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Mineral Industry Surveys

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FLUORSPAR IN THE SECOND QUARTER 2005

The recent discovery that some of the quarterly consumption data for aluminum fluoride and hydrofluoric acid (HF) have been double counted has necessitated the revision of consumption data reported in table 2. These data were revised for all four quarters in 2004 and for the first quarter of 2005. The revised table 2, which normally only shows the last two quarters, shows data for the past six quarters.

Reported fluorspar consumption in the second quarter was 157,000 metric tons (t), a decrease of about 2% when compared with the revised figure for the previous quarter and a decrease of about 8% compared with the revised figure for the second quarter of 2004. Consumption of fluorspar for hydrofluoric acid (HF) and aluminum fluoride was 136,000 t, a decrease of about 2% when compared with the revised figure for the previous quarter and a decrease of about 9% when compared with the revised figure for the second quarter of 2004. Imports of fluorspar were 129,000 t, a decrease of 43% compared with the previous quarter, and nearly a 28% increase compared with the second quarter of 2004.

Defense Stockpile

On July 28, the Defense National Stockpile Center (DNSC) announced the award of 9,712 short dry tons (SDT) of metallurgical-grade fluorspar to Oxbow Carbon and Minerals LLC for a sales value of $543,894 (Ringquist, 2005b). On August 9, the DNSC announced the award of 39,068 SDT of metallurgical grade to Hastie Mining and Trucking Co. for $1,251,379, and awarded 600 SDT of acid grade to Oxbow Carbon for a value of $76,800 (Ringquist, 2005a).

Industry News

The second round of bidding for Chinese export quotas was held in June. As in the first round, 225,000 t was offered for "agreement" bidding and 150,000 t under "open" bidding. The average bid price for "agreement" bidding was RMB 464 per metric ton (about $56 per ton). Average bid prices for the "open" bidding, which are normally much higher than "agreement" bids, were not available (Mineral Price Watch, 2005).

The Chinese Ministry of Finance announced that effective May 1, 2005, the 5% rebate paid to exporters of various minerals, including fluorspar, was being repealed. This follows the January 2004 reduction in the export rebate from the then levels of 12% to 15% (depending on the mineral) to 5%. According to Mineral Price Watch (2005), this "has had the net impact of increasing prices by $16-20/tonne according to traders in the country." This was seen as part of the Government's policy to restrict the amount of raw materials (such as fluorspar) exported overseas, in order to provide more material for domestic consumption.

Tiberon Minerals Ltd., on behalf of the Nui Phao Mining Joint Venture Co. Ltd., announced that it had been granted a mining license by Vietnamese Government to develop and mine the Nui Phao tungsten-fluorspar deposit. The license is valid for 30 years and covers about 0.9 square kilometer, which includes the proven and probable reserves located from past exploration drilling. This allows the joint venture company, upon completion of a final feasibility study (see following paragraph), to proceed with project financing, construction, commissioning, and start up of the Nui Phao Mine (Tiberon Minerals Ltd., 2005b§[1]).

Tiberon announced on July 12 the completion of the "final" feasibility study for the Nui Phao tungsten-fluorspar project in Vietnam. The study concluded that the project could successfully produce over 210,000 metric tons per year (t/yr) of fluorspar, about 4,700 t/yr of tungsten, and quantities of bismuth, copper, and gold from an open-pit mining operation with a mine life of 16.3 years. Total capital costs were calculated at $229.8 million, and based on conservative prices for fluorspar and tungsten (which account for 80% of the revenue stream), the project's internal rate of return was calculated at 23.6% (Tiberon Minerals Ltd., 2005a§).

Russia's primary fluorspar mining company, Yaroslavsky Mining and Dressing Complex (YMDC), has new owners and a new name. In 2004, one-half of YMDC (which had been in bankruptcy since 1997) was purchased by Russian Coal. In

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

early 2005, the remaining one-half was acquired by Siberian-Urals Aluminum Co. The company is now known as Russian Ore Mining Co. LLC with Russian Coal as the operator. The new owner-operator intends to invest in new mining and processing equipment with a goal of increasing capacity to 350,000 t/yr. The plans also call for the installation of a 100,000-t/yr-briquetting plant to produce metspar briquets, some of which would be intended for Japanese and Korean steel markets (Industrial Minerals, 2005a).

Fluorochemical News

Solvay Fluor announced it would be constructing a fluorine specialties production facility in Onsan, Republic of Korea. The facility would produce fluorine, sulfur hexafluoride, iodine pentafluoride, and NOCOLOK® flux (a mixture of potassium fluoroaluminate salts). The first part of the facility was expected to be in operation by early 2007 (Industrial Minerals, 2005b).

