



# 2009 Minerals Yearbook

PERLITE

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In 2009, the amount of domestic processed crude perlite sold or used and the amount of expanded perlite sold or used both decreased by about 20% compared with that of 2008. Domestic production of processed crude perlite was about 348,000 metric tons (t), and the amount of expanded perlite sold or used was about 439,000 t. Domestically produced processed crude perlite sales declined for the third time in the past 4 years after a brief increase in 2008. The 348,000 t sold or used represent the lowest level of domestic production since 1964, when 318,000 t was produced. The 439,000 t of expanded perlite was the smallest amount sold or used since 1984, when 439,000 t was also recorded in this category.

During the year, imports of processed crude perlite decreased by 18% to 153,000 t compared with that of 2008. This was the third consecutive year with falling perlite imports after a record high import level in 2006. Exports of crude processed perlite were estimated to have been about 33,000 t, decreasing by about 11% compared with those of 2008. Trade data in this report are from the U.S. Census Bureau and the Journal of Commerce's Port Import Export Reporting Service. Percentages in this report were computed using unrounded data.

## Production

Domestic production data for perlite were derived by the U.S. Geological Survey (USGS) from two voluntary annual surveys—one for domestic mine operations (processed crude perlite) and one for expanding plants. The expanding plants used domestic and imported processed crude perlite. All the processed crude perlite described in table 1 was produced by seven companies from nine mines, eight of which responded to the USGS survey, representing about 99% of the processed crude perlite sold or used in 2009. According to data collected by the USGS, the 348,000 t of U.S.-processed crude perlite sold or used in 2009 was valued at \$17.1 million, a decrease of 18% compared with that of 2008. The 439,000 t of expanded perlite sold or used by domestic producers was valued at \$132 million, a decrease of 14% compared with that of 2008 (table 1).

The processed crude perlite reported in table 1 was mined in Arizona, California, Idaho, Nevada, New Mexico, and Oregon. The mines in Arizona, New Mexico, and Oregon accounted for most of the tonnage mined. Ore producers were, in alphabetical order by State, Harborlite Corp. in Arizona and New Mexico; American Perlite Co. in California; Idaho Minerals, LLC in Idaho; EP Minerals, LLC and Wilkins Mining and Trucking, Inc. in Nevada; Dicaperl Minerals Corp. in New Mexico; and Cornerstone Industrial Minerals Corp. in Oregon.

Perlite was expanded at 55 plants throughout the United States and two plants were reported as idle. Of the 55 active plants, 28 plant operators (51%) responded to the USGS survey, representing about 75% of the total expanded perlite sold or

used. Production information for nonresponding companies was estimated using previously reported data, with adjustments based on currently reported production trends. The top seven producers of expanded perlite, each with production of more than 20,000 metric tons per year, accounted for about 79% of the expanded perlite sold or used in the United States in 2009. The remaining 21% was produced by 22 companies.

## Consumption

In 2009, domestic apparent consumption of processed crude perlite was 468,000 t, a 20% decrease compared with that of 2008. This was the lowest level of apparent consumption since 1983, when 447,000 t of processed crude perlite was consumed. Expanded perlite consumed for construction-related uses, the major market for expanded material, was about 232,000 t, a decrease of 28% compared with that of 2008. Construction uses of expanded perlite, which consisted of concrete aggregate, formed products, masonry- and cavity-fill insulation, and plaster aggregate, accounted for about 53% of total domestic sales of expanded perlite in 2009. Expanded perlite consumption decreased in most markets, with the most pronounced decrease by percentage reported for the formed products market (table 3). Expanded perlite consumption did increase for three of the smaller markets: concrete aggregate, laundries, and low-temperature insulation. Perlite was expanded, usually for local consumption, in 28 States. The leading States in production of expanded perlite sold or used were, in descending order, Illinois, Georgia, Pennsylvania, Mississippi, California, Oregon, Michigan, and Florida. The amount of expanded perlite sold or used by State was listed for those States with three or more companies expanding in each State; for other States, individual data were withheld to avoid disclosing company proprietary data (table 2).

