

Mineral Industry Surveys

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FLUORSPAR IN THE THIRD QUARTER 2012

Reported fluorspar consumption in the third quarter was about 109,000 metric tons (t), a decrease of 4% compared with that of the previous quarter and about 11% less than the amount consumed in the third quarter of 2011. Stocks ended the third quarter at 171,000 t, an increase of about 10% compared with those of the previous quarter. Fluorspar imports in the third quarter were 139,000 t, slightly lower than those of the previous quarter. Third quarter hydrofluoric acid (HF) imports were 21,700 t, a decrease of about 41% compared with those of the previous quarter.

Industry News

In late May 2012, because of reduced demand and decreasing fluorspar prices, Newspar announced that it was beginning a review of its St. Lawrence Fluorspar project to establish a more precise understanding of the anticipated costs and scope of the project. This review included studying a range of mining and milling. Newspar is a joint venture between Arkema Inc. (Colombes, France) and Canada Fluorspar Inc. (Markham, Ontario, Canada) set up to restart fluorspar mining on the Burin Peninsula on the south coast of Newfoundland in the Province of Newfoundland and Labrador, Canada. In September, Canada Fluorspar announced that the review was expected to be completed late in the fourth quarter of 2012 or early in the first quarter of 2013. A startup date for construction of the project had yet to be determined (Canada Fluorspar Inc., 2012a, b).

Berkh Uul JSC (Ulaanbaatar, Mongolia) completed its 1,700-meter drilling program at the Delgerkhaan fluorspar deposit in Mongolia. The goal of the drilling program was to verify data from prior drilling performed by Russia in the 1960s, enabling the registration of reserves with the Mineral Resources Authority of Mongolia (MRAM). The drilling data would also be used to prepare a National Instrument (NI) 43-101 compliant resource report. Management anticipated that the report would produce a resource estimate in line with the historical drilling (Berkh Uul JSC, [undated]).

Fluormin Plc (London, United Kingdom) announced the sale of its Buffalo Fluorspar project in South Africa for about \$1.38 million. Buffalo had been on care and maintenance status since 2008 with no plans to reopen (Fluormin Plc, 2012).

Fluorochemical News

On September 25, Daimler AG (Stuttgart, Germany) announced that it would not be using the new hydrofluoroolefin refrigerant HFO-1234yf in its vehicle air-conditioning systems. The compound successfully passed numerous tests carried out by international vehicle manufacturers and independent institutions, but Daimler carried out a series of additional tests as part of a new test scenario corresponding to a serious head-on collision. The new tests simulated the severing of the refrigerant line during a crash, which resulted in the refrigerant being dispersed at high pressure near hot components of the vehicles exhaust system. Daimler stated that these tests demonstrated that HFO-1234yf, which is otherwise difficult to ignite under laboratory conditions, may be flammable in a hot engine compartment. As a result, the company said it wished to continue using R-134a in its passenger cars (Daimler AG, 2012).

In response to the Daimler announcement, E.I. du Pont de Nemours and Co. (Wilmington, DE), which codeveloped HFO-1234yf with Honeywell International Inc. (Morristown, NJ), responded by stating that Daimler's statements were not consistent with the findings of extensive industry evaluations. These evaluations included a paper that was coauthored by Daimler and presented in September, which stated, "R1234yf equipped vehicles are as safe as those using R134a— for occupants, mechanics, first emergency responders and fire fighters."

Leading automotive manufacturers and independent testing groups, such as SAE International, conducted multiple industry risk assessments (including those simulating front-end crash conditions) which demonstrated that there were no significant additional flammability risks for HFO-1234yf versus R-134a.

DuPont requested the details of Daimler's data and testing methodology and stated that they would review them as soon as possible to understand if they represented new findings (E.I. du Pont de Nemours and Co., 2012).

HFO-1234yf was developed as a replacement for HFC-134a in response to the European Union's Mobile Air-Conditioning Directive, which requires an automotive refrigerant with a global warming potential (GWP) under 150. HFO-1234yf has a

GWP of 4 compared with HFC-134a, which has a GWP of 1,300. As was the case for HFC-134a, if HFO-1234yf goes into wide production, it would be a major downstream driver of fluorspar consumption.

