FELDSPAR AND NEPHELINE SYENITE

(Data in thousand metric tons unless otherwise noted)

Domestic Production and Use: U.S. feldspar production in 2022 had an estimated value of $45 million. Feldspar was produced by seven companies in California, Idaho, North Carolina, Oklahoma, South Dakota, and Virginia. Feldspar processors reported joint product recovery of mica and silica sand. One company produced nepheline syenite in the United States as a flux, but production data were not available.

Feldspar is ground to about 20 mesh for glassmaking and to 200 mesh or finer for most ceramic and filler applications. It was estimated that domestically produced feldspar was transported by ship, rail, or truck to at least 30 States and to foreign destinations, including Canada and Mexico. In pottery and glass, feldspar and nepheline syenite function as a flux. Glass manufacturing accounted for an estimated 47% of the 2022 end-use distribution of domestic feldspar and nepheline, and ceramic tile, pottery, and other uses, accounted for the remaining 53%.

Salient Statistics—United States:	**2018**	**2019**	**2020**	**2021**	**2022[e]**
Production, feldspar, marketable[1]	550	450	430	340	420
Imports for consumption:					
Feldspar	181	64	43	169	270
Nepheline syenite	1,070	508	503	529	500
Exports, feldspar	4	4	3	4	3
Consumption, apparent:[1, 2]					
Feldspar only	730	510	470	510	690
Feldspar and nepheline syenite	1,800	1,000	970	1,000	1,200
Price, average unit value, dollars per metric ton:					
Feldspar only, marketable production	97	107	108	110	110
Nepheline syenite, imports	76	156	163	164	180
Employment, mine, preparation plant, and office, number[e]	240	240	240	220	220
Net import reliance[3] as a percentage of apparent consumption:					
Feldspar	24	12	8	33	39
Nepheline syenite	>95	>95	>95	>95	>95

Recycling: Feldspar and nepheline syenite are not recycled by producers; however, glass container producers use cullet (recycled container glass), thereby reducing feldspar and nepheline syenite consumption.

Import Sources (2018–21): Feldspar: Turkey, 94%; Mexico, 4%; and other, 2%. Nepheline syenite: Canada, 100%.

Tariff: Item	**Number**	**Normal Trade Relations 12–31–22**
Feldspar	2529.10.0000	Free.
Nepheline syenite	2529.30.0010	Free.

Depletion Allowance: 14% (domestic and foreign).

Government Stockpile: None.

Events, Trends, and Issues: In 2022, estimated domestic production and sales of feldspar increased by about 24%, and the average unit value of sales was essentially unchanged compared with that in 2021. Estimated imports of feldspar increased by 60% compared with those in 2021, whereas nepheline syenite imports decreased by an estimated 5% in 2022 from those in 2021. Imports of nepheline syenite reported by the U.S. Census Bureau in 2018 were unusually high.

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In the United States, residential construction, in which feldspar is a raw material commonly used in the manufacture of plate glass, ceramic tiles and sanitaryware, and insulation, was unchanged during the first 10 months of 2022 compared with that in the same period in 2021. Glass—including beverage containers (more than one-half of the feldspar consumed by the glass industry), plate glass, and fiberglass insulation for housing and building construction—accounted for nearly one-half of all end uses of feldspar in the United States. Production and sales of feldspar were expected to increase into 2023, owing in part to an increase in demand for automotive glass manufacturing and for solar glass, used in the production of solar panels.

A company based in Canada continued development of a feldspar-quartz-kaolin project in Idaho that contains high-grade potassium feldspar. Production was expected to be about 30,000 tons per year of potassium feldspar during a 25-year mine life. For several years, the operation has produced a feldspathic sand product with low-iron and low-trace-element concentrations from old mine tailings, which was sold to ceramic tile producers.

World Mine Production and Reserves:[4] Reserves for China were revised based on Government reports.

	Mine production		Reserves[5]
	2021	2022[e]	
United States[1]	340	420	NA
Brazil (beneficiated, marketable)	491	630	150,000
China	[e]2,500	2,400	130,000
Czechia	[e]450	460	22,000
India	[e]6,600	6,600	320,000
Iran	[e]2,000	2,000	630,000
Italy	2,200	2,200	NA
Korea, Republic of	987	1,000	180,000
Mexico	356	320	NA
Pakistan	[e]440	360	NA
Saudi Arabia	549	820	NA
Spain (includes pegmatites)	[e]800	800	NA
Thailand	[e]1,200	1,300	220,000
Turkey	6,100	6,200	240,000
Other countries	2,610	2,600	NA
World total (rounded)	27,600	28,000	Large

World Resources:[5] Identified and undiscovered resources of feldspar are more than adequate to meet anticipated world demand. Quantitative data on resources of feldspar existing in feldspathic sands, granites, and pegmatites generally have not been compiled. Ample geologic evidence indicates that resources are large, although not always conveniently accessible to the principal centers of consumption.

Substitutes: Imported nepheline syenite was the major alternative material for feldspar. Feldspar can be replaced in some of its end uses by clays, electric furnace slag, feldspar-silica mixtures, pyrophyllite, spodumene, or talc.

[e]Estimated. NA Not available.

[1]Rounded to two significant digits to avoid disclosing company proprietary data.

[2]Defined as production + imports – exports.

[3]Defined as imports – exports.

[4]Feldspar only.

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