

# Mineral Industry Surveys

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## BISMUTH IN THE FOURTH QUARTER 2007

Bismuth consumption in the United States for the fourth quarter of 2007 was estimated to be 213 metric tons (t), which was about 5% below that of the third quarter of 2007 and about 40% below that of the fourth quarter of 2006. The estimated consumption breakdown for bismuth in the fourth quarter was 43% for metallurgical additives; 33% for chemical and pharmaceutical uses; 21% for fusible alloys, solders, and ammunition; and 3% for other uses (table 2). Bismuth imports for the first 11 months of 2007 were about 35% above those in the comparable period of 2006.

The New York dealer price for bismuth, as published in *Platts Metals Week*, drifted lower during the fourth quarter. The price started the fourth quarter at \$15.00 to \$16.00 per pound and declined steadily to finish the fourth quarter at \$12.75 to \$13.75 per pound.

In China, seven bismuth producers in the country's major nonferrous metals production region of Chenzhou, Hunan Province, sought to create what would be the world's leading bismuth producer. It was reported that Hunan Shizhuyuan Nonferrous Metals Corp., the only state-owned company among the seven, could become the leading shareholder of the proposed new organization. It was believed that the new company would produce about 36,000 to 48,000 metric tons per year of bismuth. Producers in Chenzhou control about 40% of China's entire

bismuth output. Chenzhou authorities were actively pushing for the merger, as they wanted to consolidate their bismuth resources, and the move would be in line with the provincial governments' drive to consolidate metals resources in their provinces (*American Metal Market*, 2007).

Fortune Minerals Ltd. (London, Ontario, Canada) announced the start-up on November 21, 2007, of its \$3.8 million pilot plant at SGS Lakefield Research Ltd. in Ontario for its wholly owned NICO cobalt-gold-bismuth deposit in the Northwest Territories. The purpose of the pilot plant was to confirm the operating parameters and products that would be produced in the proposed process plant for NICO. A total of 180 t of ore that was mined from the NICO deposit during 2006 and 2007 underground test mining programs were to be processed. Tests at the NICO pilot plant were expected to be completed in May 2008 (*Fortune Minerals Ltd.*, 2007).

### References Cited

- American Metal Market, 2007, Merger may yield world's top bismuth producer: *American Metal Market*, v. 115, no. 49-5, December 14, p. 15.  
Fortune Minerals Ltd., 2007, Fortune Minerals commences NICO pilot plant: London, Ontario, Canada, Fortune Minerals Ltd. news release, December 4, 2 p.

TABLE 1  
SALIENT BISMUTH STATISTICS<sup>1</sup>

(Kilograms unless otherwise specified)

	2006	2007				
		First quarter	Second quarter	Third quarter	Fourth quarter	Year to date
Consumption <sup>2</sup>	2,050,000	481,000 <sup>r</sup>	465,000 <sup>r</sup>	252,000 <sup>r</sup>	213,000	1,410,000
Exports <sup>3</sup>	311,000	180,000 <sup>4</sup>	112,000 <sup>4</sup>	72,900 <sup>r,4</sup>	50,300 <sup>5</sup>	415,000
Imports for consumption	2,300,000	738,000 <sup>4</sup>	575,000 <sup>4</sup>	1,150,000 <sup>r,4</sup>	363,000 <sup>5</sup>	2,820,000
Price per pound, dealer, average of period	\$5.04	\$9.35	\$16.73	\$17.13	\$14.80	\$14.50
Stocks, end of period, consumer	155,000	134,000	130,000 <sup>r</sup>	123,000 <sup>r</sup>	128,000	XX

<sup>r</sup>Revised. XX Not applicable.

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

<sup>2</sup>Includes estimates calculated by the U.S. Geological Survey for nonrespondents.

<sup>3</sup>Comprises bismuth metal and the bismuth content of alloys and waste and scrap.

<sup>4</sup>All or part of these data have been referred to the U.S. Census Bureau for verification.

<sup>5</sup>Import and export data for December 2007 were not available at time of publication.

TABLE 2  
ESTIMATED BISMUTH METAL CONSUMED  
IN THE UNITED STATES, BY USE<sup>1,2</sup>

(Kilograms)

Use	2006	2007				
		First quarter <sup>r</sup>	Second quarter	Third quarter <sup>r</sup>	Fourth quarter	Year to date
Chemicals <sup>3</sup>	510,000	84,500	83,500	108,000	69,400	345,000
Bismuth alloys	591,000	159,000	156,000 <sup>r</sup>	44,600	45,100	404,000
Metallurgical additives	923,000	234,000	220,000	91,700	91,800	637,000
Other	24,000	3,890	6,310	8,010	7,120	25,300
Total	2,050,000	481,000	465,000 <sup>r</sup>	252,000	213,000	1,410,000

<sup>r</sup>Revised.

