

VERMICULITE

(Data in thousand metric tons unless otherwise noted)

Domestic Production and Use: Two companies with mining and processing facilities in South Carolina and Virginia produced vermiculite concentrate and reported production of approximately 100,000 tons. Most of the vermiculite concentrate was shipped to 17 exfoliating plants in 11 States. The end uses for exfoliated vermiculite were estimated to be agriculture/horticulture, 50%; lightweight concrete aggregates (including cement premixes, concrete, and plaster), 10%; insulation, 5%; and other, 35%.

Salient Statistics—United States:	2011	2012	2013	2014	2015^e
Production ^{e, 1}	100	100	100	100	100
Imports for consumption ^{e, 2}	53	57	36	43	25
Exports ^e	2	2	2	3	2
Consumption, apparent, concentrate ³	150	160	130	140	120
Consumption, reported, exfoliated	62	59	64	63	65
Price, range of value, concentrate, dollars per ton, ex-plant ⁴	115–460	145–525	145–565	140–575	140–580
Employment, number ^e	80	75	70	70	70
Net import reliance ⁵ as a percentage of apparent consumption	30	35	25	30	20

Recycling: Insignificant.

Import Sources (2011–14): South Africa, 35%; Brazil, 35%; China, 28%; and other, 2%.

Tariff: Item	Number	Normal Trade Relations 12–31–15
Vermiculite, perlite and chlorites, unexpanded	2530.10.0000	Free.
Exfoliated vermiculite, expanded clays, foamed slag, and similar expanded materials	6806.20.0000	Free.

Depletion Allowance: 14% (Domestic and foreign).

Government Stockpile: None.

Events, Trends, and Issues: U.S. exports and imports of vermiculite are not collected as a separate category by the U.S. Census Bureau. However, according to an independent industry trade information source, U.S. exports were slightly lower in 2015 than those in 2014. U.S. imports, excluding any material from Canada and Mexico, were estimated to be about 25,000 tons in 2015, significantly lower than those of 2014, especially from South Africa. Coarse-grade vermiculite remained in short supply, and prices were unchanged in 2015.

An Australian company transferred full ownership of its East African Namekara vermiculite mine in Uganda to its financial lenders, releasing it from all debt. The mine remained on care-and-maintenance status, mostly as a result of an oversupply of the medium-to-finer grades in the world market; sluggish market conditions in Europe, its largest market; and transportation and related infrastructure-improvement issues. The Namekara deposit has sufficient resources for more than 50 years of production and is a portion of the larger East African vermiculite project, which has about 55 million tons of inferred resources and is considered to be one of the world's largest deposits.

A company in Turkey, in a joint venture, worked to complete development of the country's first vermiculite mine in Sivas in central Turkey. Small quantities of vermiculite from development activities were sold to customers in Spain, with further sales to be processed through the sales network of a France-based major company that purchased one of the joint-venture companies earlier in the year. With the date of full production not yet determined, first year production is expected to be about 5,000 tons from a total reserve of 7 million tons, of which more than one-half were considered high quality.

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A company in Russia mined vermiculite in the Murmansk Region of northwest Russia and marketed its vermiculite concentrate and exfoliated vermiculite mostly in Russia, as well as in Eastern Europe and Western Europe.

A company in Brazil continued to expand production capacity at its vermiculite mine in central Brazil and to develop another deposit near Brasilia. The new operation, which is planned to begin production in 2016, will bring the company's total production capacity to 200,000 tons per year.

World Mine Production and Reserves: Reserves for Brazil were revised based on new Government information.

	Mine production		Reserves⁶
	<u>2014</u>	<u>2015^e</u>	
United States ^{e, 1}	100	100	25,000
Brazil	70	70	6,300
Bulgaria	18	18	NA
India	10	10	1,700
South Africa	143	160	14,000
Zimbabwe	30	40	NA
Other countries	<u>10</u>	<u>10</u>	<u>NA</u>
World total	381	408	NA

World Resources: Marginal reserves of vermiculite in Colorado, Nevada, North Carolina, Texas, and Wyoming are estimated to be 2 million to 3 million tons. Reserves have been reported in Australia, China, Russia, Uganda, and some other countries, but reserves and resource information comes from many sources, and in most cases, it is not clear whether the numbers refer to vermiculite alone or vermiculite plus host rock and overburden.

Substitutes: Expanded perlite is a substitute for vermiculite in lightweight concrete and plaster. Other more dense but less costly substitutes in these applications are expanded clay, shale, slag, and slate. Alternate materials for loosefill fireproofing insulation include fiberglass, perlite, and slag wool. In agriculture, substitutes include bark and other plant materials, peat, perlite, sawdust, and synthetic soil conditioners.

^eEstimated. NA Not available.

¹Concentrate sold and used by producers. Data are rounded to one significant digit to avoid disclosing company proprietary data.

²Excludes Canada and Mexico.

³Rounded to two significant digits to protect proprietary data.

⁴Source: Mining Engineering.

⁵Defined as imports – exports.

⁶See [Appendix C](#) for resource/reserve definitions and information concerning data sources.