

Mineral Industry Surveys

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FLUORSPAR IN THE SECOND QUARTER 2023

Fluorspar imports in the second quarter of 2023 were 106,000 metric tons (t), 90,100 t of which were acid grade and 15,700 t of which were metallurgical grade (fig. 1, table 1). In terms of quantity, acid-grade imports increased by 23% compared with imports in the second quarter of 2022 and by 17% compared with those in the previous quarter. The leading sources of acid-grade imports were, in descending order of quantity, Mexico (69%), South Africa (18%), and China (13%). Imports of metallurgical-grade fluorspar decreased by 53% compared with imports in the second quarter of 2022 but increased by 93% compared with those in the previous quarter. The leading sources of metallurgical-grade imports were Mexico (57%), China (35%), and South Africa (7%) (table 2).

In the second quarter of 2023, imports of other fluorine-containing materials produced directly from fluorspar were 24,200 t for hydrofluoric acid, 8,210 t for cryolite, and 6,020 t for aluminum fluoride (table 1). Mexico was the leading supplier of hydrofluoric acid, accounting for 88% of imports (table 3). Exports of acid- and metallurgical-grade fluorspar, aluminum fluoride, and cryolite were likely re-exports as there is no domestic production (table 1).

In the second quarter of 2023, the quarterly average unit value of acid-grade imports was \$433 per metric ton, an increase of 13% compared with the 2022 annual average unit value of \$383 per metric ton (table 2). The quarterly average unit value of acid-grade imports from Mexico was \$426, an 18% increase compared with the annual average unit value of \$362 in 2022. The quarterly average unit value of acid-grade imports from South Africa was \$446 per metric ton, an increase of 29% compared with the annual average import value of \$347 in 2022. The quarterly average unit value of acid-grade imports from China was \$445 per metric ton, a decrease of 13% compared with the 2022 annual average unit value of \$511 per metric ton.

The quarterly average unit value of metallurgical-grade imports was \$356 per metric ton, a 60% increase compared with the 2022 annual average unit value of \$223 per metric ton (table 2). The quarterly average unit value of metallurgical-grade imports from Mexico was \$110, essentially unchanged compared with the annual average unit value of \$109 in 2022. The quarterly average unit value of metallurgical-grade

imports from China was \$670 per metric ton, a 17% increase compared with \$571 in 2022. The quarterly average unit value of metallurgical-grade imports from South Africa was \$790 per metric ton, a 21% increase compared with \$652 in 2022.

Mining and Exploration News

In June, Fluorspar Holdings PTE Ltd. purchased the fluorspar mine and assets of Canada Fluorspar, Inc. The mine in St. Lawrence, Newfoundland and Labrador, Canada, was idled in February 2022 and subsequently placed under the care of a court-appointed monitor following the insolvency of Canada Fluorspar. The new owner, a subsidiary of African Minerals Exploration & Development Funds (which also owns a fluorspar mine in South Africa), anticipated reopening the mine by November 2023 (Roberts, 2023).

References Cited

Roberts, Terry, 2023, New St. Lawrence fluorspar mine owner eyes November for long-awaited restart: St. John's, Newfoundland, and Labrador, Canada, CBC/Radio-Canada, June 13. (Accessed September 20, 2023, at <https://www.cbc.ca/news/canada/newfoundland-labrador/fluorspar-restart-sale-1.6874750>.)

