ZEOLITES (NATURAL)

(Data in metric tons unless otherwise specified)

Domestic Production and Use: In 2025, seven companies operated seven zeolite mines in six States and produced an estimated 80,000 tons of natural zeolites. Total production increased by 4% compared with that in 2024. Chabazite was mined in Arizona and clinoptilolite was mined in California, Idaho, New Mexico, Oregon, and Texas. Small quantities of erionite, ferrierite, mordenite, and phillipsite were also likely produced.

An estimated 77,000 tons of natural zeolites were sold in the United States during 2025, 4% more than the sales in 2024. Domestic uses were, in descending order of estimated quantity, animal feed, odor control, unspecified end uses (such as ice melt, soil amendment, and synthetic turf), water purification, pet litter, wastewater treatment, oil and grease absorbent, fertilizer carrier, gas absorbent, aquaculture, desiccant, fungicide or pesticide carrier, and catalyst. Animal feed and odor control accounted for 42% and 15%, respectively, of the domestic sales tonnage.

Salient Statistics—United States:	2021	2022	2023	2024	2025[e]
Production, mine	[e]87,000	77,400	[e]74,300	[e]76,900	80,000
Sales, mill	[e]74,000	79,800	[e]71,900	[e]73,800	77,000
Imports for consumption[e]	<1,000	<1,000	<1,000	<1,000	<1,000
Exports[e]	<1,000	<1,000	<1,000	<1,000	<1,000
Consumption, apparent[1]	74,000	79,800	71,900	73,800	77,000
Price, range of value, dollars per metric ton[e, 2]	50–300	50–300	50–300	50–300	50–300
Employment, mine and mill, number[e, 3]	120	130	130	120	120
Net import reliance[4] as a percentage of apparent consumption	E	E	E	E	E

Recycling: Zeolites used for desiccation, gas absorbance, wastewater treatment, and water purification may be reused after reprocessing of the spent zeolites. Information about the quantity of recycled natural zeolites was unavailable.

Import Sources (2021–24): Comprehensive trade data were not available for natural zeolite minerals because they were imported and exported under a generic Harmonized Tariff Schedule of the United States code and Schedule B number, respectively, that include multiple mineral commodities or under codes for finished products. Nearly all imports and exports were estimated to be synthetic zeolites.

Tariff: Item	Number	Normal Trade Relations 12–31–25
Mineral substances not elsewhere specified or included	2530.90.8050	Free.

Depletion Allowance: 14% (domestic and foreign).

Government Stockpile: None.

Events, Trends, and Issues: Production and sales of natural zeolites have nearly doubled from 1995 through 2025 owing to increased sales for animal feed, odor control, soil amendment, and water purification applications. Domestic production and sales of natural zeolite products have fluctuated in recent years. Natural zeolite sales increased for the second year in a row after reaching a 7-year low in 2023. Sales and production have varied because of competition from clays and synthetic zeolites and a shift from traditional markets, such as pet litter, to newer markets including traction control, soil amendment, and artificial turf infill.

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ZEOLITES (NATURAL)

World Mine Production and Reserves: Many countries either do not report production of natural zeolites, report zeolites as part of a pooled group of mineral commodities often listed as "other," or report production with a delay of 2 to 3 years. In countries that mine large tonnages of zeolite minerals, end uses typically include low-value, high-volume construction applications, such as dimension stone, lightweight aggregate, and pozzolanic cement. As a result, production data for some countries may not be comparable to U.S. production data, which are the quantities of natural zeolites used in high-value applications. Significant revisions to 2024 production for Cuba, Georgia, and Russia were made based on company and Government reports, while New Zealand was removed as a producer for the same reason.

World reserves of natural zeolites have not been estimated. Deposits occur in many countries, but companies rarely publish reserves data. Estimating reserves is further complicated because much of the reported world production includes altered volcanic tuffs with low to moderate concentrations of zeolites that are typically used in high-volume construction applications. Some deposits should, therefore, be excluded from reserves estimates because it is the rock itself and not its zeolite content that makes these deposits valuable.

	Mine production		Reserves[5]
	2024	2025[e]	
United States	[e]76,900	80,000	Two of the leading companies in the United States reported combined reserves of 80 million tons in 2022; total U.S. reserves likely were substantially larger. World data were unavailable, but reserves were estimated to be large.
Chile	[e] 500	240	
China	[e]150,000	150,000	
Cuba	14,900	15,000	
Georgia	243,000	240,000	
Hungary	[e]30,000	31,000	
Indonesia	[e]120,000	120,000	
Jordan	[e]1,000	1,000	
Korea, Republic of	[e]140,000	160,000	
Philippines	6,320	6,300	
Russia	[e]130,000	130,000	
Slovakia	273,000	280,000	
Turkey	57,100	58,000	
World total (rounded)	1,240,000	1,300,000	

World Resources:[5] Recent estimates for domestic and global resources of natural zeolites are not available. Resources of chabazite and clinoptilolite in the United States are sufficient to satisfy foreseeable domestic demand.

Substitutes: For pet litter, zeolites compete with other mineral-based litters, such as those manufactured using bentonite, diatomite, fuller's earth, and sepiolite; organic litters made from shredded corn stalks and paper, straw, and wood shavings; and litters made using silica gel. Diatomite, perlite, pumice, vermiculite, and volcanic tuff compete with natural zeolites as lightweight aggregate. Zeolite desiccants compete against such products as magnesium perchlorate and silica gel. Zeolites compete with bentonite, gypsum, montmorillonite, peat, perlite, silica sand, and vermiculite in various soil amendment applications. Activated carbon, diatomite, or silica sand may substitute for zeolites in water-purification applications. As an oil absorbent, zeolites compete mainly with bentonite, diatomite, fuller's earth, sepiolite, and a variety of polymer and natural organic products. In animal feed, zeolites compete with bentonite, diatomite, fuller's earth, kaolin, silica, and talc as anticaking and flow-control agents.

[e]Estimated. E Net exporter.

[1]Defined as mill sales + imports – exports. Information about industry stocks was unavailable.

[2]Range of ex-works mine and mill unit values for individual natural zeolite operations, based on data reported by U.S. producers and on U.S. Geological Survey estimates. Average unit values per metric ton were an estimated $125 in 2021, $167 in 2022, $157 in 2023, and $200 in 2024. Prices vary with the percentage of zeolite present in the product, the chemical and physical properties of the zeolite mineral(s), particle size, surface modification and (or) activation, and end use.

[3]Excludes administration and offsite office staff. Estimates based on data from the Mine Safety and Health Administration.

[4]Defined as imports – exports.

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