

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 20 exfoliating plants in 11 States. The end uses for exfoliated vermiculite were estimated to be agriculture and insulation, 77%; lightweight concrete aggregates (including concrete, plaster, and cement premixes), 18%; and other, 5%.

Salient Statistics—United States:	1994	1995	1996	1997	1998^e
Production ¹	177	171	W	W	W
Imports for consumption ^e	30	30	48	67	50
Exports ^e	7	6	8	8	7
Consumption, apparent, concentrate	200	195	W	W	W
Consumption, exfoliated	130	130	135	^e 155	150
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	12	W	W	W

Recycling: Insignificant.

Import Sources (1994-97):^e South Africa, 84%; China, 12%; and other, 4%.

Tariff: Item	Number	Normal Trade Relations (NTR) <u>12/31/98</u>	Non-NTR³ <u>12/31/98</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	1% ad val.	30% ad val.

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

Government Stockpile: None.

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Events, Trends, and Issues: South Africa continued to be the largest producer of vermiculite, averaging about 210,000 tons per year during the past several years. In Australia, a relatively new company continued to develop export markets, including southeast Asia, Japan, and Europe, although its focus remained on domestic sales. Production was 10,000 tons in 1997 and was projected to increase to 16,000 tons in 1998, according to a nongovernment source.

In western Europe, the manufacture of building products is estimated to account for 70% to 80% of vermiculite consumption, according to another nongovernment source. An example is a company in Denmark that produces moler (diatomite) bricks and blocks, and calcium silicate and vermiculite insulating slabs and granules. A variety of vermiculite insulation materials are produced including boards and ready-mixed insulation castables based on a mix of moler and vermiculite. The principal export market for vermiculite insulation slabs is Germany, where they are used in place of glass and mineral wools.

World Mine Production, Reserves, and Reserve Base:

	Mine production		Reserves⁴	Reserve base⁴
	<u>1997</u>	<u>1998^e</u>		
United States	W	W	25,000	100,000
Russia	25	25	NA	NA
South Africa	211	210	20,000	80,000
Other countries ⁵	<u>44</u>	<u>45</u>	<u>5,000</u>	<u>20,000</u>
World total	⁶ 280	⁶ 280	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 countries for which information is not available.

⁶Excludes the United States.