

Mineral Industry Surveys

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FLUORSPAR IN THE FIRST QUARTER 2013

Reported fluorspar consumption in the first quarter was 110,000 metric tons (t), an increase of 67% compared with that of the previous quarter but 13% less than that in the first quarter of 2012. Stocks totaled 264,000 t at the end of the first quarter, an increase of 13% compared with those at the end of the previous quarter. Fluorspar imports in the first quarter were 172,000 t, an increase of 24% compared with those of the previous quarter.

Industry News

Canada Fluorspar Inc. announced the results of a new preliminary feasibility study (PFS) for its jointly owned St. Lawrence fluorspar project in Newfoundland, Canada. The PFS was based on updated capital and operating costs but used the existing resource estimate. The PFS examined a fluorspar production operation with a 14-year mine life. The estimated average annual production increased to 131,000 t from 122,000 t, capital costs increased to \$154 million from \$98 million, and production costs increased to \$231 per metric ton from \$208 per ton, when compared to the original PFS completed in May 2011. Economic analysis of the project's profitability was based on acid-grade fluorspar at \$500 per ton, but profit projections also were calculated for prices as low as \$400 per ton and as high as \$600 per ton. An additional review was still underway to establish a more precise understanding of the project's anticipated cost and scope, and no decision had been made on when or if the project will proceed (Canada Fluorspar Inc., 2013).

Vanoil Energy Ltd., a Canadian-based oil and gas company with a portfolio of assets in East Africa, announced its intention to acquire Fluormin plc. Fluormin currently has nonproducing fluorspar assets in South Africa and Tunisia and owns 49% of Fluorone Trading Ltd. Under the terms of the acquisition, Vanoil estimated that \$27 million could be realized from Fluormin's existing accounts and receivables and from the subsequent disposal of Fluormin's assets. This would provide near-term financing to allow Vanoil to proceed with its drilling and seismic programs in East Africa (Vanoil Energy Ltd., 2013). Fluormin's South African Witkop Mine has been on care-and-maintenance status since October 2012.

Fluorochemical News

The European Union's (EU) mobile air conditioning directive (MACD) went into effect on January 1, 2013. The MACD is part of the EU's F-Gas Regulation (842/2006) intended to reduce specific fluorinated greenhouse gas emissions from air-conditioning (A/C) systems in passenger cars and light commercial vehicles. The directive requires that A/C refrigerants in all new model vehicles sold after January 1, 2013, and all cars sold after 2017 have a global warming potential (GWP) of less than 150. The GWP of a gas describes its total warming impact relative to carbon dioxide (CO₂) over a set period. This means, for example, that a gas with GWP of 100 would trap 100 times the heat trapped by an equivalent amount of CO₂. This regulation spurred the development of hydrofluoroolefin 1234yf (HFO-1234yf), which has a GWP of 4. The SAE International Cooperative Research Project judged the compound to be safe and effective in automotive applications (Honeywell International Inc., 2013). HFO-1234yf was developed to replace the current standard A/C refrigerant hydrofluorocarbon-134a (HFC-134a) and the successful introduction and use of HFO-1234yf would likely have a major effect on global fluorspar consumption.

References Cited

- Canada Fluorspar Inc., 2013, Canada Fluorspar announces updated preliminary feasibility study for its St. Lawrence, Newfoundland fluorspar project: Toronto, Ontario, Canada, Canada Fluorspar Inc. press release, January 30, 6 p. (Accessed May 24, 2013, at <http://www.canadafluorspar.com/pdf/20130130feasibilityStudy.pdf>.)
- Honeywell International Inc., 2013, Honeywell welcomes implementation of European MAC directive aimed at reducing greenhouse gas emissions: Morristown, NJ, Honeywell International Inc. news release. (Accessed June 6, 2013, at <https://honeywell.com/News/Pages/Honeywell-Welcomes-Implementation-Of-European-MAC-Directive-Aimed-At-Reducing-Greenhouse-Gas-Emissions.aspx>.)
- Vanoil Energy Ltd., 2013, Confirmation of the intention of Vanoil Energy Ltd. ("Vanoil") to acquire Fluormin PLC ("Fluormin" Or The "Company"): Vancouver, British Columbia, Canada, Vanoil Energy Ltd. press release, March 26. (Accessed May 29, 2013, at <http://www.vanoil.ca/s/News/Releases.asp?DateRange=2013/01/01...2013/12/31>.)

TABLE 1
SALIENT FLUORSPAR STATISTICS¹

(Metric tons, unless otherwise specified)

	2012				1st quarter– 4th quarter	2013 1st quarter
	1st quarter	2d quarter	3d quarter	4th quarter		
<u>Fluorspar:</u>						
Imports for consumption	151,000	141,000	189,000	139,000	620,000	172,000
Exports	6,040	5,350	6,720	5,670	23,800	5,360
End of the period stocks, consumer	164,000	156,000	171,000	234,000	234,000	264,000
Reported consumption	127,000	114,000	109,000	65,800	416,000	110,000
<u>Other compounds, imports for consumption:</u>						
Aluminum fluoride	14,200	11,600	14,500	9,720	50,000	11,700
Cryolite	2,170	1,800	1,760	2,400	8,140	1,960
Hydrofluoric acid	35,300	36,500	32,000	29,200	133,000	31,700

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

TABLE 2
CONSUMPTION OF FLUORSPAR BY END USE AND ASSAY RANGE¹
(DOMESTIC AND FOREIGN IN THE UNITED STATES)

