-concentrate in 2007. The firm is looking for funds to further develop the mine. The mine has a long history of intermittent antimony production dating back to the 1880s (Richard Brown, Stockpile Reserves, Inc., written commun., February 11, 2008).

According to statistics published by the Government Administration of Customs in China, antimony exports from China, the world's leading antimony producer, declined 61% in 2007 compared with exports in 2006. The main export destinations in 2007 were Japan, the Netherlands, the Republic of Korea, and the United States. Industry observers attributed the sharp decline to a shortage of antimony concentrate in China (Metal-Pages, 2008). Several antimony producers in China reported a marked reduction in the production of antimony concentrates. Hsikwangshan Twinkling Star Co., which has an antimony production capacity of 40,000 metric tons per year (t/yr) in Hunan, expected its antimony output in 2007 to reach only 27,000 t. Shenzhen JieFu Industry Development, which has a 20,000-t/yr antimony capacity facility in Guangdong Province, was only operating the plant at about 50% of its capacity. Statistics from the China Nonferrous Metals Industry Association show that China produced 123,000 t of refined antimony in the first 10 months of 2007, about the same as in the comparable period of 2006. Other industry observers in China noted that rampant smuggling had reduced business through legal channels during 2007 (Platts Metals Week, 2007).

Metorex Ltd. (Saxonwold, South Africa) announced that its Consolidated Murchison Mine was still paralyzed by a strike with its mineworkers over wage levels. Murchison employed about 1,000 mineworkers. The Murchison Mine produced 576,000 t of antimony ore in 2006 and accounted for about 8% of world antimony production. The mine is located in the Murchison Greenstone belt near Gravelotte (AntimonyNet, 2007a).

China Metallurgical Group [(MCC) (Beijing, China)] reported that it planned to invest \$20 million to explore its antimony and tungsten property in the middle of Hunan Province. Reportedly, the firm had purchased the Zhazixi Antimony Mine (AntimonyNet, 2007b). Zhazixi is a 100-year old mine, with a capacity of 3,000 t/yr of refined antimony. MCC has appointed Zhongye Hunan Tungsten and Antimony Co., Ltd. to operate the mine.

#### Update

On February 7, 2008, the Platts Metals Week price for antimony was \$2.60 to \$2.65 per pound.

#### **References Cited**

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Metal-Pages, 2008, Chinese antimony exports down 60.9% in 2008: Metal-

Pages, January 22. (Accessed January 23, 2008, via www.metal-pages.com.) Platts Metals Week, 2007, Minor Metals: Concentrate shortage limits Chinese

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# TABLE 1 SALIENT ANTIMONY STATISTICS $^{\rm 1}$

#### (Metric tons, antimony content, unless otherwise specified)

|   |        | 2007          |                |                    |                  |        |  |  |
|---|--------|---------------|----------------|--------------------|------------------|--------|--|--|
|   | 2006   | First quarter | Second quarter | Third quarter      | Fourth quarter   | Total  |  |  |
| Production:                                 |        |               |                |                    |                  |        |  |  |
| Primary smelter                             |        |               |                |                    |                  |        |  |  |
| Secondary                                   | W      | W             | W              | W                  | W                | W      |  |  |
| Imports for consumption:                    | 30,400 | 6,710         | 6,890          | 7,330 r            | 4,910 2          | 25,800 |  |  |
| Ore and concentrate                         | 153    | 85            | 71             | 37 <sup>r</sup>    | 34 2             | 226    |  |  |
| Metal                                       | 7,260  | 1,380         | 1,740          | 1,520 <sup>r</sup> | 1,020 2          | 5,660  |  |  |
| Oxide <sup>4</sup>                          | 23,000 | 5,250         | 5,070          | 5,780 <sup>r</sup> | 3,860 2          | 20,000 |  |  |
| Exports:                                    | 4,470  | 878           | 981            | 1,120 <sup>r</sup> | 620 <sup>2</sup> | 3,600  |  |  |
| Metal, alloys, and scrap (gross weight)     | 959    | 171           | 147            | 179 <sup>r</sup>   | 186 2            | 683    |  |  |
| Oxide <sup>4</sup>                          | 3,510  | 707           | 834            | 943 <sup>r</sup>   | 434 <sup>2</sup> | 2,920  |  |  |
| Consumption of primary antimony             | 10,400 | 2,430         | 2,350          | 2,280              | 2,080            | 9,140  |  |  |
| Price: Average cents per pound <sup>5</sup> | 238.01 | 256.28        | 252.17         | 256.92             | 263.67           | 257.26 |  |  |
| Stocks, end of period <sup>6</sup>          | 2,110  | 2,260         | 2,210          | 2,190              | 2,080            | XX     |  |  |

