

# Vermiculite

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U.S. production of vermiculite concentrate in 1979 showed a 3% recovery in quantity sold and used by producers (346,000 tons) from the 6% decline in 1978. Value of production in 1979 continued to increase, and was 12% higher than in 1978, and 18% above that in 1977.

Vermiculite in 1979 was mined and benefited from deposits in Montana, South Carolina, and a newly developed mine in Virginia. The only operation in Texas was idle in 1979.

Exfoliated vermiculite was produced at 47 plants in 30 States in 1979, and the quantity sold and used was 4,000 tons (1.5%) above the 1978 total from 49 plants in 29 States.

Value of exfoliated vermiculite sold and used in 1979 was \$51.2 million compared with \$49 million in 1978. W. R. Grace & Co. continued to be the leading domestic producer of vermiculite concentrate and exfoliated.

The principal uses of exfoliated vermiculite in 1979 were for concrete aggregate, 23%; fertilizer carriers, 17%; block insulation, 16%; loose fill insulation, 15%; horticulture and soil conditioning, 14%; and premixes, 12%.

World production of vermiculite was 607,000 tons in 1979, a slight decline from the 616,000 tons produced in 1978.

Table 1.—Salient vermiculite statistics  
(Thousand short tons and thousand dollars)

	1975	1976	1977	1978	1979
United States:					
Sold and used by producers:					
Concentrate -----	330	304	359	337	346
Value -----	\$13,800	\$14,000	\$18,600	\$19,700	\$22,000
Average value per ton <sup>1</sup> -----	\$41.82	\$46.05	\$51.81	\$58.46	\$63.59
Exfoliated -----	235	270	321	270	274
Value -----	\$36,300	\$42,300	\$50,500	\$49,000	\$51,200
Average value per ton <sup>1</sup> -----	\$154.47	\$156.67	\$157.32	\$181.48	\$186.86
Exports to Canada -----	45	41	<sup>e</sup> 45	<sup>e</sup> 29	NA
Imports from the Republic of South Africa -----	33	40	<sup>e</sup> 40	<sup>e</sup> 28	NA
World: Production <sup>2</sup> -----	588	<sup>f</sup> 576	577	616	<sup>e</sup> 607

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

<sup>1</sup>Based on rounded data.

<sup>2</sup>Excludes production by centrally planned economy countries.

## DOMESTIC PRODUCTION

U.S. production of vermiculite concentrate in 1979 was 346,000 tons valued at \$22 million, an increase of 3% in quantity sold and used and an increase of 12% in value over that in 1978. U.S. output in 1978 had decreased 6% in quantity from that in 1977.

The principal vermiculite mining and

beneficiating operations in 1979 were those of W. R. Grace & Co. at Libby, Mont., and Enoree, S. C. Vermiculite was also mined and processed in 1979 by Patterson Vermiculite Co. near Enoree, S. C., and by Virginia Vermiculite, Ltd., in Louisa County, Va., which completed its first year of pro-

duction. The Volite Company, Llano, Tex., was inactive during the year.

Exfoliated vermiculite output in 1979 increased 4,000 tons in quantity sold and used over that in 1978, and was produced in 47 plants in 30 States compared with 49 plants in 29 States in 1978 and 51 plants (revised) in 1977. The value of exfoliated vermiculite sold and used by producers in 1979 was \$51.2 million, an increase of 4.5% over that in 1978. Producers and exfoliation plant

locations are shown in table 3. Vermiculite imported from the Republic of South Africa (quantity unknown) was also exfoliated in domestic plants in 1979.

The principal producing States, in descending order of exfoliated vermiculite production in 1979, were Ohio, South Carolina, Texas, Florida, California, New Jersey, Illinois, and Pennsylvania. In 1978, Illinois was ranked fifth and California was ranked sixth.