## Prices

Processed crude perlite was sold at an average value of \$50 per metric ton, which was a slight increase compared with that of 2008. Perlite consumed by expanding plants operated by the mining companies was valued at \$47 per ton, which was a 4% increase compared with that of 2008. The average price for all perlite sold or used by mining companies was \$49 per ton, which was a slight increase compared with that of 2008. The average price of expanded perlite was \$302 per ton, up from \$279 per ton in 2008; the range in reported prices, however, was wide—from about \$100 to more than \$1,000 per ton.

The average price by use of expanded perlite, in descending order, was low-temperature insulation, \$559 per ton; fillers, \$461 per ton; masonry- and cavity-fill insulation, \$459 per ton; horticultural aggregate, \$427 per ton; concrete aggregate, \$398

per ton; filter aid, \$391 per ton; plaster aggregate, \$352 per ton; laundries, \$247 per ton; and formed products, \$195 per ton (table 3).

## Foreign Trade

Exports of processed crude and expanded perlite, primarily to Canada, were estimated to be 33,000 t, down by about 11% compared with those of 2008. This decrease was probably related to the decline in demand for horticultural grade perlite. Peat is abundant in Canada, and perlite is commonly mixed with peat and other ingredients to produce potting soils. The Republic of Korea was probably the second largest recipient of U.S. exports, receiving nearly 9,000 t. Besides these 2 countries, perlite was exported to about 20 other countries, but the average amount exported to each country was less than 1,000 t. The value of exports could not be calculated based on available information, but the average prices quoted previously could be applied.

Imports of processed crude perlite, almost exclusively from Greece, decreased by 18% to about 153,000 t compared with those of 2008. S&B Industrial Minerals S.A., Kifissia, Greece, reported in its annual report for 2009 that perlite revenues were down by 18% compared with those of 2008 (S&B Industrial Minerals, S.A., 2010, p. 8). S&B Industrial Minerals was the primary supplier of processed crude perlite imports to the United States. Based on information from the U.S. Census Bureau, the average customs value of perlite imports in 2009 was estimated to be \$104 per ton, a decrease of nearly 21% from that of 2008. If insurance and freight costs (\$11.51 per ton) were added to the value of the imports, the total average value of imports was \$116 per ton, also a decrease of about 21% compared with the total average value in 2008. These decreases in the price of imported perlite were probably in response to decreased fuel costs and an increased availability of ocean transport during 2009. Most imported perlite arrives through the ports of Brunswick, GA; Mobile, AL; Philadelphia, PA; and Wilmington, DE. After arriving at one of these ports, the perlite is shipped to expanding plants throughout the States east of the Mississippi River.

## World Review

Based on available information, the United States was estimated to be the leading consumer of processed crude and expanded perlite in 2009. Greece was estimated to have produced about 525,000 t and sold or used the largest amount of perlite among the countries listed in table 4. Other leading producers of processed crude perlite were, in descending order, the United States, Turkey, and Japan. In 2009, 15 countries produced 1.65 million metric tons of perlite, down about 8% compared with global production in 2008. Owing to a lack of reliable information, however, this total does not include all

major producing countries, such as China, which was probably the leading or second ranked producer in the world.

## Outlook

Total consumption of processed and expanded perlite in the United States in 2010 was expected to remain at the historically low levels of 2009. With the economic recession, which was characterized by lackluster construction activity, including the continuing slump in housing and office construction, the historically low perlite consumption seen in 2009 is expected to continue. Perlite imports in 2010 were expected to be essentially unchanged from 2009 levels. Prices for crude processed perlite increased only slightly in 2009, but prices for expanded perlite increased substantially in 2009. For 2010, prices for crude processed perlite and expanded perlite could remain near 2009 levels because price increases might be difficult to achieve amidst weak demand and strong competition.

