

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 18 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), 20%; insulation, 5%; and other, 25%.

Salient Statistics—United States:	2009	2010	2011	2012	2013^e
Production ^{e, 1}	100	100	100	100	100
Imports for consumption ^{e, 2}	39	29	53	57	42
Exports ^e	3	2	2	2	2
Consumption, apparent, concentrate ³	140	130	150	160	140
Consumption, exfoliated ^e	64	66	64	60	70
Price, range of value, concentrate, dollars per ton, ex-plant ⁴	95–400	100–400	115–460	145–525	150–550
Employment, number ^e	75	80	80	75	85
Net import reliance ⁵ as a percentage of apparent consumption ⁶	30	20	30	35	30

Recycling: Insignificant.

Import Sources (2009–12): South Africa, 54%; China, 26%; Brazil, 17%; and other, 3%.

Tariff: Item	Number	Normal Trade Relations 12–31–13
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. 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. imports, excluding any material from Canada and Mexico, were about 35,000 tons for the first 10 months of 2013, about 13% less than during the first 10 months of 2012. Brazil provided 51%; South Africa, 35%; China, 13%; and other countries, 1% of vermiculite imports. Supplies of coarse grades were tight, and prices rose slightly in 2013.

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An Australian company kept its vermiculite mine at the East African Namekara vermiculite deposit in Uganda on care-and-maintenance status, owing to an oversupply of the medium-to-finer grades in the world market and transportation-and-related infrastructure-improvement issues. The company was negotiating a mining agreement with the Ugandan Government and working to ease local tensions that followed the mine shutdown. Although no vermiculite was produced, removal of overburden continued. 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. The Ugandan government invited Russian mineral companies to explore for vermiculite, based on data from a recent geophysical survey indicating the potential for large occurrences of vermiculite and other industrial minerals in the country.

The leading vermiculite producer in South Africa was sold to a consortium of South African and Chinese private and parastatal companies in December 2012. Reserves identified on properties adjacent to and near ongoing vermiculite mining operations could enable increased vermiculite production and extend the mine's current expected 24-year mine life.

A Brazilian company was expanding production capacity at its vermiculite mine in central Brazil in 2013 and was expected to begin production at another deposit under development near Brasilia, bringing the company's total production capacity to 200,000 tons per year in 2016.

World Mine Production and Reserves: The estimates of reserves were revised for Brazil and India based on new information from official Government sources in those countries.

	Mine production		Reserves ⁷
	2012	2013 ^e	
United States ^{e, 1}	100	100	25,000
Brazil	50	55	15,800
Bulgaria	19	20	NA
China	15	50	NA
India	13	20	1,700
Russia	25	25	NA
South Africa	140	130	14,000
Uganda	8	12	NA
Other countries	10	10	15,000
World total	380	420	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, Brazil, China, Russia, South Africa, Uganda, the United States, Zimbabwe, and some other countries. However, reserve 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 material 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.

⁴Price ranges, depending on grade and size, as reported in annual Mining Engineering "Vermiculite" reports (June 2009–12 and July 2013).

⁵Defined as imports – exports.

⁶Rounded to one significant digit to protect proprietary data.

⁷[See Appendix C for resource/reserve definitions and information concerning data sources.](#)