

PERLITE

By Wallace P. Bolen

The perlite industry rebounded in 1997 as records were set for domestic processed perlite sold or used, expanded perlite sold or used, imports, and consumption. Increased demand from construction products producers and horticultural perlite consumers fueled the increased consumption of domestic and imported perlite.

Production

According to the U.S. Geological Survey (USGS), the amount of U.S. processed perlite sold or used increased about 3% to 706,000 metric tons, compared with 1996. The value of processed perlite sold or used increased 9.5% to \$23.3 million compared with 1996. The amount of expanded perlite sold or used by domestic producers increased nearly 4% to 695,000 metric tons, and the associated value increased about 4.4% compared with that of 1996. (See table 1.) Construction uses of expanded perlite, mostly formed products, accounted for just over 71% of total domestic sales in 1997.

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 nine mines operated by seven companies, all of whom responded to the survey. Three companies reported 3 mines idle, bringing the total to 9 companies with 12 active or inactive perlite mines. Of the 64 expanding operations canvassed, 62 were active; 47 operations, or 73%, responded, reporting about 82% of the total expanded perlite sold or used shown in table 1. The perlite mined came from five Western States. New Mexico operations accounted for the vast majority of the total tonnage mined. Arizona, California, Nevada, and Oregon accounted for the remaining tonnage. Ore producers were: Harborlite Corp. in Arizona and New Mexico; American Perlite Co. in California; Wilkins Mining and Trucking Co. and Eagle-Picher Minerals Inc. in Nevada; Cornerstone Industrial Minerals Corp. in Oregon; Dicapert Corp. and USG Corp. in New Mexico. The top eight producers of expanded perlite, each with production of more than 25,000 tons annually, accounted for 85% of expanded perlite sold or used in the United States in 1997. The remaining 15% was sold or used by 27 companies.

Idaho Minerals, Malad City, ID, and Cornerstone Industrial Minerals, Lakeview, OR, sought to work through logistical, capacity, or process bottlenecks during 1997. Both companies were able to produce processed perlite but amounts were substantially lower than planned capacity. Idaho Minerals also produced expanded perlite.

Pearlqueen Inc. continued plans to open and operate a mine and a processing plant near Kaysville, UT, but no startup date has been announced.

Consumption

Domestic apparent consumption is defined as U.S. processed perlite sold and used plus imports minus exports. In 1997, domestic apparent consumption of processed perlite was 803,000 metric tons, an increase of 4.2% from that of 1996. Consumption of expanded perlite for construction-related uses, the major market for expanded material, increased 4.4% to 496,000 tons. Expanded perlite consumption increased significantly for filter aid, horticultural aggregate, and low-temperature insulation applications. Consumption decreased significantly for concrete aggregate and slightly for filler application. Perlite was expanded, usually for local consumption, in 31 States. The leading States, in production of expanded perlite, sold or used, were Alabama, California, Florida, Georgia, Illinois, Mississippi, Oregon, and Virginia. (See tables 2 and 3.)

Prices

Processed perlite sold at an average value of \$32.94 per ton. Perlite consumed by expanding plants operated by the mining companies was valued by the mining companies at \$33.70 per ton. The average price for all perlite sold or used by mining companies was \$33.04 per ton. The average price of expanded perlite was \$206 per ton; there was however, a wide range in reported prices from less than \$100 to more than \$1,000 per ton.

The average prices for a ton of expanded perlite, by use, were low-temperature insulation, \$399; fillers, \$366; cavity-fill insulation, \$353; horticultural aggregate, \$316; filter aid, \$312; concrete aggregate, \$303; miscellaneous uses, \$271; plaster aggregate, \$170; and formed products, \$152.

Foreign Trade

Exports of processed perlite, primarily to Canada, were estimated to be 38,000 tons, unchanged from 1996. Imports of processed perlite, almost exclusively from Greece, increased about 8%, to a record level of around 135,000 tons.

World Review

The United States was estimated to be the largest producer and consumer of crude and expanded perlite. Other leading countries, in descending order of production of perlite (crude or processed, unexpanded) were Greece, Japan, Turkey, and Hungary. (See table 4.) Thirteen countries produced 1.84 million tons of perlite. Owing to a lack of reliable figures, however, this total does not include several producing countries, including China, which is 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 in 1998. Moderate growth in imports of processed perlite are expected to slow the growth of domestic processed perlite sales. New mines and expanding plants throughout the United States will probably restrain price increases in many grades of processed and expanded perlite.

