

# Mineral Industry Surveys

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## FLUORSPAR IN THE FIRST QUARTER 2009

Reported fluorspar consumption in the first quarter was 92,800 metric tons (t), a decrease of about 8% compared with that of the previous quarter and a decrease of more than 34% compared with consumption in the first quarter of 2008. First quarter stocks increased by more than 19% compared with those of the previous quarter, and were up 35% compared with those of the first quarter of 2008.

Owing to the closure of Alcoa World Alumina LLC's aluminum fluoride (AlF<sub>3</sub>) plant, consumption of acid-grade fluorspar (acidspars) for hydrofluoric acid (HF) is now included under the "Other uses or products" heading in table 2. This was done in order to protect company proprietary data.

In recent years, the import values [cost, insurance, and freight (c.i.f.)] for some acidspars imports appear to have been underreported. In the first quarter 2009, February's acidspars import values appear to be a prime example of this pattern. As a result, the accuracy of average import values for acidspars, as calculated from U.S. import statistics, is questionable and therefore are not listed in table 1. According to *Industrial Minerals* magazine (IMM), end-of-first-quarter-2009 acidspars prices were—China, dry basis, c.i.f. U.S. Gulf of Mexico port, \$510 to \$530 per metric ton; Mexico, free on board (f.o.b.) Tampico, \$350 per metric ton and \$350 to \$370 per metric ton (low arsenic); and South Africa, f.o.b. Durban, \$350 to \$370 per metric ton (*Industrial Minerals*, 2009b).

Beginning in April 2009, IMM started listing prices for metallurgical-grade fluorspar. IMM reported a price range of \$140 to \$195 per metric ton, free on board, Tampico, Mexico, from April to June 2009 (*Industrial Minerals*, 2009a). This price range is significantly higher than the average quarterly import price (\$103 to \$109 per metric ton) derived from U.S. trade data over the past four quarters (table 1). The average U.S. import price for the first quarter 2009 was \$191 per metric ton, although this was mostly the result of a shipment of ceramic-grade fluorspar in January. Ceramic grade can be close to the purity of acid grade (with a corresponding high price), but since there is no specific harmonized tariff code for the grade, it is classified as metallurgical grade. In general, ceramic-grade fluorspar contains 85% to 95% calcium fluoride (CaF<sub>2</sub>), and metallurgical-grade fluorspar contains 60% to 85% CaF<sub>2</sub>.

### Industry News

Metorex Ltd. (Johannesburg, South Africa), reported lower fluorspar production from its South African majority-owned fluorspar producer Vergenoeg Mining Company (Pty) Ltd. The reasons given were a drive to produce a higher-quality product and power outages in South Africa. Tonnage throughput remained at 150,000 metric tons per quarter, and feed grades were consistent at 40% fluorspar. Acidspars recoveries, however, decreased to 63% from 73% as a direct result of the new magnetic separation circuit installed to reduce iron contamination in the concentrate. The circuit was commissioned in the fourth quarter of 2008. The company said that the market for fluorspar remained "tight," but the Vergenoeg Mine's acidspars sales had not yet been fully committed for the 2009 calendar year (Swanepoe, 2009).

Metorex said it had received a cash offer from a Black Economic Empowerment company for a 15% equity interest in the Vergenoeg fluorspar mine. Conditional on a due diligence review and the necessary regulatory approvals, the transaction was expected to be finalized in early June 2009 (Reuters UK, 2009).

Rivera Capital Corp. (North Vancouver, British Columbia, Canada) and Burin Fluorspar Ltd. (Alberta, Canada) announced that shareholders of both companies voted unanimously in favor of combining the two companies. The companies amalgamated, effective April 15, 2009, and will henceforth operate under the name Canada Fluorspar Inc. The companies were in the process of satisfying all regulatory requirements necessary to complete the amalgamation (*Trading Markets.com*, 2009).

Canada Fluorspar was proceeding with plans to reopen the St. Lawrence Fluorspar Mine in Newfoundland, Canada, with a target date of 2011. A significant development was the company's announcement of its recently completed NI 43-101 compliant technical report on the St. Lawrence property. According to the report, the company's drilling was completed on two separate identifiable vein resources, each of which has the potential to become a separate mine.

The Blue Beach vein contains approximately 4.4 million metric tons (Mt) of indicated mineral resources at an average grade of 39.0% CaF<sub>2</sub>. In addition, Blue Beach north vein

contains approximately 355,000 t of inferred mineral resources at an average grade of 30.0% CaF<sub>2</sub>.