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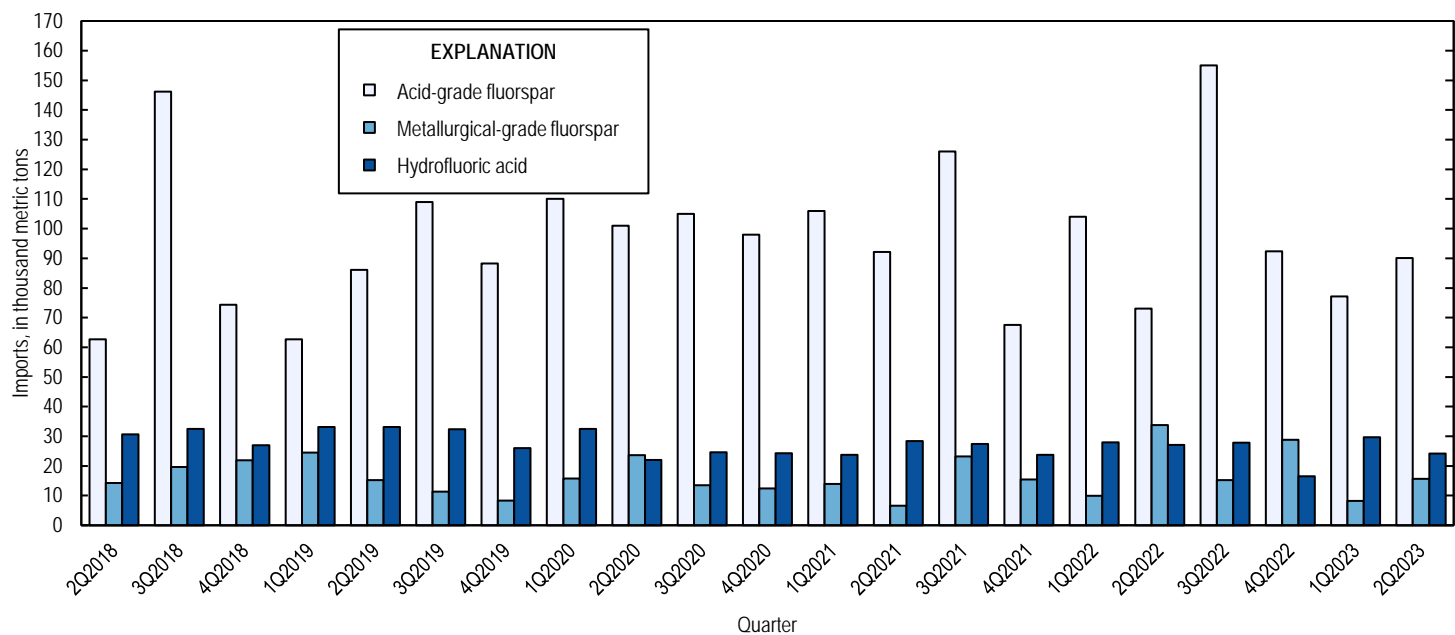


Figure 1. Acid-grade fluorspar, metallurgical-grade fluorspar, and hydrofluoric acid imports from the second quarter of 2018 through the second quarter of 2023. Source: U.S. Census Bureau and U.S. Geological Survey.

TABLE 1
SALIENT FLUORSPAR STATISTICS¹

(Metric tons)

	2022				2023	
	2d quarter	3d quarter	4th quarter	1st quarter– 4th quarter	1st quarter	2d quarter
Production, fluorspar	--	--	--	--	--	--
Imports for consumption: ²						
Fluorspar:						
Acid grade, more than 97% calcium fluoride	73,100	155,000	106,000 ^r	438,000 ^r	77,200	90,100
Metallurgical grade, less than 97% calcium fluoride	33,800	15,200	28,800	87,800	8,170	15,700
Total	107,000	170,000	135,000 ^r	526,000 ^r	85,400	106,000
Hydrofluoric acid	27,100	27,800	16,500	99,400	29,700	24,200
Aluminum fluoride	6,450	5,120	5,010	21,200	6,930	6,020
Cryolite	8,640	6,640	6,470	27,800	7,820	8,210
Exports: ²						
Fluorspar:						
Acid grade, more than 97% calcium fluoride	5,650	3,800	3,260	15,000	3,510	2,910
Metallurgical grade, less than 97% calcium fluoride	2,920	2,050	1,610	9,000	1,400	2,020
Total	8,570	5,850	4,880	24,000	4,910	4,930
Hydrofluoric acid	2,010 ^r	2,640 ^r	2,950	9,890 ^r	1,620	2,750
Aluminum fluoride	10	1	20	31	3	7
Cryolite	2,520 ^r	4,230	1,280	11,100 ^r	1,000	1,030
Apparent consumption, fluorspar: ³						
Acid grade, more than 97% calcium fluoride	67,500	151,000	102,000 ^r	423,000 ^r	73,700	87,200
Metallurgical grade, less than 97% calcium fluoride	30,900	13,200	27,200	78,800	6,770	13,700
Total	98,400	164,000	130,000 ^r	502,000 ^r	80,400	101,000

^rRevised. -- Zero.

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

²Source: U.S. Census Bureau; may be adjusted by U.S. Geological Survey.