SOURCES OF INFORMATION

U.S. Geological Survey Publications

Lightweight aggregates. Ch. in United States mineral resources,

U.S. Geological Survey 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).

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	Perlite mined 2/	Processed perlite					Expanded perlite			
		Sold to expanders		Used at own plant to make expanded material		Total quantity sold or used	Quantity produced	Sold or used		
		Quantity	Value	Quantity	Value			Quantity	Value	
1993	691	453	13,800	116	3,680	569	566	562	111,000	
1994	664	531	15,900	114	3,440	644	636	636	123,000	
1995	813	592	17,900 r/	108	3,700 r/	700	657	652	127,000	
1996	811	565	17,500 r/	120	3,770 r/	684	671	670	137,000	
1997	656	605	19,900	101	3,400	706	700	695	143,000	

r/ Revised.

1/ Data are rounded to three significant digits.

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	1996				1997			
	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	44,500	44,500	\$12,100	\$272	46,300	46,700	\$12,900	\$277
Florida	39,000	38,700	9,740	251	38,100	34,300	8,990	262
Michigan	27,700	27,700	5,720	207	28,900	28,900	5,900	185
Mississippi	69,500	69,500	7,390	106	83,700	83,700	9,320	114
Pennsylvania	49,300	49,300	9,060	184	57,200	57,200	10,700	187
Texas	9,540	9,540	3,610	378	W	W	W	W
Other 3/	431,000	430,000	89,700	208	446,000	445,000	95,500	215
Total	671,000	670,000	137,000	205	700,000	695,000	143,000	206

W Withheld to avoid disclosing company proprietary data.

1/ Data are rounding to three significant digits; 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, Kansas, Kentucky, Maine, Massachusetts, Minnesota, Missouri, Nevada, New Jersey, North Carolina, Ohio, Oklahoma, Oregon, Tennessee, Texas (1997), Utah, Virginia, Wisconsin, and Wyoming.

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

Use	1996		1997	
	Quantity (metric tons)	Value (thousands)	Quantity (metric tons)	Value (thousands)
Concrete aggregate	6,480	\$1,940	5,410	\$1,640
Fillers	50,900	19,300	50,200	18,400
Filter aid	62,600	19,700	65,300	20,300
Formed products 2/	455,000	63,200	470,000	71,600
Horticultural aggregate 3/	60,700	18,800	70,500	22,300
Low-temperature insulation	2,070	920	2,800	1,120
Masonry and cavity-fill insulation	7,610	2,710	8,220	2,900
Plaster aggregate	5,720	1,260	12,400	2,100
Other 4/	18,700	9,570	10,900	2,960
Total	670,000	137,000	695,000	143,000

1/ Data are rounded to three significant digits; may not add to totals shown.

2/ Includes acoustic ceiling tile, pipe insulation, roof insulation board, and unspecified formed products.

3/ Includes fertilizer carriers.

4/ Includes high-temperature insulation, oil-water absorbents, acoustic tile, paint extender (1997), and various nonspecified industrial uses.

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

(Metric tons)

Country 3/	1993	1994	1995	1996	1997 e/
Armenia e/	10,000	5,000	6,000	6,000	6,000
Australia e/ 4/	5,000	5,000	5,000	5,000	5,000
Greece (screened)	350,000 e/	371,945	431,054 r/	417,882 r/	425,000
Hungary 4/	80,000	85,000	151,000 r/	150,000 r/ e/	150,000
Iran e/	6,000	6,000	6,000	6,000	6,000
Italy e/	65,000	65,000	60,000	60,000	60,000
Japan e/	200,000	200,000	200,000	200,000	200,000
Mexico 4/	34,600	31,918	33,529 r/	36,624 r/	38,000
Philippines e/	19,779 5/	20,000	20,000	20,000	20,000
Slovakia e/	50,000	50,000	50,000	50,000	50,000
South Africa	328	914	1,338	1,300 e/	1,300
Turkey 4/	147,864	164,582	171,058 r/	175,000 r/ e/	175,000
United States (processed ore sold and used by producers)	569,000	644,000	700,000	684,000	706,000 5/
Total	1,540,000	1,650,000	1,840,000 r/	1,810,000 r/	1,840,000

e/ Estimated. r/ Revised.

1/ World totals, U.S. data, and estimated data are rounded to three significant digits; may not add to totals shown.

2/ Unless otherwise stated, figures represent processed ore output. Table contains data available through May 20, 1998.

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

4/ Crude ore.

5/ Reported figure.