

## VERMICULITE

(Data in thousand metric tons, unless otherwise noted)

**Domestic Production and Use:** Two companies, with mining and processing facilities, produced vermiculite concentrate. One company had its operation in South Carolina, and the other company had an operation in Virginia and an operation in South Carolina run by its subsidiary company. Most of the vermiculite concentrate was shipped to 19 exfoliating plants in 10 States. The end uses for exfoliated vermiculite were estimated to be agriculture and insulation, 80%; lightweight concrete aggregates (including concrete, plaster, and cement premixes), 16%; and other, 4%.

<b>Salient Statistics—United States:</b>	<b>1996</b>	<b>1997</b>	<b>1998</b>	<b>1999</b>	<b>2000<sup>e</sup></b>
Production <sup>1</sup>	W	W	W	<sup>e2</sup> 175	175
Imports for consumption <sup>e</sup>	48	67	68	71	60
Exports <sup>e</sup>	8	8	11	7	5
Consumption, apparent, concentrate	W	W	W	<sup>e</sup> 240	230
Consumption, exfoliated	135	<sup>e</sup> 155	<sup>e</sup> 170	<sup>e</sup> 175	170
Price, average value, concentrate, dollars per ton, f.o.b. mine	W	W	W	W	W
Stocks, producer, yearend	NA	NA	NA	NA	NA
Employment, mine and mill, number <sup>e</sup>	230	230	230	230	230
Net import reliance <sup>3</sup> as a percent of apparent consumption	W	W	W	<sup>e</sup> 27	24

**Recycling:** Insignificant.

**Import Sources (1996-99):** South Africa, 73%; China, 23%; and other, 4%.

<b>Tariff: Item</b>	<b>Number</b>	<b>Normal Trade Relations 12/31/00</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:** In western Europe, the United Kingdom is reported to be the largest consumer of crude (concentrate) vermiculite, with a 31% share. France is the next largest user, with 26%, followed by Austria, 11%; Germany, 8%; Italy, 4%; Spain, 4%; and other countries, 16%. Consumption of exfoliated vermiculite in western Europe is 24% in boards; 22%, horticulture; 17%, insulation; 15%, plasters; and 22%, other. The boards are said to be more durable than the drywall produced in North America. Other uses in western Europe include friction linings (where exfoliated vermiculite has partially replaced asbestos), specialty plasters, refractory mixes, and acoustic tiles.<sup>4</sup>

### **World Mine Production, Reserves, and Reserve Base:**

	<b>Mine production</b>		<b>Reserves<sup>5</sup></b>	<b>Reserve base<sup>5</sup></b>
	<b>1999</b>	<b>2000<sup>e</sup></b>		
United States	<sup>e</sup> 2175	175	25,000	100,000
Russia	25	25	NA	NA
South Africa	209	210	20,000	80,000
Other countries <sup>6</sup>	<u>122</u>	<u>130</u>	<u>5,000</u>	<u>20,000</u>
World total (rounded)	<sup>e</sup> 530	540	50,000	200,000

**World Resources:** Marginal reserves of vermiculite, occurring in Colorado, Nevada, North Carolina, Texas, and Wyoming, are estimated to be 2 to 3 million tons. Resources in other countries may include material that does not exfoliate as well as U.S. and South African vermiculite.

**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, slate, and slag. 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. W Withheld to avoid disclosing company proprietary data.

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

<sup>2</sup>Roskill Information Services, Ltd., 1999, The economics of vermiculite: London, Roskill Information Services, Ltd.

<sup>3</sup>Defined as imports - exports + adjustments for Government and industry stock changes.

<sup>4</sup>Ellicott, Graham, 2000, Crude vermiculite: Industrial Minerals, no. 391, April, p. 27.

<sup>5</sup>See Appendix C for definitions.

<sup>6</sup>Excludes countries for which information is not available.