

FELDSPAR AND NEPHELINE SYENITE

(Data in thousand metric tons unless otherwise noted)

Domestic Production and Use: U.S. feldspar production in 2015 had an estimated value of \$32 million. The three leading producers mined and processed about 80% of production, with four other companies supplying the remainder. Producing States were North Carolina, Idaho, California, Virginia, Oklahoma, and South Dakota, in descending order of estimated tonnage. Feldspar processors reported coproduct recovery of mica and silica sand. The only nepheline syenite produced in the United States was used in construction applications and is not included in production.

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. The estimated 2015 end-use distribution of domestic feldspar and nepheline syenite was glass, 60%, and ceramic tile, pottery, and other uses, 40%.

Salient Statistics—United States:	2011	2012	2013	2014	2015^e
Production, marketable ¹	580	560	550	530	510
Imports for consumption:					
Feldspar	2	2	4	8	90
Nepheline syenite	394	386	491	503	460
Exports, feldspar	17	13	18	16	18
Consumption, apparent: ¹					
Feldspar only	570	550	540	520	580
Feldspar and nepheline syenite	960	930	1,000	1,000	1,000
Price, average value, feldspar, marketable production, dollars per ton	78	66	73	66	63
Employment, mine, preparation plant, and office, number ^e	400	380	380	370	360
Net import reliance ² as a percentage of apparent consumption:					
Feldspar	E	E	E	E	12
Nepheline syenite	100	100	100	100	100

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 (2011–14): Feldspar: Turkey, 57%; Mexico, 27%; Germany, 7%; India, 5%; and other, 4%. Nepheline syenite: Canada, 99%; and other, 1%.

Tariff: Item	Number	Normal Trade Relations 12–31–15
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 2015, domestic production and sales of feldspar decreased slightly from those of 2014. In Europe, consumption declined, mostly owing to continued sluggishness in the region's construction industry; moderate to strong growth in consumption continued in Asia.

Glass, including beverage containers, plate glass, and fiberglass insulation for housing and building construction, continued to be the leading end use of feldspar in the United States. Most feldspar consumed by the glass industry is for the manufacture of container glass. The glass container industry was moderately stable, although the trend in recent years to import less-expensive containers from China continued to present a challenge to the industry. Additionally, the use of cullet, especially from ongoing growth in post-consumer recycling programs, continued to compete as a substitute for primary raw materials such as feldspar, and decreased the demand for them in the manufacture of glass containers.

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Domestically, residential construction, in which feldspar is a raw material used in the production of glass and ceramic tiles, insulation, and plate glass, increased in 2015. Housing starts and completions rose by about 12% and 10%, respectively, during the first 9 months of 2015 compared with those in the same period in 2014, and increases were expected to continue in 2016. Domestic spending on nonresidential construction, which accounted for about 63% of construction expenditures, and on residential construction increased by about 10% and 12%, respectively, during the first 9 months of 2015 compared with that in the same period in 2014, and was expected to continue to increase in 2016. Consumption of flat glass for residential and commercial construction and window replacement in existing buildings, and fiberglass for thermal insulation continued to increase in 2015 and was expected to continue to increase in line with housing and commercial building construction in the United States through 2016.

Domestic feldspar consumption has been gradually shifting toward glass markets from that of ceramics. A growing segment in the glass industry was solar glass, used in the production of solar panels.

Imports of nepheline syenite, which may be substituted for feldspar in some glass and more commonly in ceramics manufacture applications, decreased by about 8.5% in 2015; virtually all nepheline syenite imports came from Canada.

A company based in Canada proceeded with development of its White Mountain high-purity calcium feldspar (anorthosite) deposit in southwestern Greenland. Results from laboratory testing confirmed alumina recovery to be greater than 90% for possible use in nonmetallurgical applications that require higher purity feldspar, including refractories and ceramics.

World Mine Production and Reserves:³ Reserves for Egypt and Iran were revised based on new Government information.

	Mine production		Reserves ⁴
	2014	2015 ^e	
United States ¹	530	510	NA
Argentina	220	220	NA
Brazil	300	330	320,000
China	2,500	2,500	NA
Czech Republic	420	430	25,000
Egypt	200	300	1,000,000
Germany	200	200	NA
India	1,410	1,500	45,000
Iran	550	600	630,000
Italy	4,700	4,700	NA
Korea, Republic of	340	340	NA
Malaysia	320	320	NA
Poland	400	400	14,000
Spain	600	600	NA
Thailand	1,100	1,500	NA
Turkey	4,600	5,000	240,000
Other countries	1,640	1,700	NA
World total (rounded)	20,000	21,200	Large

World Resources: 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 also can be replaced in some of its end uses by clays, electric furnace slag, feldspar-silica mixtures, pyrophyllite, spodumene, or talc.

^eEstimated. E Net exporter. NA Not available.

¹Rounded to two significant digits to avoid disclosing company proprietary data. Defined as production + imports – exports.

²Defined as imports – exports.

³Feldspar only.

⁴See [Appendix C](#) for resource/reserve definitions and information concerning data sources.