FLUORSPAR

(Data in thousand metric tons unless otherwise specified)

Domestic Production and Use: Significant U.S. fluorspar (calcium fluoride, CaF_2) mine production has not been reported since 1995. In 2025, one company likely processed and sold fluorspar from stockpiles produced as a byproduct of its limestone quarrying operation in Cave-In-Rock, IL; however, production data were not available. A second company continued construction of a fluorspar mine and lumps-processing plant in Utah, with completion anticipated by yearend. Excluding sales from stockpiled fluorspar, the United States was 100% net import reliant for fluorspar. U.S. fluorspar consumption was satisfied mostly by imports. Domestically, CaF_2 was used in the production of anhydrous hydrogen fluoride (HF) in Louisiana and Texas and was by far the leading use for acid-grade fluorspar. Aqueous HF is the primary feedstock for the manufacture of virtually all fluorine-bearing chemicals, particularly refrigerants and fluoropolymers, and chemicals used in the processing of primary aluminum and uranium. HF was also used as a catalyst in the petrochemical industry and essential in the cleaning and etching process during semiconductor manufacturing. Other uses of fluorspar were in cement production, in enamels, as a flux in steelmaking, in glass manufacture, in iron and steel casting, and in welding rod coatings.

The U.S. Department of Energy continued to produce aqueous HF as a byproduct of the conversion of depleted uranium hexafluoride to depleted uranium oxide at plants in Paducah, KY, and Portsmouth, OH; the aqueous HF was sold into the commercial market. One company in Aurora, NC, produced HF from fluorosilicic acid (FSA). In 2025, an estimated 45,000 tons of FSA, equivalent to about 73,000 tons of fluorspar grading 100% CaF_2, was recovered from three phosphoric acid plants that processed phosphate rock.

Salient Statistics—United States:	**2021**	**2022**	**2023**	**2024**	**2025[e]**
Production:					
Finished, metallurgical grade	NA	NA	NA	NA	NA
Fluorosilicic acid from phosphate rock	40	43	43	45	45
Imports for consumption:					
Acid grade	391	448	378	372	360
Metallurgical grade	59	84	34	31	20
Total fluorspar imports	451	532	412	403	380
Hydrofluoric acid	103	99	87	69	76
Aluminum fluoride	28	21	25	22	20
Cryolite	42	28	32	22	21
Exports, fluorspar, all grades[1]	15	24	20	14	7
Consumption, apparent[2]	436	508	392	390	370
Price, average unit value of imports, cost, insurance, and freight, dollars per metric ton:					
Acid grade	322	387	428	464	470
Metallurgical grade	151	206	338	336	400
Employment, mine, number[e]	17	15	16	15	15
Net import reliance[2] as a percentage of apparent consumption	100	100	100	100	100

Recycling: Synthetic fluorspar may be produced from neutralization of waste in the enrichment of uranium, petroleum alkylation, and stainless-steel pickling; however, undesirable impurities constrain its use. Primary aluminum producers recycle HF and fluorides from smelting operations.

Import Sources (2021–24):[3] Mexico, 64%; Vietnam, 12%; China,[4] 10%; South Africa, 9%; and other, 5%.

Tariff: Item	**Number**	**Normal Trade Relations 12–31–25**
Metallurgical grade (97% or less CaF_2)	2529.21.0000	Free.
Acid grade (more than 97% CaF_2)	2529.22.0000	Free.
Natural cryolite	2530.90.1000	Free.
Hydrogen fluoride (hydrofluoric acid)	2811.11.0000	Free.
Aluminum fluoride	2826.12.0000	Free.
Sodium hexafluoroaluminate (synthetic cryolite)	2826.30.0000	Free.

Depletion Allowance: 22% (domestic), 14% (foreign).

Government Stockpile: None.

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Events, Trends, and Issues: Global mine production of fluorspar was estimated to have decreased by 1% to 10 million tons in 2025. The supply of fluorspar in China continued to be constrained by rectification measures on fluorspar mining, with some mines suspending production for safety inspections. As such, China's imports of fluorspar in the first half of 2025 increased by 48% to 856,000 tons compared with those in the same period in 2024, with 86% of imports sourced from Mongolia.

In Canada, a fluorspar mine that was previously idled in 2022, restarted production and made its first shipment of acid-grade fluorspar at the end of August. The company anticipated ramping up production to 200,000 tons per year. In China, a fluorspar mine in Xinjiang began operations in September, with a projected annual production of 300,000 tons of acid-grade fluorspar. Several other fluorspar mines were in development or in the process of reopening in Australia, Canada, Germany, Italy, Kenya, Mongolia, Mozambique, and the United States.

World Mine Production and Reserves: Significant revisions were made to the 2024 production for Germany, Iran, Mexico, Mongolia, South Africa, and Vietnam based on company and Government reports. Reserves for China were revised based on Government reports.

	Mine production[e]		Reserves[5]
	2024	2025	
United States	NA	NA	NA
Brazil	85	100	2,500
China	6,000	6,000	110,000
Germany	35	35	NA
Iran	53	70	7,600
Mexico	[6]1,510	1,500	68,000
Mongolia	1,430	1,500	34,000
Pakistan	60	50	NA
South Africa	447	410	41,000
Spain	138	140	15,000
Tajikistan	15	15	NA
Thailand	75	55	3,600
Vietnam	146	160	16,000
Other countries	316	200	32,000
World total (rounded)	10,300	10,000	330,000

World Resources:[5, 7] Large quantities of fluorine are present in phosphate rock. Current U.S. reserves of phosphate rock are estimated to be 1 billion tons, containing about 72 million tons of 100% fluorspar equivalent assuming an average fluorine content of 3.5% in the phosphate rock. World reserves of phosphate rock are estimated to be 74 billion tons, containing about 5 billion tons of 100% fluorspar equivalent.

Substitutes: FSA has been used as an alternative to fluorspar in the production of AlF_3 and HF. Aluminum smelting dross, borax, calcium chloride, iron oxides, manganese ore, silica sand, and titanium dioxide have been used as substitutes for fluorspar fluxes.

[e]Estimated. NA Not available.

[1]Includes data for the following Schedule B numbers: 2529.21.0000 and 2529.22.0000.

[2]Defined as total fluorspar imports – exports.

[3]Includes data for the following Harmonized Tariff Schedule of the United States codes: 2529.21.0000 and 2529.22.0000.

[4]Includes Hong Kong.

[5]See Appendix C for resource and reserve definitions and information concerning data sources.

[6]Reported.

[7]Measured as 100% CaF_2.