

PERLITE

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In 1999, the amount of domestic processed perlite sold and used, exports, and the apparent domestic consumption of processed perlite increased and processed perlite imports and the domestic production and sale of expanded perlite decreased. Small decreases in demand from construction products producers and horticultural perlite consumers fueled the decreased consumption of expanded perlite. Increased horticultural perlite consumption in Canada resulted in increased U.S. exports of processed perlite.

Production

According to the U.S. Geological Survey (USGS), the amount of U.S. processed perlite sold or used increased by about 4% to 711,000 metric tons (t), compared with that of 1998. The value of processed perlite sold or used increased by 8.6% to \$23.8 million compared with that of 1998. The amount of expanded perlite sold or used by domestic producers decreased slightly to 729,000 t, and the associated value remained about the same compared with that of 1998 (table 1).

Domestic production data for perlite are derived by the USGS from two voluntary annual surveys—one for domestic mine operations (processed perlite) and the other for expanding plants. All the processed perlite included in table 1 was produced by 11 mines operated by 9 companies, all of which responded to the USGS survey. In addition, 1 company reported 1 mine idle, thus bringing the total to 9 companies with 12 active or inactive perlite mines. The perlite mined came from Arizona, California, Nevada, New Mexico, Oregon, and Utah; New Mexico operations accounted for the vast majority of the total tonnage mined. Ore producers were Harborlite Corp. in Arizona and New Mexico, American Perlite Co. in California, Idaho Minerals LLC in Idaho, Wilkins Mining and Trucking Inc. and Eagle-Picher Minerals Inc. in Nevada, Cornerstone Industrial Minerals Corp. in Oregon, Dicaperl Corp. and USG Corp. in New Mexico, and Basin Perlite Co. in Utah. Of the 62 expanding operations canvassed, 61 were active; 50 operations, or 81%, responded, reporting about 83% of the total expanded perlite sold or used (table 1). The top seven producers of expanded perlite, each with production of more than 25,000 metric tons per year, accounted for nearly 85% of expanded perlite sold or used in the United States in 1999. The remaining 15% was sold or used by 26 companies.

During 1999, Cornerstone Industrial Minerals and Basin Perlite continued to work towards operating at full capacity. Both companies were able to produce and sell processed perlite, but amounts were substantially lower than planned capacity.

Basin Perlite had been established from Pearl Queen Perlite Co. when the company was sold to new private owners in 1999 (W.R. Wilson, Basin Perlite Co., oral commun., 2000).

During 1999, Idaho Minerals LLC continued to produce expanded perlite near Malad City, ID, but perlite mining at this location was minimal. The company came under new ownership when Hess Pumice Products, Inc., purchased part of the company, and the company name was changed to Idaho Minerals LLC from Idaho Minerals, Inc. (J.M. Hess, Idaho Minerals LLC, oral commun., 2000).

Consumption

Domestic apparent consumption is defined as U.S. processed perlite sold and used plus imports minus exports. In 1999, domestic apparent consumption of processed perlite was 808,000 t, a slight increase compared with that of 1998. Consumption of expanded perlite for construction-related uses, which was the major market for expanded material, decreased slightly to 525,000 t. Construction uses of expanded perlite, which consisted of concrete aggregate, formed products, masonry and cavity-fill insulation, and plaster aggregate accounted for nearly 72% of total domestic sales in 1999. Expanded perlite consumption increased for concrete aggregate, fillers, and plaster aggregate. Consumption decreased slightly for all other uses (table 3). Perlite was expanded, usually for local consumption, in 31 States. The leading States in production of expanded perlite, sold or used, were, in descending order, Mississippi, Georgia, Illinois, Pennsylvania, Minnesota, Alabama, and Virginia (table 2).

Prices

Processed perlite sold at an average value of \$33.44 per metric ton, which was up 3.7% compared with that of 1998. Perlite consumed by expanding plants operated by the mining companies was valued at \$33.15 per ton, which was up 10.5% compared with that of 1998. The average price for all perlite sold or used by mining companies was \$33.40 per ton, which was up 4.7% compared with that of 1998. The average price of expanded perlite was \$203 per ton; the range in reported prices, was, however, wide—from less than \$100 to more than \$1,000 per ton.