The consumer advocacy group, U.S. Public Interest Research Group (PIRG), released a report that discussed the dangers of using HF in petroleum alkylation and identified some of the companies and refineries that use HF. The report called for refiners to switch to the use of solid acid catalysts, sulfuric acid, or modified HF (HF mixed with an additive that reduces the effective vapor pressure). The report notes that 50 of the estimated 148 refineries scattered across the United States use and store HF, which PIRG contends is a danger to more than 17 million people (Bourge, 2005).

After some HF accidents in the late 1980s, as part of the Clean Air Act Amendments of 1990, the EPA was directed to carry out a study of HF to identify potential hazards to public health and the environment. The report, published in 1993, determined that "owners/operators can achieve an adequate margin of protection both for their workers and the surrounding community by assiduously applying existing industry standards and practices, existing regulations, and future guidance and regulations applicable to various classes of hazardous substances in various settings" (U.S. Environmental Protection Agency, 1993).

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TABLE 1
SALIENT FLUORSPAR STATISTICS[1]

(Metric tons, unless otherwise specified)

	2004			2005		
	Second quarter	Third quarter	Fourth quarter	First quarter	Second quarter	Year to date
Imports for consumption:	101,000	143,000	129,000	227,000	129,000	357,000
Average value per ton, c.i.f U.S. port, acid grade	$162	$170	$155	$189	$174	$182
Average value per ton, c.i.f. U.S. port, metallurgical	$75	$81	$83	$91	$95	$93
Exports	5,100	4,670	4,050	5,480	6,060	11,500
End of quarter stocks, consumer	102,000	93,400	75,200	130,000 r	105,000	XX
Fluorspar equivalent of imported hydrofluoric acid	48,600	47,900	52,200	53,600	50,700	104,000
Fluorspar equivalent of imported cryolite	1,240	1,080	943	1,100	1,110	2,210
Quarterly reported fluorspar consumption[2]	171,000 r	152,000 r	134,000 r	160,000 r	157,000	317,000

rRevised. XX Not applicable.

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

[2]To eliminate some double counting of consumption data, quarterly reported consumption figures have been revised back to the first quarter of 2004. Revised total consumption for 2004 was 618,000 tons.

TABLE 2

CONSUMPTION OF FLUORSPAR BY END USE AND ASSAY RANGE[1] (DOMESTIC AND FOREIGN IN THE UNITED STATES)

(Metric tons)

End use or product	First quarter 2004: More than 97% calcium fluoride	First quarter 2004: Not more than 97% calcium fluoride	First quarter 2004: Total	Second quarter 2004: More than 97% calcium fluoride	Second quarter 2004: Not more than 97% calcium fluoride	Second quarter 2004: Total
Hydrofluoric acid and aluminum fluoride	140,000 r	--	140,000 r	150,000 r	--	150,000 r
Metallurgical	4,150	9,850	14,000	4,890	9,280	14,200
Other uses or products[2]	6,600	--	6,600	7,280	--	7,280
Total	151,000 r	9,850	161,000 r	162,000 r	9,280	171,000 r
Stocks, end of quarter[3]	147,000	26,600	173,000	76,300	25,900	102,000

End use or product	Third quarter 2004: More than 97% calcium fluoride	Third quarter 2004: Not more than 97% calcium fluoride	Third quarter 2004: Total	Fourth quarter 2004: More than 97% calcium fluoride	Fourth quarter 2004: Not more than 97% calcium fluoride	Fourth quarter 2004: Total	2004 Year to date
Hydrofluoric acid and aluminum fluoride	132,000 r	--	132,000 r	110,000 r	--	110,000 r	532,000 r
Metallurgical	4,670	8,340	13,000	6,670	11,900	18,600	56,900
Other uses or products[2]	7,510	--	7,510	4,990	--	4,990	26,400
Total	144,000 r	8,340	152,000 r	122,000 r	11,900	134,000 r	618,000 r
Stocks, end of quarter[3]	72,100	21,300	93,400	59,500	15,700	75,200	XX

End use or product	First quarter 2005: More than 97% calcium fluoride	First quarter 2005: Not more than 97% calcium fluoride	First quarter 2005: Total	Second quarter 2005: More than 97% calcium fluoride	Second quarter 2005: Not more than 97% calcium fluoride	Second quarter 2005: Total	2005 Year to date
Hydrofluoric acid and aluminum fluoride	139,000 r	--	139,000 r	136,000	--	136,000	275,000
Metallurgical	6,710	8,700 r	15,400 r	4,240	10,100	14,300	29,700
Other uses or products[2]	5,140	--	5,140	7,250	--	7,250	12,400
Total	151,000 r	8,700 r	160,000 r	147,000	10,100	157,000	317,000
Stocks, end of quarter[3]	116,000	13,700 r	130,000 r	97,300	8,010	105,000	XX

rRevised. XX Not applicable. -- Zero.