Table 2.—Exfoliated vermiculite sold and used, by end use

Use	1977		1978		1979	
	Short tons	Percent of total	Short tons	Percent of total	Short tons	Percent of total
<b>Aggregates:</b>						
Concrete	65,900	21	66,900	25	63,200	23
Plaster	<sup>r</sup> 3,200	1	4,400	2	2,800	1
Premixes <sup>1</sup>	<sup>r</sup> 30,200	9	22,200	8	33,400	12
<b>Total<sup>2</sup></b>	<b><sup>r</sup>99,300</b>	<b>31</b>	<b>93,500</b>	<b>35</b>	<b>99,400</b>	<b>36</b>
<b>Insulation:</b>						
Loose fill	74,900	23	41,200	15	40,900	15
Block	<sup>r</sup> 49,400	15	42,500	16	44,500	16
Packing	200	--	200	--	200	--
<b>Total<sup>2</sup></b>	<b><sup>r</sup>124,500</b>	<b>39</b>	<b>83,900</b>	<b>31</b>	<b>85,600</b>	<b>31</b>
<b>Agriculture:</b>						
Horticulture and soil conditioning	<sup>r</sup> 41,000	13	41,800	15	38,900	14
Fertilizer carrier	<sup>r</sup> 48,600	15	45,600	17	45,400	17
<b>Total<sup>2</sup></b>	<b><sup>r</sup>89,600</b>	<b>28</b>	<b>87,400</b>	<b>32</b>	<b>84,300</b>	<b>31</b>
<b>Other uses<sup>3</sup></b>	<b><sup>r</sup>7,500</b>	<b>2</b>	<b>5,500</b>	<b>2</b>	<b>4,700</b>	<b>2</b>
<b>Grand total<sup>2</sup></b>	<b>321,000</b>	<b>100</b>	<b>270,000</b>	<b>100</b>	<b>274,000</b>	<b>100</b>

<sup>r</sup>Revised.

<sup>1</sup>Includes acoustic and fireproofing uses, texturizing, and moisture sealants.

<sup>2</sup>Data may not add to totals shown because of independent rounding.

<sup>3</sup>Includes cryogenic, refractory, and other industrial applications.

Table 3.—Vermiculite exfoliating plants in the United States in 1979

Company	State	County	Nearest city or town
Brouk Co	Missouri	St. Louis	St. Louis.
Cleveland Builders Supply Co., Cleveland Gypsum Co., Div.	Ohio	Cuyahoga	Cleveland.
Diversified Insulation, Inc	Minnesota	Hennepin	Minneapolis.
J. P. Austin Assoc., Inc	Pennsylvania	Allegheny	Beaver Falls.
W. R. Grace & Co., Construction Products Div.	Alabama	Jefferson	Irondale.
	Arizona	Maricopa	Phoenix.
	Arkansas	Pulaski	North Little Rock.
	California	Alameda	Newark.
	do	Orange	Santa Ana.
	Colorado	Denver	Denver.
	Florida	Broward	Pompano Beach.
	do	Duval	Jacksonville.
	do	Hillsborough	Tampa.
	Illinois	Du Page	West Chicago.
	Kentucky	Campbell	Newport.
	Louisiana	Orleans	New Orleans.
	Maryland	Prince Georges	Muirkirk.
	Massachusetts	Hampshire	Easthampton.
	Michigan	Wayne	Dearborn.
	Minnesota	Hennepin	Minneapolis.
	Missouri	St. Louis	St. Louis.
	Nebraska	Douglas	Omaha.