The average prices per ton of expanded perlite, by use, were low-temperature insulation, \$386; cavity-fill insulation, \$373; fillers, \$370; horticultural aggregate, \$326; miscellaneous uses, \$322; filter aid, \$319; concrete aggregate, \$284; plaster aggregate, \$177; and formed products, \$146 (table 3).

Foreign Trade

Exports of processed and expanded perlite, primarily to Canada, were estimated to be 47,000 t, which was a 12% increase from that of 1998. Imports of processed perlite, almost exclusively from Greece, decreased by about 4% to around 144,000 t. Import and export data were derived from the U.S. Bureau of the Census data, the Journal of Commerce's Port Import and Export Reporting Service, and importers and exporters.

World Review

The United States was estimated to be the largest producer and consumer of crude and expanded perlite. Other leading producers of perlite (crude, processed) were, in descending order, Greece, Japan, Turkey, and Hungary (table 4). In 1999, 13 countries produced 1.85 million metric tons of perlite. Owing to a lack of reliable figures, however, this total does not include several producing countries, including China, which was probably the largest or second largest producer in the world.

Outlook

Total consumption of expanded perlite and processed perlite in the United States is expected to increase slightly in 2000. Growth in imports of processed perlite is expected to slow the

growth of domestic processed perlite sales. The growth in Canadian horticultural perlite demand may, however, result in increased exports of domestic processed perlite. The new mines in the Western United States and continued growth in imports are expected to restrain price increases for many grades of processed perlite.

GENERAL SOURCES OF INFORMATION

U.S. Geological Survey Publications

Lightweight aggregates. Ch. in United States Mineral Resources, Professional Paper 820, 1973.
Perlite. Ch. in Mineral Commodity Summaries, annual.¹

Other

Bates, R.L., 1969, Geology of the industrial rocks and minerals: New York, Dover Publications, Inc., p. 50-58.
Harben, P.W., and Bates, R.L., 1990, Industrial minerals—Geology and world deposits: Surrey, UK, Metal Bulletin plc., p. 184-189.
Industrial Minerals Magazine (London).
Perlite. Ch. in Mineral Facts and Problems, U.S. Bureau of Mines Bulletin 675, 1985.

¹Prior to January 1996, published by the U.S. Bureau of Mines.

TABLE 1
 PERLITE MINED, PROCESSED, EXPANDED, AND SOLD OR USED BY PRODUCERS IN THE UNITED STATES 1/

(Thousand metric tons and thousand dollars)

Year	Processed perlite					Expanded perlite			
	Perlite mined 2/	Used at own plant to make			Total quantity sold or used	Quantity produced	Sold or used		
		Quantity	Value	Quantity			Value	Quantity	Value
1995	813	592	17,900	108	3,700	700	657	652	127,000
1996	811	565	17,500	120	3,770	684	671	670	137,000
1997	656	605	19,900	101	3,400	706	700	695	143,000
1998	832	583	18,800	102	3,060	685	738 r/	736 r/	148,000 r/
1999	821	619	20,700	92	3,050	711	731	729	148,000

r/ Revised.

1/ Data are rounded to no more than three significant digits; may not add to totals shown.

2/ Crude ore mined and stockpiled for processing.

TABLE 2
 EXPANDED PERLITE PRODUCED AND SOLD OR USED BY PRODUCERS IN THE UNITED STATES, BY STATE 1/

State	1998				1999			
	Quantity produced (metric tons)	Sold or used		Average value per ton 2/	Quantity produced (metric tons)	Sold or used		Average value per ton 2/
		Quantity (metric tons)	Value (thousands)			Quantity (metric tons)	Value (thousands)	
California	44,700 r/	44,300 r/	\$11,600 r/	\$263 r/	29,300	29,000	\$9,600	\$330
Florida	30,800 r/	30,300 r/	8,090 r/	276 r/	34,300	33,100	8,900	269
Indiana	W	W	W	275	17,000	17,000	4,700	276
Michigan	26,600 r/	27,900 r/	5,440 r/	195 r/	24,900	24,900	5,310	213
Mississippi	129,000	129,000	14,500	113	136,000	136,000	16,200	119
Pennsylvania	47,800	47,800	9,040	189	46,800	46,800	8,770	188
Other 3/	459,000 r/	457,000 r/	99,300 r/	217 r/	442,000	442,000	995,000	214
Total or average	738,000 r/	736,000 r/	148,000 r/	201 r/	731,000	729,000	148,000	203

r/ Revised. W Withheld to avoid disclosing company proprietary data; included in "Other."