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

[2]Includes acid grade used in enamel, glass and fiberglass, steel castings, and welding rod coatings.

[3]Stocks include distributor stocks (excluding National Defense Stockpile holdings) and consumer stocks for hydrofluoric acid and aluminum fluoride.

NOTE: This table has been revised to eliminate double counting of some consumption data.

TABLE 3

U.S. IMPORTS FOR CONSUMPTION OF FLUORSPAR, BY COUNTRY AND VALUE[1,2]

	2004						2005					
	Second quarter		Third quarter		Fourth quarter		First quarter		Second quarter		Total	
	Quantity (metric tons)	Value[3] (thousands)	Quantity (metric tons)	Value[3] (thousands)	Quantity (metric tons)	Value[3] (thousands)	Quantity First quarter	Value[3] (thousands)	Quantity (metric tons)	Value[3] (thousands)	Quantity (metric tons)	Value[3] (thousands)
Containing more than 97% calcium fluoride:												
China	23,500	$4,430	104,000	$18,200	31,800	$5,380	168,000	$33,000	89,700	$15,600	257,000	$48,600
France	--	--	44	16	22	8	39	21	--	--	39	21
Germany	19	9	--	--	--	--	19	9	--	--	19	9
Mexico	27,100	4,210	17,900	2,900	18,100	2,960	12,200	1,790	10,400	1,780	22,600	3,570
Mongolia	13,400	2,210	10,800	1,570	24,900	3,910	10,100	1,650	8,860	1,490	19,000	3,140
South Africa	28,300	4,180	6,000	707	32,100	4,380	24,600	3,980	9,870	1,860	34,400	5,840
United Kingdom	--	--	9	17	507	60	--	--	--	--	--	--
Total	92,400	15,000	138,000	23,400	108,000	16,700	215,000	40,500	119,000	20,700	333,000	61,200
Containing not more than 97% calcium fluoride:												
Canada	--	--	--	--	6	2	34	12	41	17	75	29
Mexico	6,350	511	4,840	392	21,700	1,800	12,400	1,110	10,600	1,000	23,000	2,120
Other	1,880	102	--	--	--	--	--	--	--	--	--	--
Total	8,230	613	4,840	392	21,700	1,800	12,400	1,130	10,700	1,020	23,100	2,140
Grand total	101,000	15,700	143,000	23,800	129,000	18,500	227,000	41,600	129,000	21,700	357,000	63,300

-- Zero.

[1]Imports for consumption include imports of immediate entry, and warehouse withdrawals.

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

[3]Cost, insurance, and freight at U.S. ports.

Source: U.S. Census Bureau.

TABLE 4

IMPORTS FOR CONSUMPTION OF HYDROFLUORIC ACID[1]

	2004						2005					
	Second quarter		Third quarter		Fourth quarter		First quarter[r]		Second quarter		Total	
	Quantity (metric tons)	Value[2] (thousands)	Quantity (metric tons)	Value[2] (thousands)	Quantity (metric tons)	Value[2] (thousands)	Quantity (metric tons)	Value[2] (thousands)	Quantity (metric tons)	Value[2] (thousands)	Quantity (metric tons)	Value[2] (thousands)
Canada	11,900	$12,400	13,200	$13,700	10,700	$11,000	11,100	$11,900	9,750	$10,500	20,800	$22,400
China	514	319	261	198	59	55	234	169	270	177	504	346
Germany	45	88	61	139	91	193	61	168	77	165	138	333
Japan	214	530	420	1,000	391	961	333	822	293	720	626	1,540
Mexico	19,700	18,700	17,900	17,400	23,400	22,600	23,700	22,600	23,300	22,300	47,000	44,900
Other[3]	119	345	67	165	128	314	287	298	122	283	409	581
Total	32,400	32,400	31,900	32,500	34,800	35,100	35,700	36,000	33,800	34,200	69,500	70,200

[r]Revised.

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

[2]Cost, insurance, and freight at U.S. ports.

[3]Includes India, Italy, the Republic of Korea, the Netherlands, Singapore, Switzerland, and Taiwan.

Source: U.S. Census Bureau.