

VERMICULITE

(Data in thousand metric tons, unless noted)

Domestic Production and Use: One company, with mining and processing facilities in South Carolina, remained the largest producer of vermiculite concentrate. Three other companies each had an active operation for producing concentrate; two in South Carolina, and one in Virginia. Most of the vermiculite concentrate was shipped to 25 exfoliating plants in 16 States. The end uses for exfoliated vermiculite were estimated to be agriculture, 55%; insulation, 23%; lightweight concrete aggregates, including concrete, plaster, and cement premixes, 16%; and other, 6%.

| Salient Statistics—United States: | 1991 | 1992 | 1993 | 1994 | 1995^e |
|--|-------------|-------------|-------------|-------------|-------------------------|
| Production ¹ | 180 | 190 | 190 | 180 | 170 |
| Imports for consumption ^e | 38 | 40 | 30 | 30 | 35 |
| Exports ^e | 10 | 8 | 7 | 7 | 5 |
| Consumption, apparent, concentrate | 208 | 222 | 213 | 203 | 200 |
| Consumption, exfoliated | 136 | 140 | 140 | 130 | 130 |
| 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 ^e | 230 | 230 | 230 | 230 | 230 |
| Net import reliance ² as a percent of apparent consumption | 13 | 14 | 11 | 11 | 15 |

Recycling: Insignificant.

Import Sources (1991-94):^e South Africa, 99%; and other, 1%.

| Tariff: | Item | Number | Most favored nation (MFN) <u>12/31/95</u> | Non-MFN³ <u>12/31/95</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 | 3.9% ad val. | 30% ad val. |

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

Government Stockpile: None.

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Events, Trends, and Issues: During the past few years, agricultural (horticultural, soil conditioning, etc.) applications have been the largest end use of exfoliated vermiculite. According to a non-Government source, vermiculite is used in building boards of various types. For example, fine-sized, untreated vermiculite concentrates are included in fire-resistant plaster board, and exfoliated vermiculite is used in some lightweight wallboard and in various refractory board products. Ground, thermally exfoliated vermiculite is utilized as filler in friction materials, such as a replacement for asbestos in brake linings.

World Mine Production, Reserves, and Reserve Base:

| | Mine production | | Reserves ⁴ | Reserve base ⁴ |
|------------------------------|-----------------|-------------------|-----------------------|---------------------------|
| | 1994 | 1995 ^e | | |
| United States ¹ | 180 | 170 | 25,000 | 100,000 |
| Russia | 40 | 40 | NA | NA |
| South Africa | 223 | 220 | 20,000 | 80,000 |
| Other countries ⁵ | 43 | 60 | 5,000 | 20,000 |
| World total ⁵ | 486 | 490 | 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 C for definitions.

⁵Excludes countries for which information is not available.