Revised. W Withheld to avoid disclosing company proprietary data. XX Not applicable. -- Zero.

<sup>1</sup>Data are rounded to no more than three significant digits, except prices.

<sup>2</sup>Data for October and November only; December data were not available at time of publication.

<sup>3</sup>Data for January - November only; December data were not available at time of publication.

<sup>4</sup>Antimony content is calculated by the U.S. Geological Survey.

<sup>5</sup>Source: Platts Metals Week. New York dealer price for 99.5% to 99.6% metal, c.i.f. U.S. ports.

<sup>6</sup>Producer and consumer stocks.

# TABLE 2 INDUSTRY STOCKS OF PRIMARY ANTIMONY IN THE UNITED STATES<sup>1</sup>

#### (Metric tons, antimony content)

|                    | 2007 <sup>2</sup> |                |               |                |  |  |  |  |
|--------------------|-------------------|----------------|---------------|----------------|--|--|--|--|
| Class of material  | First quarter     | Second quarter | Third quarter | Fourth quarter |  |  |  |  |
| Oxide              | 1,680             | 1,760          | 1,740         | 1,630          |  |  |  |  |
| Other <sup>3</sup> | 582               | 455            | 453           | 454            |  |  |  |  |
| Total              | 2,260             | 2,210          | 2,190         | 2,080          |  |  |  |  |

<sup>1</sup>Data are rounded to no more than three significant digits; may not add to totals shown. <sup>2</sup>Estimated 100% coverage based on quarterly respondents and respondents who held 52% of the

total stocks of antimony at the end of 2006.

<sup>3</sup>Includes ore and concentrate, sulfide, and residues.

# TABLE 3 CONSUMPTION OF PRIMARY ANTIMONY<sup>1,2</sup>

#### (Metric tons, antimony content)

|                            |        | 2007          |                |               |                |       |  |
|----------------------------|--------|---------------|----------------|---------------|----------------|-------|--|
| Class of material consumed | 2006   | First quarter | Second quarter | Third quarter | Fourth quarter | Total |  |
| Oxide                      | 8,710  | 1,950         | 1,970          | 2,000         | 1,880          | 7,800 |  |
| Other <sup>3</sup>         | 1,710  | 476           | 383            | 280           | 203            | 1,340 |  |
| Total                      | 10,400 | 2,430         | 2,350          | 2,280         | 2,080          | 9,140 |  |

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

<sup>2</sup>Estimated 100% coverage based quarterly respondents and respondents who consumed 72% of the total antimony in 2006.

<sup>3</sup>Includes ores and concentrates, metal, sulfide, and residues.