The Tarefare vein (and the associated Blowout vein) contains approximately 4.7 Mt of indicated mineral resources at an average grade of 44.8% CaF<sub>2</sub>. In addition, the Blowout vein contains approximately 595,000 t of inferred mineral resources at an average grade of 31.8% CaF<sub>2</sub>.

Using a cut-off grade of 20% CaF<sub>2</sub> and minimum horizontal thickness of 2 meters, the mineral resources of the St. Lawrence property totaled approximately 9.1 Mt of indicated mineral resources at an average grade of 42.0% CaF<sub>2</sub> and 950,000 t of inferred mineral resources at an average grade of 31.0% CaF<sub>2</sub>. Total indicated mineral resources increased by 57% from their July 2008 estimate (CNW Group, 2009).

A decision has been handed down in the supply contract dispute between Honeywell International Inc. (Morristown, NJ) and South African fluorspar producer Sallies Ltd. (Pretoria). The International Chamber of Commerce International Court of Arbitration in Switzerland has ruled that fluorspar producer Sallies has to pay R11.5 million (\$1.24 million) plus interest to Honeywell. The amount awarded was significantly lower than either the R65 million originally claimed by Honeywell or the R42 million claimed by Sallies in its countersuit (Schumacher, 2009).

Subsequent to the decision, Sallies requested that the Federal Supreme Court of Switzerland review the Court of Arbitration's finding against it. As part of its request, Sallies asked the Swiss Supreme Court to instruct the Court of Arbitration to reject Honeywell's claim and to approve Sallies counterclaim (Creamer, 2009).

### Fluorochemical News

Canada's Cameco Corp. (Saskatoon, Saskatchewan) is preparing to resume production of uranium hexafluoride (UF<sub>6</sub>) at its conversion facility in Port Hope, Ontario, after signing a

new HF supply contract. HF is a primary feed material in the production of UF<sub>6</sub> from uranium oxide, and production of UF<sub>6</sub> was suspended in December 2008, when problems arose with its sole-source supplier of HF. Cameco has now signed a new contract with the same supplier, under "mutually beneficial" terms, and HF deliveries were expected to resume in June. Meanwhile, Cameco is negotiating with other suppliers to broaden and diversify its HF supply base (Hill, 2009).

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

(Metric tons, unless otherwise specified)

	2008					2009
	First quarter	Second quarter	Third quarter	Fourth quarter	Total or average	First quarter
Imports for consumption:						
Quantity	122,000	157,000	125,000	167,000	572,000	134,000
Average value per ton, c.i.f. U.S. port, metallurgical grade <sup>2</sup>	\$103	\$106	\$109	\$108	\$107	\$191
Exports	4,070	4,620	4,690	5,470	18,800	2,110
End of quarter stocks, consumer	102,000	107,000	89,700	115,000	XX	138,000
Imports for consumption of hydrofluoric acid <sup>3</sup>	35,000	36,700	30,300	30,600	133,000	29,600
Imports for consumption of cryolite <sup>3</sup>	2,370	2,160	2,070	1,050	7,650	462
Quarterly reported fluorspar consumption	142,000	138,000	127,000	101,000	508,000	92,800

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>Value data appear to be underreported and are too low to make accurate average-value-per-ton calculations for acid-grade imports.

<sup>3</sup>In the past, these data showed imports in fluorspar equivalents, but data are now actual imports for consumption of indicated materials.

TABLE 2  
 CONSUMPTION OF FLUORSPAR BY END USE AND ASSAY RANGE<sup>1</sup>  
 (DOMESTIC AND FOREIGN IN THE UNITED STATES)

(Metric tons)

