

Mineral Industry Surveys

For information, contact:

Peter N. Gabby, Bismuth Commodity Specialist
U.S. Geological Survey
989 National Center
Reston, VA 20192
Telephone: (703) 648-4957, Fax: (703) 648-7757
E-mail: pgabby@usgs.gov

Carolyn Crews (Data)
Telephone: (703) 648-7949
Fax: (703) 648-7975
E-mail: ccrews@usgs.gov

Internet: <http://minerals.usgs.gov/minerals>

BISMUTH IN THE FOURTH QUARTER 2004

Total bismuth consumption in the United States for the fourth quarter of 2004 was 594 metric tons (t), which was essentially unchanged from that in the first, second, and third quarters of 2004, according to estimates compiled by the U.S. Geological Survey (USGS). Estimated consumer stocks were essentially unchanged at the end of the fourth quarter of 2004 as compared with the those held at the end of the third quarter of 2004 (table 1). The consumption breakdown for bismuth in the fourth quarter of 2004 was 47% for metallurgical additives and galvanizing; 27% for fusible alloys, solders, and ammunition; 25% for chemical and pharmaceutical uses; and 1% for research and other miscellaneous uses (table 2).

The New York dealer price for bismuth, as published in *Platts Metals Week*, ended the fourth quarter of 2004 at a price range of \$3.40 to \$3.70 per pound. Bismuth started the month of September at \$3.40 to \$3.80, and traded in a narrow price range during the entire fourth quarter, moving up in price twice and down twice, and always within the range of \$3.40 to \$3.85. The price was higher than the fourth quarter 2003 average price of \$2.70 per pound.

In China, the bismuth market was described as soft and lackluster during the fourth quarter, with reports of prices as low as \$3.30 per pound. Western producer and trade sources pointed out that the lack of spot market activity was not a reflection of poor global demand, but rather that more business was being carried out through long-term and negotiated contracts (Metal-Pages, 2004a§¹-c§).

Persistent power shortages in the central Chinese province of Hunan forced the county's largest bismuth producer, Hunan Shizhuyan Nonferrous Metals Co. Ltd., to cut production. Production was reduced by about 20% since the third quarter of 2004, and the power shortage wasn't expected to ease until at least the second quarter of 2005 (American Metal Market, 2005).

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

Tiberon Minerals Ltd. (Canada), on behalf of Nui Phoa Mining Joint Venture Ltd. (Vietnam), signed a memorandum of understanding (MOU) with the world's leading bismuth producer, Sidech SA (Belgium). Under the terms of the MOU, Sidech would purchase all of the Nui Phoa Mine's bismuth output, anticipated to be 1,000 metric tons per year for the first 5 years, and also would provide technical assistance with bismuth production. The agreement was expected to be finalized early in 2005, and the mine was projected to open in the third quarter of 2007 (*Platts Metals Week*, 2004; *Mining Journal*, 2004).

Fortune Minerals Limited started raising funds on the equity markets to continue development of two mining projects, one of which is the NICO gold-cobalt-bismuth deposit 160 kilometers northwest of Yellowknife, Northwest Territories, Canada. The resources at this deposit were estimated at 13.4 million metric tons (Mt) grading 1.62 grams per metric ton (g/t) gold, 0.14% cobalt, and 0.16% bismuth. If cobalt prices are at \$15 per pound, the resource expands to 24.6 Mt grading 1.02 g/t gold, 0.12% cobalt, and 0.14% bismuth. The feasibility study for the project was scheduled to be completed in the first half of 2005 (Metal Pages, 2004d§).

References Cited

- American Metal Market, 2005, Power woes spark China bismuth output cuts: *American Metal Market*, January 26, vol. 113, no. 3-3, p. 6.
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Metal-Pages, 2004b (October 21), Chinese bismuth softens slightly, accessed March 16, 2004, via URL <http://www.metal-pages.com>.
Metal-Pages, 2004c (October 28), Chinese market lackluster; western better, accessed March 16, 2004, via URL <http://www.metal-pages.com>.
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TABLE 1
SALIENT BISMUTH STATISTICS IN THE UNITED STATES¹

(Kilograms unless otherwise specified)

	2003	2004				
		First quarter	Second quarter	Third quarter	Fourth quarter	Year to date
Consumption ^e	2,120,000	607,000	610,000	612,000	594,000	2,420,000
Exports ²	108,000	39,000	21,300	36,000	12,200	109,000
Imports for consumption	2,320,000	502,000	414,000	579,000	489,000	1,980,000
Price per pound, dealer, average of period	2.87	2.94	3.42	3.62	3.43	XX
Stocks, end of period, consumer	278,000	134,000	290,000	135,000	134,000	XX

^eEstimated. XX Not applicable.