### TABLE 4 CONSUMPTION OF PRIMARY ANTIMONY, BY CLASS OF MATERIAL PRODUCED $^{1}$

|                                |        | 2007          |                |               |                |       |  |  |  |  |
|--------------------------------|--------|---------------|----------------|---------------|----------------|-------|--|--|--|--|
| Product                        | 2006   | First quarter | Second quarter | Third quarter | Fourth quarter | Total |  |  |  |  |
| Metal <sup>2</sup>             | 3,000  | W             | W              | W             | W              | W     |  |  |  |  |
| Nonmetal <sup>3</sup>          | 3,600  | W             | W              | W             | W              | W     |  |  |  |  |
| Flame-retar dants:             |        |               |                |               |                |       |  |  |  |  |
| Plastics                       | 2,810  | 96            | 215            | 90            | 91             | 492   |  |  |  |  |
| Other <sup>4</sup>             | 1,000  | 122           | 25             | 137           | 104            | 388   |  |  |  |  |
| Total                          | 3,810  | 218           | 240            | 227           | 195            | 880   |  |  |  |  |
| Reported consumption           | 10,400 | 710           | 666            | 622           | 554            | 2,550 |  |  |  |  |
| Total consumption <sup>5</sup> | XX     | 2,430         | 2,350          | 2,280         | 2,080          | 9,140 |  |  |  |  |

#### (Metric tons, antimony content)

W Withheld to avoid disclosing company proprietary data; included with "Reported consumption." XX Not applicable.

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

<sup>2</sup>Includes ammunition, antimonial lead, bearing metals and bearings, cable coverings, castings, sheet and pipe, and solder.

<sup>3</sup>Includes adhesives, pigments, rubber, and textiles.

<sup>4</sup>Includes ammunition primers, pigments, ceramics and glass, and plastics.

<sup>5</sup>Estimated 100% coverage based on quarterly respondents and respondents who consumed 72% of the total antimony in 2006.

#### TABLE 5

#### U.S. IMPORTS FOR CONSUMPTION OF ANTIMONY, BY CLASS AND COUNTRY<sup>1</sup>

#### (Metric tons, antimony content)

|   |        |           |           | 200                  | 7       |          |                       |
|---|--------|-----------|-----------|----------------------|---------|----------|-----------------------|
|   | -      | Januar y- |           | Third                |         |          | January-              |
| Class and country                       | 2006   | June      | September | quarter <sup>2</sup> | October | November | November <sup>2</sup> |
| Ore and concentrate:                    |        |           |           | •                    |         |          |                       |
| Bolivia                                 | 130    | 93        | 11        | 23                   | 11      | 11       | 139                   |
| Other                                   | 24     | 63        | 14        | 14                   |         | 11       | 87                    |
| Total                                   | 153    | 156       | 25        | 37                   | 11      | 22       | 226                   |
| Metal:                                  |        |           |           |                      |         |          |                       |
| China                                   | 5,070  | 1,730     | 39        | 986                  | 344     | 474      | 3,530                 |
| Mexico                                  | 800    | 457       | 22        | 136                  | 29      | 17       | 638                   |
| Peru                                    | 846    | 274       | 19        | 37                   | 72      | 18       | 401                   |
| Other                                   | 543    | 665       | 220       | 356                  | 62      |          | 1,080                 |
| Total                                   | 7,260  | 3,130     | 300       | 1,520                | 507     | 508      | 5,660                 |
| Oxide: <sup>3</sup>                     |        |           |           |                      |         |          |                       |
| Belgium                                 | 1,680  | 853       | 169       | 451                  | 103     | 160      | 1,570                 |
| China                                   | 10,600 | 5,170     | 1,170     | 3,160                | 996     | 1,250    | 10,600                |
| Mexico                                  | 8,780  | 4,130     | 728       | 2,070                | 657     | 636      | 7,490                 |
| Other                                   | 1,910  | 172       | 20        | 101                  | 24      | 36       | 333                   |
| Total                                   | 23,000 | 10,300    | 2,090     | 5,780                | 1,780   | 2,080    | 20,000                |
| Grand total                             | 30,400 | 13,600    | 2,410     | 7,330                | 2,300   | 2,610    | 25,800                |
| Other antimony compounds (gross weight) | 47     | 19        |           | 5                    |         |          | 24                    |

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

<sup>2</sup>May include revisions to prior months' data.

<sup>3</sup>Antimony content is calculated by the U.S. Geological Survey.

Source: U.S. Census Bureau.