1/ Data are rounded to no more than three significant digits, except average value; may not add to totals shown.

2/ Average value based on unrounded data and rounded to nearest dollar.

3/ Includes Alabama, Arizona, Arkansas, Colorado, Georgia, Idaho, Illinois, Indiana (1998), Kansas, Kentucky, Maine, Massachusetts, Minnesota, Missouri, Nevada, New Jersey, North Carolina, Ohio, Oklahoma, Oregon, Tennessee, Texas, Utah, Virginia, Wisconsin, and Wyoming.

TABLE 3
 EXPANDED PERLITE SOLD OR USED BY PRODUCERS IN THE UNITED STATES, BY USE 1/

Use	1998			1999		
	Quantity (metric tons)	Value (thousands)	Average value per ton 2/	Quantity (metric tons)	Value (thousands)	Average value per ton 2/
Concrete aggregate	3,660 r/	\$1,060 r/	\$386 r/	4,330	\$1,230	\$284
Fillers	46,600 r/	18,100 r/	411 r/	53,200	19,700	370
Filter aid	61,700 r/	19,200 r/	338 r/	60,000	19,200	319
Formed products 3/	506,000	73,700	146	499,000	73,000	146
Horticultural aggregate	76,000 r/	23,500 r/	309 r/	70,700	23,100	326
Low-temperature insulation	3,530 r/	1,840 r/	407 r/	2,850	1,100	386
Masonry and cavity-fill insulation	7,610 r/	2,890 r/	338 r/	7,500	2,800	373
Plaster aggregate	8,730	2,880	329	13,700	2,430	177
Other 4/	22,200 r/	4,900 r/	194 r/	17,300	5,570	322
Total or average	736,000 r/	148,000 r/	201 r/	729,000	148,000	203

r/ Revised.

1/ Data are rounded to no more than three significant digits, except average value; may not add to totals shown.

2/ Average value based on unrounded data and rounded to nearest dollar.

3/ Includes acoustic ceiling panels, pipe insulation, roof insulation board, and unspecified formed products.

4/ Includes explosives, high-temperature insulation, paint, refractory, soap, steel, sugar manufacture, and various nonspecified industrial uses.

TABLE 4
 PERLITE: WORLD PRODUCTION, BY COUNTRY 1/ 2/

(Metric tons)

Country 3/	1995	1996	1997	1998	1999 e/
Armenia e/	6,000	6,000	6,000	35,000	35,000
Australia e/ 4/	5,000	5,000	5,000	5,000	5,000
Greece (screened)	431,054	417,882	500,117 r/	425,000 e/	500,000
Hungary e/ 4/	151,000 5/	110,000 r/	120,000 r/	130,000 r/	100,000
Iran e/	6,000	6,000	6,000	6,000	6,000
Italy e/	60,000	60,000	60,000	60,000	60,000
Japan e/	200,000	200,000	200,000	200,000	200,000
Mexico 4/	33,529	37,417	51,758	54,840 r/	55,000
Philippines e/	17,133 r/ 5/	20,000	20,000	20,000	20,000
Slovakia	21,850 r/ 5/	25,160 r/ 5/	25,000 r/ e/	24,000 r/ e/	25,000
South Africa	1,338	682 r/	403	400	400
Turkey 4/	171,058	157,580	103,416 r/	124,312 r/	130,000
United States (processed ore sold and used by producers)	700,000	684,000	706,000	685,000	711,000 5/
Total	1,800,000 r/	1,730,000 r/	1,800,000 r/	1,770,000 r/	1,850,000

e/ Estimated. r/ Revised.

1/ World totals, U.S. data, and estimated data are rounded to no more than three significant digits; may not add to totals shown.

2/ Unless otherwise stated, figures represent processed ore output. Table contains data available through May 19, 2000.

3/ In addition to the countries listed, Algeria, Bulgaria, China, Iceland, Mozambique, and the former Yugoslavia are believed to have produced perlite but output is not reported, and available information is inadequate for the formulation of reliable estimates of output levels.

4/ Crude ore.

5/ Reported figure.