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TABLE 1
SALIENT FLUORSPAR STATISTICS¹

(Metric tons, unless otherwise specified)

	2011			2012			
	3d quarter	4th quarter	1st quarter– 4th quarter	1st quarter	2d quarter	3d quarter	1st quarter– 3d quarter
Fluorspar:							
Imports for consumption	206,000	213,000	727,000	151,000	141,000	139,000	431,000
Exports	6,650	5,630	24,100	6,040	5,350	6,720	18,100
End of the period stocks, consumer	141,000	162,000	162,000	164,000	156,000	171,000	171,000
Reported consumption	123,000	108,000	456,000 ^r	127,000 ^r	114,000	109,000	350,000
Other compounds, imports for consumption:							
Aluminum fluoride	9,430	12,500	41,200	14,200	11,600	14,500	40,200
Cryolite	3,140	2,440	9,560	2,170	1,800	1,760	5,740
Hydrofluoric acid	33,200	29,800	132,000	35,300	36,500	21,700	93,500

^rRevised.

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
2011:				
3d quarter:				
More than 97% calcium fluoride	112,000	2,990	115,000	113,000
Not more than 97% calcium fluoride	--	8,500 ^r	8,500 ^r	28,800
Total	112,000	11,500 ^r	123,000	141,000
4th quarter:				
More than 97% calcium fluoride	97,000	2,990	100,000	145,000
Not more than 97% calcium fluoride	--	8,400 ^r	8,400 ^r	17,500
Total	97,000	11,400 ^r	108,000	162,000
Grand total	412,000	44,000 ^r	456,000 ^r	162,000
2012:				
1st quarter:				
More than 97% calcium fluoride	115,000	2,990	118,000	142,000
Not more than 97% calcium fluoride	--	8,170 ^r	8,170 ^r	21,700
Total	115,000	11,200 ^r	127,000 ^r	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 ^r	11,500 ^r	16,400
Total	99,700	14,500 ^r	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
Grand total	313,000	36,900	350,000	171,000

^rRevised. -- 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}

	2011				2012							
	3d quarter		4th quarter		1st quarter		2d quarter		3d quarter		1st quarter-3d quarter	
	Quantity (metric tons)	Value (thousands)	Quantity (metric tons)	Value (thousands)	Quantity (metric tons)	Value (thousands)	Quantity (metric tons)	Value (thousands)	Quantity (metric tons)	Value (thousands)	Quantity (metric tons)	Value (thousands)
Containing more than 97% calcium fluoride:												
China	27,600	\$16,900	40,300	\$20,300	28,400	\$17,800	3,740	\$1,850	31,200	\$15,000	63,400	\$34,700
Mexico	121,000	17,400	128,000	19,900	64,500	17,300	85,300	20,400	71,800	14,700	222,000	52,400
South Africa	17,200	5,420	--	--	21,000	5,670	12,100	3,280	--	--	33,100	8,950
United Kingdom	414	49	4	15	2	7	2	7	81	44	85	58
Other	--	--	--	--	17	18	12,000	4,440	--	--	12,100	4,460
Total	166,000	39,800	169,000	40,200	114,000	40,800	113,000	29,900	103,000	29,800	330,000	101,000
Containing not more than 97% calcium fluoride:												
Mexico	40,200	4,130	44,600	4,350	36,400	3,830	27,900	2,750	35,700	3,410	100,000	9,990
Other	--	--	--	--	428	48	--	--	--	--	428	48
Total	40,200	4,130	44,600	4,350	36,900	3,880	27,900	2,750	35,700	3,410	100,000	10,000
Grand total	206,000	44,000	213,000	44,600	151,000	44,700	141,000	32,700	139,000	33,200	431,000	111,000

-- 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

	2011				2012							
	3d quarter		4th quarter		1st quarter		2d quarter		3d quarter		1st quarter–3d quarter	
	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	5,860	\$14,200	2,640	\$7,400	4,560	\$11,700	3,220	\$9,530	1,020	\$3,250	8,800	\$24,500
China	1,010	1,770	1,400	2,260	1,080	1,570	1,980	2,860	1,110	1,580	4,180	6,010
Germany	69	141	66	162	87	198	37	122	18	49	142	369
Japan	212	501	335	813	230	549	316	753	241	608	787	1,910
Mexico	25,900	37,200	25,300	39,600	29,200	47,500	30,800	50,900	19,200	32,200	79,300	131,000
Other	205	469	108	348	124	515	104	333	77	196	305	1,040
Total	33,200	54,200	29,800	50,600	35,300	62,100	36,500	64,500	21,700	37,900	93,500	165,000

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)

	2011		2012		
	3d quarter	4th quarter	1st quarter	2d quarter	3d quarter
Acidspar:					
Chinese, dry basis, cost, insurance, and freight, Gulf port, filtercake	550–650	550–650	550–650	480–600	480–600
Chinese, free on board (f.o.b.) China, wet filtercake	500–600	450–500	450–500	450–500	420–440
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	500–550	540–550	540–550	540–550	540–550
South African, f.o.b. Durban, filtercake	330–335	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).