³Imports minus exports.

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

	2022								2023			
	2d quarter		3d quarter		4th quarter		1st quarter–4th quarter		1st quarter		2d 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)
Acid grade, more than 97% calcium fluoride:												
Canada	--	--	11	\$3	--	--	12	\$6	2	\$7	145	\$77
China	27,600	\$16,300	43,600	21,600	21,200	\$9,340	92,500	47,300	1,330	658	11,600	5,170
Germany	--	--	1	3	64	50	65	53	73	42	74	43
Hong Kong	--	--	142	88	--	--	276	160	--	--	--	--
Japan	3,580	580	249	131	--	--	4,460	1,070	26	17	--	--
Mexico	42,000	15,200	72,100	27,300	64,200 ^r	25,300 ^r	240,000 ^r	87,000 ^r	52,100	21,200	62,000	26,400
Mongolia	--	--	--	--	--	--	--	--	--	--	145	77
South Africa	--	--	16,000	5,770	--	--	34,200	11,900	--	--	16,100	7,190
Spain	--	--	43	42	--	--	43	42	--	--	--	--
United Kingdom	4	14	29	16	21	12	57	51	--	--	1	4
Vietnam	--	--	22,700	7,620 ^e	20,200	6,270 ^e	65,900	20,200 ^e	23,600	7,330 ^e	--	--
Total	73,100	32,100	155,000	62,600 ^e	106,000 ^r	40,900 ^{r, e}	438,000 ^r	168,000 ^{r, e}	77,200	29,300 ^e	90,100	39,000
Metallurgical grade, less than 97% calcium fluoride:												
Canada	--	--	8	5	--	--	8	5	--	--	43	16
China	1,500	878	3,020	1,870	8,120	4,480	12,900	7,370	3,140	1,820	5,530	3,700
Mexico	32,100	3,160	9,440	1,090	15,500	1,890	66,600	7,260	4,010	521	9,040	995
Mongolia	249	147	--	--	--	--	249	147	--	--	--	--
Pakistan	--	--	--	--	3,850	2,050	3,930	2,110	--	--	--	--
South Africa	--	--	2,730	1,820	1,330	838	4,070	2,650	1,020	702	1,130	893
United Kingdom	1	5	2	6	1	4	9	18	--	--	--	--
Total	33,800	4,190	15,200	4,790	28,800	9,260	87,800	19,600	8,170	3,040	15,700	5,610
Grand total	107,000	36,300	170,000	67,400 ^e	135,000 ^r	50,200 ^{r, e}	526,000 ^r	187,000 ^{r, e}	85,400	32,300 ^e	106,000	44,600

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.

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

Source: U.S. Census Bureau; may be adjusted by U.S. Geological Survey.

TABLE 3
U.S. IMPORTS FOR CONSUMPTION OF HYDROFLUORIC ACID^{1,2}

	2022								2023			
	2d quarter		3d quarter		4th quarter		1st quarter–4th quarter		1st quarter		2d 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)
Belgium	--	--	--	--	--	--	--	--	(3)	\$19	(3)	\$15
Canada	104	\$220	86	\$184	19	\$60	329	\$693	135	232	37	406
China	--	--	165	273	535	715	757	1,080	236	327	430	535
Germany	238	590	14	22	265	898	628	1,790	371	1,060	145	443
India	18	40	79	231	--	--	98	271	--	--	40	66
Japan	724	1,460	524	1,300	422	1,210	2,060	4,820	517	1,520	363	1,130
Korea, Republic of	552	966	898	1,450	493	1,300	2,140	4,330	154	390	216	548
Mexico	24,100	45,000	24,100	50,000	13,700	34,000	87,900	177,000	26,500	54,900	21,400	57,300
Singapore	118	456	128	516	97	426	422	1,690	32	133	145	558
Spain	386	976	724	1,780	425	820	1,870	4,220	651	1,270	616	1,230
Taiwan	860	2,780	934	2,720	423	1,250	2,830	8,850	868	2,530	520	1,310
United Kingdom	--	--	229	313	151	237	380	549	265	378	294	472
Total	27,100	52,500	27,800	58,800	16,500	40,900	99,400	205,000	29,700	62,700	24,200	64,100

-- Zero.

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

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

³Less than ½ unit.

Source: U.S. Census Bureau.