

## 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. Most of the vermiculite concentrate was shipped to 17 exfoliating plants in 11 States. The end uses for exfoliated vermiculite were estimated to be lightweight concrete aggregates (including cement premixes, concrete, and plaster), 36%; agriculture/horticulture, 43%; insulation, 7%; and other, 14%.

<b>Salient Statistics—United States:</b>	<b>2005</b>	<b>2006</b>	<b>2007</b>	<b>2008</b>	<b>2009<sup>e</sup></b>
Production <sup>e, 1</sup>	100	100	100	100	110
Imports for consumption <sup>e</sup>	91	65	51	73	75
Exports <sup>e</sup>	<sup>2</sup> 5	<sup>2</sup> 5	<sup>2</sup> 5	<sup>2</sup> 5	6
Consumption, apparent, concentrate <sup>e</sup>	185	160	145	170	180
Consumption, exfoliated <sup>e</sup>	85	90	85	82	93
Price, average, concentrate, dollars per ton, ex-plant	<sup>3</sup> 143	<sup>4</sup> 138	140	140	144
Stocks, producer, yearend	NA	NA	NA	NA	NA
Employment, number <sup>e</sup>	90	95	100	100	80
Net import reliance <sup>5</sup> as a percentage of apparent consumption <sup>e</sup>	45	40	32	40	39

**Recycling:** Insignificant.

**Import Sources (2005-08):** China, 59%; South Africa, 39%; and other, 2%.

<b>Tariff: Item</b>	<b>Number</b>	<b>Normal Trade Relations 12-31-09</b>
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.

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**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 a nongovernmental source, U.S. imports, excluding any material from Canada and Mexico, were about 30,000 tons for the first 9 months of 2009. China provided 17% and South Africa, 82%.

The purchase of the East African Namekara deposit by an Australian company has led to a supply contract for selling 5,000 tons per year of vermiculite. The deposit has 54.9 million tons of inferred resource and is considered to be one of the world's largest deposits. Current investment will bring production to a sustained rate of 8,000 tons per year by 2010 with expansion plans to achieve 25,000 tons per year by 2012.

### **World Mine Production and Reserves:**

	<b>Mine production</b>		<b>Reserves<sup>6</sup></b>
	<b><u>2008</u></b>	<b><u>2009<sup>e</sup></u></b>	
United States <sup>e</sup>	100	110	25,000
Australia	13	15	NA
Brazil	19	14	NA
China	120	130	NA
Russia	25	25	NA
South Africa	200	220	14,000
Zimbabwe	15	15	NA
Other countries	<u>28</u>	<u>26</u>	<u>NA</u>
World total	520	555	NA

**World Resources:** Marginal reserves of vermiculite that occur 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, reserves 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 peat, perlite, sawdust, bark and other plant materials, and synthetic soil conditioners.

<sup>e</sup>Estimated. NA Not available.

<sup>1</sup>Concentrate sold and used by producers.

<sup>2</sup>Excludes Canada and Mexico.

<sup>3</sup>Moeller, Eric, 2006, Vermiculite: Mining Engineering, v. 58, no. 6, June, p. 61. (Average of prices from range of sized grades.)

<sup>4</sup>Moeller, Eric, 2007, Vermiculite: Mining Engineering, v. 59, no. 6, June, p. 61-62. (Average of prices from range of sized grades.)

<sup>5</sup>Defined as imports – exports + adjustments for Government and industry stock changes.

<sup>6</sup>See Appendix C for definitions. Reserve base estimates were discontinued in 2009; see [Introduction](#).