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

²Comprises bismuth metal and the bismuth content of alloys and waste and scrap.

TABLE 2
ESTIMATED BISMUTH METAL CONSUMED IN THE UNITED STATES, BY USE¹

(Kilograms)

Use	2003	2004				
		First quarter	Second quarter	Third quarter	Fourth quarter	Year to date
Chemicals ²	616,000	147,000	146,000	146,000	146,000	584,000
Bismuth alloys	646,000	177,000	181,000	183,000	162,000	703,000
Metallurgical additives	831,000	279,000	278,000	278,000	280,000	1,110,000
Other	25,000	4,830	5,640	5,370	5,370	21,200
Total	2,120,000	607,000	610,000	612,000	594,000	2,420,000

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

²Includes industrial and laboratory chemicals, cosmetics, and pharmaceuticals.

TABLE 3
U.S. EXPORTS OF BISMUTH METAL, ALLOYS AND WASTE AND SCRAP, BY COUNTRY¹

(Kilograms)

Country	2003	2004						Year to date
		September	Third quarter	October	November	December	Fourth quarter	
Belgium	10,500	--	--	--	--	--	--	2,720
Brazil	1,800	--	--	269	299	275	843	1,140
Canada	23,500	14,200	22,400	6,180	2,360	--	8,540	46,000
China	992	--	99	--	--	--	--	99
Costa Rica	492	--	--	--	--	--	--	--
Dominica	--	--	--	--	--	--	--	53
Dominican Republic	2,320	12	8,590	35	116	276	427	11,100
Egypt	448	--	--	--	--	--	--	--
Germany	4	--	--	--	--	--	--	1
Guatemala	143	--	--	--	--	--	--	229
Hong Kong	155	--	121	--	--	--	--	360
Hungary	136	--	--	--	--	--	--	--
Israel	7	--	--	--	--	--	--	--
Italy	--	--	--	--	--	113	113	113
Japan	30,200	--	--	118	--	--	118	5,320
Korea, Republic of	496	--	--	--	--	--	--	75
Mexico	33,300	--	4,090	--	--	127	127	28,500
Russia	1,510	--	--	--	--	1,050	1,050	2,090
Singapore	--	--	2	37	--	20	57	59
Thailand	250	--	--	--	--	--	--	--
United Kingdom	1,840	--	729	--	--	960	960	10,700
Total	108,000	14,200	36,000	6,640	2,770	2,820	12,200	109,000

-- Zero.

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

Source: U.S. Census Bureau.

TABLE 4
U.S. IMPORTS FOR CONSUMPTION OF BISMUTH METAL, BY COUNTRY¹

(Kilograms, metal content)

Country	2003	2004						Year to date
		September	Third quarter	October	November	December	Fourth quarter	
Bahamas, The	1,330	--	941	762	--	--	762	1,910
Belgium	778,000	33,100	176,000	71,700	88,900	80,500	241,000	793,000
Canada	22,500	551	1,680	1,720	--	1,150	2,870	8,760
China	573,000	20,000	79,900	--	7,380	20,100	27,500	169,000
Germany	67,100	9	80,300	--	--	90	90	162,000
Hong Kong	105,000	39,600	59,600	--	--	17,400	17,400	77,100
Italy	500	--	--	--	--	--	--	--
Mexico	532,000	40,000	119,000	40,000	40,000	40,000	120,000	495,000
Netherlands	57,900	10	10	--	191	--	191	232
Peru	135	--	--	--	--	--	--	39,800
Russia	--	--	--	--	--	--	--	52
Spain	756	--	--	250	250	--	500	500
United Kingdom	178,000	13,300	61,600	13,700	49,200	15,800	78,800	237,000
Total	2,320,000	147,000	579,000	128,000	186,000	175,000	489,000	1,980,000

-- Zero.

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

Source: U.S. Census Bureau.