

# Mineral Industry Surveys

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## For information, contact:

M. Michael Miller, Fluorspar Commodity Specialist  
U.S. Geological Survey  
989 National Center  
Reston, VA 20192  
Telephone: (703) 648-7716, Fax: (703) 648-7757  
E-mail: mmiller1@usgs.gov

Martha L. Jackson (Data)  
Telephone: (703) 648-7944  
Fax: (703) 648-7975  
E-mail: mjackson@usgs.gov

**Internet:** <http://minerals.usgs.gov/minerals>

## FLUORSPAR IN THE FOURTH QUARTER 2009

Reported fluorspar consumption in the fourth quarter was 97,900 metric tons (t), a decrease of 14% compared with the revised figure of the previous quarter and nearly 3% less than that consumed in the fourth quarter of 2008. Fourth quarter stocks increased by 5% compared with those of the previous quarter and were about 10% lower than those of the fourth quarter of 2008.

According to yearend totals for 2009, reported fluorspar consumption decreased by 108,000 t, or about 21%, compared with that of 2008. The data are not directly comparable, however, because a significant portion of the decrease was the result of the closure of a Texas aluminum fluoride (AlF<sub>3</sub>) plant in the fall of 2008.

End-of-fourth-quarter-2009 acidspars prices were unchanged from those of the previous quarter at—China, dry basis, c.i.f. U.S. Gulf of Mexico port, \$350 to \$380 per metric ton; Mexico, free on board (f.o.b.) Tampico, \$300 to \$360 per ton for low-arsenic acidspars and \$260 to \$290 per ton for regular acidspars; and South Africa, f.o.b. Durban, \$250 to \$300 per ton (Industrial Minerals, 2010).

Note: in order to avoid disclosing company proprietary data, consumption of acid-grade fluorspar (acidspars) for hydrofluoric acid is now included under the “Other uses or products” heading in table 2.

## Trade

In December 2009, the Dispute Management Body of the World Trade Organization established a single panel to examine complaints by the European Union, Mexico, and the United States concerning China’s export restrictions on raw materials (including fluorspar). In November, China rejected requests made by the three petitioners to establish the panel (World Trade Organization, 2009). (See Fluorspar in the Second Quarter 2009 and Fluorspar in the Third Quarter 2009 for more information on China’s restrictions and WTO regulations.)

## Industry News

Development work by Hastie Mining Co. continued on the Klondike II Mine project in Livingston, KY. The tailings pond has been completed and work began on opening access to the

vein orebody. It was expected that the orebody would be reached by late summer 2010. The vein is about 7.5 meters (25 feet) wide at a depth of about 61 meters (200 feet), which will allow surface mining in the initial stages of production (Boyce Moody, III, Moody Minerals Co., oral commun., March 5, 2010).

Kenya Fluorspar Co. Ltd. reported that it was optimistic that mining would resume at its fluorspar mine in Kerio Valley, Kenya, in June 2010. The company mothballed its mine in March 2009 when export markets dried up and fluorspar prices plummeted because of the world recession (Daily Nation, 2010). Kenya Fluorspar was one of several fluorspar mines in Africa that shut down during 2009. Okorusu Fluorspar (Pty.) Ltd.’s mine in Namibia reopened in late 2009, but Sallies Ltd.’s Witkop Mine in South Africa remained closed.

Sephaku Holdings Ltd. (South Africa) completed a definitive feasibility study on its proposed Nokeng Fluorspar Mine in South Africa’s Gauteng Province. The study called for the development of two separate deposits—the Outwash Fan (formerly described as Naauwpoort/Kromdraai) and the Plattekop deposits—both of which are in the vicinity of Vergenoeg Mining Co. (Pty.) Ltd.’s fluorspar mine. The proposed mine complex would include an open pit mine, a 130,000-metric-ton-per-year flotation mill, tailings disposal facility, and associated infrastructure and services. Ore production was scheduled to begin in the spring of 2012 (Swanepoel, 2009).

At the same time as the WTO is investigating complaints against China’s fluorspar export restrictions, China announced plans to restrict future production of fluorspar. Citing concerns over decreasing reserves and environmental pollution, Chinese authorities have been rejecting new exploration and production licenses for fluorspar. Additional actions included increasing the resource tax for fluorspar production to 15% and, as with many other industries, the Government was continuing its efforts to close down small and inefficient fluorspar producers. Finally, the Chinese Government has reportedly abolished the export quota for fluorspar for 2010, since little or no bidding for quota volumes has taken place (Globe Metals & Mining, 2010; Russell, 2010).

## Fluorochemical news

The INEOS Group (United Kingdom) announced that it had agreed to sell its fluorochemical business, Ineos Fluor, to Mexichem S.A.B. de C.V. (Mexico). The deal included the fluorochemical assets and businesses in Asia, Europe, and North America. Mexichem's fluorine division, Mexichem Fluor, produces fluorspar and HF from operations in Mexico and is the leading vertically integrated producer of HF in the world (INEOS Fluor Holdings Ltd., 2010). The deal did not include the fluorspar mining company Glebe Mines Ltd. (United Kingdom) acquired by INEOS in 2007. Glebe Mines supplies acid-grade fluorspar to the INEOS Fluor HF plant at Runcorn (Cheshire, United Kingdom). In 2009, Glebe Mines received permission from the National Park Authority for a new fluorspar mine at Tearsall, near Wensley. It is unknown what will happen when current supply contracts between Glebe Mines and the Runcorn facility expire (Dixon, 2010)

The Federal Supreme Court of Switzerland made a final ruling on the contract dispute between Honeywell International Inc. (United States) and Sallies Ltd. (South Africa). The court ordered Sallies to pay the initial fine of \$1.2 million (plus interest) to Honeywell International, as imposed by the International Chamber of Commerce International Court of Arbitration in its judgment of April 2009. Sallies had appealed the judgment in May 2009 (Swanepoel, 2010).