	Hydrofluoric acid and aluminum fluoride	Metallurgical	Other uses or products <sup>2</sup>	Total	Stocks, end of period <sup>3</sup>
2008:					
First quarter:					
More than 97% calcium fluoride	120,000	4,020	7,640	132,000	85,800
Not more than 97% calcium fluoride	--	9,660	--	9,660	16,100
Total	120,000	13,700	7,640	142,000	102,000
Second quarter:					
More than 97% calcium fluoride	118,000	3,630	7,170	129,000	92,000
Not more than 97% calcium fluoride	--	9,280	--	9,280	15,100
Total	118,000	12,900	7,170	138,000	107,000
Third quarter:					
More than 97% calcium fluoride	107,000	3,630	7,170	118,000	70,800
Not more than 97% calcium fluoride	--	9,170	--	9,170	18,900
Total	107,000	12,800	7,170	127,000	89,700
Fourth quarter:					
More than 97% calcium fluoride	NA	3,630	89,800	93,500	94,300
Not more than 97% calcium fluoride	--	7,170	--	7,170	21,200
Total	NA	10,800	89,800	101,000	115,000
Grand total	346,000 <sup>4</sup>	50,200	112,000	508,000	XX
2009:					
First quarter:					
More than 97% calcium fluoride	NA	3,630	85,400	89,100	120,000
Not more than 97% calcium fluoride	--	3,750	--	3,750	18,100
Total	NA	7,380	85,400	92,800	138,000

NA Not available. XX Not applicable. -- Zero.

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

<sup>2</sup>May include cement, enamel, glass and fiberglass, steel castings, hydrofluoric acid, and welding rod coatings.

<sup>3</sup>Stocks include some distributor stocks and consumer stocks for hydrofluoric acid and aluminum fluoride.

<sup>4</sup>Cumulative total excluding fourth quarter data.

TABLE 3  
U.S. IMPORTS FOR CONSUMPTION OF FLUORSPAR, BY COUNTRY AND VALUE<sup>1,2</sup>

	2008										2009	
	First quarter		Second quarter		Third quarter		Fourth quarter		Year		First quarter	
	Quantity (metric tons)	Value <sup>3</sup> (thousands)										
Containing more than 97% calcium fluoride:												
China	14,700	\$3,540	68,400	\$21,400	41,800	\$17,200	58,600	\$25,000	184,000	\$67,100	41,700	\$17,400
Germany	133	17	--	--	--	--	--	--	133	17	--	--
Mexico	67,300	12,300	63,000	11,000	54,400	8,670	64,400	10,000	249,000	42,000	55,800	11,900
Mongolia	--	--	--	--	--	--	5,500	2,100	5,500	2,100	--	--
Russia	1	7	--	--	--	--	--	--	1	7	--	--
South Africa	15,000	2,540	14,500	2,920	39	19	27,200	8,600	56,700	14,100	32,100	9,470
United Kingdom	7	20	4	11	592	79	40	9	643	119	2	4
Total	97,100	18,400	146,000	35,400	96,800	25,900	156,000	45,700	496,000	125,000	130,000	38,800
Containing not more than 97% calcium fluoride:												
Mexico	24,500	2,530	11,100	1,190	28,300	3,100	11,200	1,220	75,200	8,040	4,790	913
Namibia	276	24	243	21	--	--	283	26	802	71	--	--
Total	24,800	2,560	11,400	1,210	28,300	3,100	11,500	1,250	76,000	8,110	4,790	913
Grand total	122,000	21,000	157,000	36,600	125,000	29,000	167,000	46,900	572,000	133,000	134,000	39,700

-- Zero.

<sup>1</sup>Imports for consumption include imports of immediate entry and warehouse withdrawals.

<sup>2</sup>Data are rounded to no more than three significant digits; may not add to totals shown.

<sup>3</sup>Value data for imports "containing more than 97% calcium fluoride" are believed to be underreported; insufficient information is available to make accurate adjustments.

Source: U.S. Census Bureau.

TABLE 4  
IMPORTS FOR CONSUMPTION OF HYDROFLUORIC ACID<sup>1</sup>

	2008										2009	
	First quarter		Second quarter		Third quarter		Fourth quarter		Year		First quarter	
	Quantity (metric tons)	Value <sup>2</sup> (thousands)										
Canada	5,130	\$10,000	7,300	\$13,000	6,750	\$13,700	4,710	\$11,600	23,900	\$48,400	3,670	\$11,700
China	442	595	279	365	276	454	691	1,020	1,690	2,430	679	854
Germany	162	346	159	440	165	412	75	223	561	1,420	115	373
Japan	391	933	270	439	246	471	329	673	1,240	2,520	138	324
Mexico	28,800	30,600	28,700	30,700	22,800	27,100	24,700	28,200	105,000	117,000	24,900	26,700
Other	16	52	16	58	48	207	104	266	184	583	65	110
Total	35,000	42,600	36,700	45,000	30,300	42,400	30,600	42,000	133,000	172,000	29,600	40,100

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

<sup>2</sup>Cost, insurance, and freight at U.S. ports.

Source: U.S. Census Bureau.