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

<sup>2</sup>Includes estimates calculated by the U.S. Geological Survey for nonrespondents.

<sup>3</sup>Includes industrial and laboratory chemicals, cosmetics, and pharmaceuticals.

TABLE 3  
U.S. EXPORTS OF BISMUTH METAL, ALLOYS AND WASTE AND SCRAP, BY COUNTRY<sup>1</sup>

(Kilograms, metal content)

Country	2006	2007 <sup>2</sup>						
		First quarter	Second quarter	September	Third quarter	October	November	January- November <sup>3</sup>
Argentina	9,400	--	12	--	5,290	--	9,150	14,500
Australia	20	--	19	--	319	--	--	338
Austria	--	--	--	--	103	--	--	103
Belgium	--	43,700	15,900	--	218	--	6,330	66,200
Brazil	20	3,630	--	--	--	117	--	3,750
Canada	72,100	25,200	13,900	13,700	17,800	344	6,450	63,600
Chile	916	--	--	--	--	--	--	--
China	--	--	--	--	1,310	--	2,570	3,880
Costa Rica	--	--	400	418	418	--	--	818
Czech Republic	--	--	1,270	--	--	--	--	1,270
Dominican Republic	42,200	2,730	2,130	--	2,480	192	110	7,640
Egypt	--	84	--	20	20	--	--	104
France	14,400	41	--	--	16,800	--	--	16,900
Germany	210	117	117	--	4,670	--	4,500	9,400
Honduras	--	--	--	--	--	--	108	108
Hong Kong	5,740	--	331	979	979	--	1,100	2,410
India	164	--	151	--	382	--	--	533
Ireland	324	--	--	--	314	--	--	314
Israel	2,000	8,730	--	--	--	--	--	8,730
Italy	--	--	--	--	36	--	--	36
Japan	15,000	10,800	3,220	26	26	--	929	14,900
Korea, Republic of	309	--	--	--	--	--	--	--
Malaysia	--	--	100	--	--	--	--	100
Mexico	9,400	8,640	2,470	1,330	7,980	4,620	2,820	26,500
Morocco	717	--	--	--	--	--	--	--
Saudi Arabia	50	--	27	--	--	--	--	27
Singapore	29,300	4,290	5,960	1,880	12,400	6,910	300	29,800
Spain	115	--	--	--	--	--	--	--
Sweden	--	--	23	279	279	390	321	1,010
Taiwan	2,030	--	--	--	--	--	638	638
Thailand	2,690	297	--	515	515	2,430	--	3,240
United Arab Emirates	--	12,400	--	--	--	--	--	12,400
United Kingdom	6,050	--	40,800	591	591	--	--	41,400
Vietnam	97,800	59,900	24,900	--	--	--	--	84,700
Total	311,000	180,000	112,000	19,700	72,900	15,000	35,300	415,000

-- Zero.

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

<sup>2</sup>All or part of these data have been referred to the U.S. Census Bureau for verification.

<sup>3</sup>Export data for December 2007 were not available at time of publication.

Source: U.S. Census Bureau.

TABLE 4  
U.S. IMPORTS FOR CONSUMPTION OF BISMUTH METAL, BY COUNTRY<sup>1</sup>

(Kilograms)

Country	2006	2007 <sup>2</sup>						
		First quarter	Second quarter	September	Third quarter	October	November	January- November <sup>3</sup>
Bahamas, The	1,080	--	--	--	--	--	--	--
Belgium	876,000	318,000	209,000	51,800	248,000	103,000	51,400	930,000
Canada	9,100	3,670	3,280	1,400	1,530	3,000	740	12,200
China	356,000	189,000	161,000	19,000	25,800	9,560	5,910	392,000
France	3	--	200	--	23,100	--	--	23,300
Germany	295	17,700	34,200	--	--	--	--	52,000
Hong Kong	74,600	--	--	--	--	--	--	--
Italy	380	150	127	--	--	--	--	277
Mexico	552,000	120,000	78,900	59,000	121,000	40,000	20,000	380,000
Netherlands	1,080	71	16	--	--	--	--	87
Peru	17,600	--	1,720	500	2,000	--	--	3,710
Singapore	--	--	--	--	--	1	--	1
Spain	1,920	--	--	--	--	225	150	375
United Kingdom	406,000	89,200	85,800	684,000	727,000	73,600	55,000	1,030,000
Total	2,300,000	738,000	575,000	816,000	1,150,000	230,000	133,000	2,820,000

-- Zero.

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

<sup>2</sup>All or part of these data have been referred to the U.S. Census Bureau for verification.

<sup>3</sup>Import data for December 2007 were not available at time of publication.

Source: U.S. Census Bureau.