Table 3.—Vermiculite exfoliating plants in the United States in 1979—Continued

Company	State	County	Nearest city or town
	New Jersey	Mercer	Trenton.
	New York	Cayuga	Weedsport.
	North Carolina	Guilford	High Point.
	Oklahoma	Oklahoma	Oklahoma City.
	Oregon	Multnomah	Portland.
	Pennsylvania	Lawrence	New Castle.
	South Carolina	Greenville	Kearney.
	do.	do.	Travellers Rest.
	Tennessee	Davidson	Nashville.
	Texas	Bexar	San Antonio.
	do.	Dallas	Dallas.
	Wisconsin	Milwaukee	Milwaukee.
International Vermiculite Co	Illinois	Macoupin	Girard.
Koos, Inc.	Wisconsin	Kenosha	Kenosha.
Mica Pellets, Inc.	Illinois	DeKalb	DeKalb.
Patterson Vermiculite Co	South Carolina	Laurens	Lansford.
Robinson Insulation Co	Montana	Cascade	Great Falls.
	North Dakota	Ward	Minot.
The Schundler Co	New Jersey	Middlesex	Metuchen.
O. M. Scott	Ohio	Union	Marysville.
Strong-Lite Products	Arkansas	Jefferson	Pine Bluff.
Verlite Co	Florida	Hillsborough	Tampa.
Vermiculite of Hawaii, Inc.	Hawaii	Honolulu	Honolulu.
Vermiculite-Intermountain, Inc.	Utah	Salt Lake	Salt Lake.
Vermiculite Products, Inc.	Texas	Harris	Houston.

## CONSUMPTION AND USES

Major end-use categories of exfoliated vermiculite in 1979 were aggregates, 36% of total consumption (up 1 percentage point from 1978); insulation, 31% (no change); and agriculture, 31% (down 1 percentage point).

Aggregate uses totaled 99,400 tons sold and used in 1979, a 6% increase over that in 1978; insulation uses increased 2% over that in 1978; and agricultural uses decreased 4% from that in 1978. Other uses in 1979 totaled 4,700 tons, a decrease of 15% from that in 1978.

The 16% decrease in U.S. consumption

of exfoliated vermiculite from 321,000 tons in 1977 to 270,000 tons in 1978 was caused primarily by a 33% decline in consumption of loose fill and block insulation, which together accounted for 83,700 tons in 1978, compared with 124,300 tons in 1977. The slight recovery in U.S. consumption in 1979 was due primarily to a 50% increase in use of aggregate premixes (fireproofing, texturizing, and sealant products) which totaled 33,400 tons, compared with 22,200 tons in 1978 and 30,200 tons in 1977.

## PRICES

The average value of vermiculite concentrate sold and used by U.S. producers in 1979 was \$63.59 per ton, an increase of 9% over that reported in 1978. Compared with that in 1977, the 1978 increase was 13%.

The average value of exfoliated vermiculite sold and used in 1979 was \$186.86 per ton, an increase of 3% over that in 1978. Compared with that in 1977, the 1978 increase was 15%.

Engineering and Mining Journal quoted 1979 yearend prices for unexfoliated vermiculite as follows: Per short ton, f.o.b. mine, Montana and South Carolina, domestic, \$59 to \$92; and Republic of South Africa, \$50 to \$100, c.i.f. Atlantic ports. For comparison, yearend 1978 quoted prices were \$48 to \$85 for domestic and \$70 to \$90 for Republic of South Africa.

## FOREIGN TRADE

The United States annually imports large quantities of vermiculite from the Republic of South Africa, and exports vermiculite to Canada. However, tonnage data in 1979

were not available.

<sup>1</sup>Industry economist, Section of Nonmetallic Minerals.

Table 4.—Vermiculite: World production, by country<sup>1</sup>

(Short tons)

Country	1976	1977	1978 <sup>P</sup>	1979 <sup>e</sup>
Argentina	4,517	5,139	5,890	5,900
Brazil	1,043	7,532	21,617	22,000
Egypt	—	—	654	700
India	<sup>2</sup> 8,786	3,172	1,991	2,000
Japan <sup>e</sup>	14,000	15,000	16,000	17,000
Kenya	3,954	4,762	2,054	2,200
South Africa, Republic of	244,798	182,343	230,485	<sup>2</sup> 211,173
Tanzania <sup>e</sup>	20	20	20	20
United States (sold and used by producers)	304,000	359,000	337,000	<sup>2</sup> 346,000
Total <sup>3</sup>	<sup>1</sup> 576,000	577,000	616,000	607,000

<sup>e</sup>Estimate. <sup>P</sup>Preliminary. <sup>1</sup>Revised.<sup>1</sup>Excludes production by centrally planned economy countries.<sup>2</sup>Reported figure.<sup>3</sup>Data may not add to totals shown because of independent rounding.