

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 11 States. The end uses for exfoliated vermiculite were estimated to be agriculture, 56%; insulation, 20%; and lightweight concrete aggregates (including concrete, plaster, and cement premixes) and other, 24%.

Salient Statistics—United States:	1993	1994	1995	1996	1997^e
Production ¹	190	177	171	W	W
Imports for consumption ^e	30	30	30	48	50
Exports ^e	7	7	6	8	8
Consumption, apparent, concentrate	213	200	195	W	W
Consumption, exfoliated	140	130	130	130	135
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 ^e	230	230	230	230	230
Net import reliance ² as a percent of apparent consumption	11	11	12	W	W

Recycling: Insignificant.

Import Sources (1993-96):^e South Africa, 94%; China, 5%; and other, 1%.

Tariff: Item	Number	Most favored nation (MFN) <u>12/31/97</u>	Non-MFN³ <u>12/31/97</u>
Mineral substances not specifically provided for	2530.10.0000	Free	Free.
Exfoliated vermiculite as mixtures and articles of heat-insulating, sound- insulating, or sound-absorbing materials	6806.20.0000	2% ad val.	30% ad val.

Depletion Allowance: 14% (Domestic), 14% (Foreign).

Government Stockpile: None.

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Events, Trends, and Issues: With the retirement of the owners of one of the three U.S. producers of vermiculite concentrate, located in South Carolina, some of the company's mining and plant activities were taken over by one of the remaining concentrate producers and by another company which exfoliates vermiculite.

The largest end use of vermiculite in recent years has been horticulture, composing over one-half of the output. Vermiculite is used to loosen and aerate soil, and improve water retention and fertilizer release. Vermiculite is used also in lightweight concrete for roof and floor slabs. Fireproofing uses of vermiculite include furnace insulation; with molten metals as a mold lining; and sprayed or trowelled as a premixed plaster on structural steel. Vermiculite is used also to enhance sound absorption properties in acoustical panels, ceiling tiles, and texturized ceiling coatings.

World Mine Production, Reserves, and Reserve Base:

	Mine production		Reserves⁴	Reserve base⁴
	<u>1996</u>	<u>1997^e</u>		
United States ¹	W	W	25,000	100,000
Russia	30	35	NA	NA
South Africa	186	190	20,000	80,000
Other countries ⁵	<u>50</u>	<u>50</u>	<u>5,000</u>	<u>20,000</u>
World total	⁶ 266	⁶ 275	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. Total world resources are estimated to be up to three times the reserve amount.

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.

^eEstimated. NA Not available. W Withheld to avoid disclosing company proprietary data.

¹Concentrate sold and used by producers.

²Defined as imports - exports + adjustments for Government and industry stock changes.

³See Appendix B.

⁴See Appendix D for definitions.

⁵Excludes the United States and countries for which information is not available.

⁶Excludes the United States.