(Metric tons)

	Hydrofluoric acid and other uses ²	Metallurgical	Total	Stocks, end of period ³
2012:				
1st quarter:				
More than 97% calcium fluoride	115,000	2,990	118,000	142,000
Not more than 97% calcium fluoride	--	8,170	8,170	21,700
Total	115,000	11,200	127,000	164,000
2d quarter:				
More than 97% calcium fluoride	99,700	2,990	103,000	139,000
Not more than 97% calcium fluoride	--	11,500	11,500	16,400
Total	99,700	14,500	114,000	156,000
3d quarter:				
More than 97% calcium fluoride	98,000	2,990	101,000	155,000
Not more than 97% calcium fluoride	--	8,250	8,250	16,500
Total	98,000	11,200	109,000	171,000
4th quarter:				
More than 97% calcium fluoride	55,000	2,990	58,000	219,000
Not more than 97% calcium fluoride	--	7,830	7,830	15,100
Total	55,000	10,800	65,800	234,000
1st quarter–4th quarter	368,000	47,800	416,000	234,000
2013:				
1st quarter:				
More than 97% calcium fluoride	99,200	2,990	102,000	248,000
Not more than 97% calcium fluoride	--	8,280	8,280	16,000
Total	99,200	11,300	110,000	264,000

-- Zero.

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

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

³Stocks include some distributor stocks and consumer stocks for hydrofluoric acid.

TABLE 3
U.S. IMPORTS FOR CONSUMPTION OF FLUORSPAR, BY COUNTRY AND VALUE^{1,2}

	2012										2013	
	1st quarter		2d quarter		3d quarter		4th quarter		1st quarter–4th quarter		1st quarter	
	Quantity (metric tons)	Value (thousands)										
Containing more than 97% calcium fluoride:												
China	28,400	\$17,800	3,740	\$1,850	31,200	\$15,000	17,400	\$8,600	80,800	\$43,300	8,870	\$4,640
Germany	17	18	--	--	--	--	--	--	17	18	--	--
Mexico	64,500	17,300	85,300	20,400	91,500	19,300	61,600	13,800	303,000	70,700	121,000	22,500
Mongolia	--	--	--	--	9,910	4,890	--	--	9,910	4,890	12,000	5,220
South Africa	21,000	5,670	12,100	3,280	5,320	1,940	19,200	7,040	57,600	17,900	6,870	3,100
Spain	--	--	12,000	4,440	--	--	--	--	12,000	4,440	--	--
United Kingdom	2	7	2	7	275	145	2	8	281	167	2	8
Total	114,000	40,800	113,000	29,900	138,000	41,200	98,200	29,400	464,000	141,000	149,000	35,400
Containing not more than 97% calcium fluoride:												
China	9	11	--	--	--	--	262	28	271	39	--	--
Mexico	36,400	3,830	27,900	2,750	51,200	4,920	39,100	3,740	155,000	15,200	20,700	2,060
Mongolia	--	--	--	--	--	--	1,050	98	1,050	98	2,640	251
Namibia	419	37	--	--	--	--	--	--	419	37	--	--
Total	36,900	3,880	27,900	2,750	51,200	4,920	40,400	3,870	156,000	15,400	23,400	2,310
Grand total	151,000	44,700	141,000	32,700	189,000	46,100	139,000	33,300	620,000	157,000	172,000	37,700

-- Zero.

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

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

Source: U.S. Census Bureau.

TABLE 4
IMPORTS FOR CONSUMPTION OF HYDROFLUORIC ACID¹

	2012										2013	
	1st quarter		2d quarter		3d quarter		4th quarter		1st quarter–4th quarter		1st quarter	
	Quantity (metric tons)	Value ² (thousands)										
Canada	4,560	\$11,700	3,220	\$9,530	1,480	\$4,990	1,500	\$5,080	10,800	\$31,300	2,010	\$5,940
China	1,080	1,570	1,980	2,860	1,560	2,230	1,270	1,610	5,890	8,270	1,340	1,770
Germany	87	198	37	122	72	172	37	117	233	609	74	196
Japan	230	549	316	753	388	922	377	922	1,310	3,150	283	678
Mexico	29,200	47,500	30,800	50,900	28,400	47,200	25,900	42,500	114,000	188,000	27,800	43,500
Spain	56	173	38	117	19	58	38	116	151	464	57	145
Other	68	342	66	216	58	138	101	322	293	1,020	64	212
Total	35,300	62,100	36,500	64,500	32,000	55,700	29,200	50,600	133,000	233,000	31,700	52,500

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

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

Source: U.S. Census Bureau.

TABLE 5
END OF QUARTER FLUORSPAR PRICES

(Dollars per metric ton)

	2012				2013
	1st quarter	2d quarter	3d quarter	4th quarter	1st quarter
Acidspar:					
Chinese, dry basis, cost, insurance, and freight, Gulf port, filtercake	550–650	480–600	480–600	480–600	480–530
Chinese, free on board (f.o.b.) China, wet filtercake	450–500	450–500	420–440	400–415	400–415
Mexican, f.o.b. Tampico, filtercake	400–450	400–450	400–450	400–450	400–450
Mexican, f.o.b. Tampico, arsenic <5 parts per million	540–550	540–550	540–550	540–550	540–550
South African, f.o.b. Durban, filtercake	380–450	380–450	380–450	380–450	380–450
Metspar, Mexican, f.o.b. Tampico	230–270	230–270	230–270	230–270	230–270

Source: Industrial Minerals magazine (London).