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

(Metric tons, unless otherwise specified)

	2008		2009			
	Fourth quarter	First quarter	Second quarter	Third quarter	Fourth quarter	Total or average
Imports for consumption:						
Quantity	167,000	134,000	90,200	96,000	154,000	475,000
Average value per ton, c.i.f. U.S. port, metallurgical grade	\$108	\$191	\$109	\$98	\$97	\$109
Exports	5,470	2,110	2,440	4,850	4,720	14,100
End of quarter stocks, consumer	115,000	138,000	96,100	99,500 <sup>r</sup>	104,000	XX
Imports for consumption of hydrofluoric acid	30,600	29,600	23,300	32,200	28,900	114,000
Imports for consumption of cryolite	1,050	462	319	797	1,250	2,830
Quarterly reported fluorspar consumption	101,000	89,800	97,700	114,000 <sup>r</sup>	97,900	400,000

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

<sup>1</sup>Data 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 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	W	3,630	89,800	93,500	94,300
Not more than 97% calcium fluoride	--	7,170	--	7,170	21,200
Total	W	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	W	2,220	84,100	86,300	120,000
Not more than 97% calcium fluoride	--	3,440	--	3,440	18,100
Total	W	5,660	84,100	89,800	138,000
Second quarter:					
More than 97% calcium fluoride	W	2,220	91,500	93,700	81,100
Not more than 97% calcium fluoride	--	4,050	--	4,050	15,000
Total	W	6,270	91,500	97,700	96,100
Third quarter:					
More than 97% calcium fluoride	W	2,220	106,000	108,000	85,600
Not more than 97% calcium fluoride	--	6,530 <sup>r</sup>	--	6,530 <sup>r</sup>	13,800 <sup>r</sup>
Total	W	8,750 <sup>r</sup>	106,000	114,000 <sup>r</sup>	99,500 <sup>r</sup>
Fourth quarter:					
More than 97% calcium fluoride	W	2,220	90,100	92,300	88,700
Not more than 97% calcium fluoride	--	3,620	2,030	5,650	15,800
Total	W	5,840	92,100	97,900	104,000
Grand total	W	26,500	373,000	400,000	XX

<sup>r</sup>Revised. W Withheld to avoid disclosing company proprietary data; included in "Other uses or products." 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 (2008).

<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									
	Fourth quarter		First quarter		Second quarter		Third quarter		Fourth quarter		Year	
	Quantity (metric tons)	Value (thousands)										
Containing more than 97% calcium fluoride:												
China	58,600	\$25,000	41,700	\$17,400	325	\$41	11,700	\$3,690	13,600	\$3,190	67,300	\$24,300
Mexico	64,400	10,000	55,800	11,900	58,500	10,300	51,100	8,520	94,300	15,400	260,000	46,200
Mongolia	5,500	2,100	--	--	--	--	9,510	3,380	19,100	5,210	28,600	8,590
South Africa	27,200	8,600	32,100	9,470	11,200	4,140 <sup>r</sup>	9,900	3,520	7,660	2,000	60,800	19,100
United Kingdom	40	9	2	4	88	4	484	57	2	5	576	70
Total	156,000	45,700	130,000	38,800	70,100	14,500 <sup>r</sup>	82,700	19,200	135,000	25,800	417,000	98,300
Containing not more than 97% calcium fluoride:												
Mexico	11,200	1,220	4,790	913	20,100	2,190	13,100	1,280	19,300	1,880	57,300	6,260
Namibia	283	26	--	--	--	--	203	24	--	--	203	24
Other	--	--	--	--	--	--	1	5	--	--	1	5
Total	11,500	1,250	4,790	913	20,100	2,190	13,300	1,310	19,300	1,880	57,500	6,290
Grand total	167,000	46,900	134,000	39,700	90,200	16,700 <sup>r</sup>	96,000	20,500	154,000	27,700	475,000	105,000

<sup>r</sup>Revised. -- 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.

Source: U.S. Census Bureau.

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

	2008		2009									
	Fourth quarter		First quarter		Second quarter		Third quarter		Fourth quarter		Year	
	Quantity (metric tons)	Value <sup>2</sup> (thousands)										
Canada	4,710	\$11,600	3,670	\$11,700	2,550	\$9,420	2,480	\$9,350	2,330	\$9,030	11,000	\$39,500
China	691	1,020	679	854	642	857	1,580	1,540	1,210	1,110	4,110	4,360
Germany	75	223	115	373	91	296	96	272	101	304	403	1,250
Japan	329	673	138	324	67	122	169	126	185	427	559	999
Mexico	24,700	28,200	24,900	26,700	19,900	23,000	27,800	33,000	25,000	31,300	97,600	114,000
Other	104	266	65	110	45	85	73	314	97	262	280	771
Total	30,600	42,000	29,600	40,100	23,300	33,800	32,200	44,600	28,900	42,500	114,000	161,000

<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.