Perlite expanding plants, mostly in the Eastern United States, continued to purchase imported perlite and offer strong competition to domestic perlite producers. Imported perlite has supplied about one-third of the demand for processed crude perlite in the United States in 3 of the past 4 years, and that trend is expected to continue contingent upon the availability and cost of ocean freight. This strong competition from other countries is expected to continue in the coming years as domestic and foreign suppliers fight for market share amidst fluctuating transportation costs, whether rail or ocean freight.

## Reference Cited

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## GENERAL SOURCES OF INFORMATION

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TABLE 1  
 PERLITE MINED, PROCESSED, AND EXPANDED IN THE UNITED STATES<sup>1</sup>

(Thousand metric tons and thousand dollars unless otherwise specified)

	2005	2006	2007	2008	2009
Perlite mined <sup>2</sup>	606	516	516	524	304
Processed crude perlite:					
Sold to expanders:					
Quantity	406	360	324	337	263
Value	16,500	15,600	15,000	16,400	13,100
Average value      dollars per metric ton	41	43	46	49	50
Used at own plants to make expanded perlite:					
Quantity	103	95	85	98	85
Value	4,200	3,850	3,550	4,450	4,000
Average value      dollars per metric ton	41	41	42	45	47
Total, sold and used:					
Quantity	508	454	409	434	348
Value	20,700	19,500	18,500	20,800	17,100
Average value      dollars per metric ton	41	43	45	48	49
Expanded perlite:					
Production, quantity	677	646	577	554	450
Sold or used:					
Quantity	677	644	575	548	439
Value	165,000	165,000	155,000	153,000	132,000
Average value      dollars per metric ton	243	256	269	279	302

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

<sup>2</sup>Crude ore mined and stockpiled for processing.

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

State	2008				2009			
	Production, quantity (metric tons)	Sold or used		Average value <sup>2</sup> (dollars per metric ton)	Production, quantity (metric tons)	Sold or used		Average value <sup>2</sup> (dollars per metric ton)
		Quantity (metric tons)	Value (thousands)			Quantity (metric tons)	Value (thousands)	
California	33,200	33,000	\$11,700	353	29,100	28,700	\$10,800	376
Florida	25,600	25,300	7,470	295	21,300	21,000	7,120	338
Indiana	16,000	15,800	5,700	359	12,900	12,800	4,710	369
Michigan	21,700	21,700	5,750	265	21,800	21,200	5,460	258
Nevada	10,900	10,900	4,890	450	11,100	11,100	4,980	448
Pennsylvania	52,700	52,700	11,800	224	47,700	47,700	11,200	235
Other <sup>3</sup>	393,000	389,000	106,000	272	306,000	296,000	88,100	292
Total or average	554,000	548,000	153,000	279	450,000	439,000	132,000	302

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

<sup>2</sup>Average value is based on unrounded data and is rounded to the nearest dollar.

<sup>3</sup>Includes Alabama, Arizona, Arkansas, Colorado, Georgia, Idaho, Illinois, Louisiana, Maine, Massachusetts, Minnesota, Mississippi, Missouri, New Jersey, North Carolina, Ohio, Oklahoma, Oregon, Tennessee, Texas, Wisconsin, and Wyoming.

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

Use	2008			2009		
	Quantity (metric tons)	Value (thousands)	Average value <sup>2</sup> (dollars per metric ton)	Quantity (metric tons)	Value (thousands)	Average value <sup>2</sup> (dollars per metric ton)
Concrete aggregate	2,400	\$836	348	2,440	\$973	398
Fillers	68,800	32,100	467	62,700	28,900	461
Filter aid	44,200	16,900	383	37,200	14,500	391
Formed products <sup>3</sup>	310,000	57,800	186	222,000	43,200	195
Horticultural aggregate	71,400	27,100	380	63,600	27,100	427
Laundries	832	246	295	1,020	251	247
Low-temperature insulation	1,600	845	527	1,990	1,110	559
Masonry- and cavity-fill insulation	3,090	1,350	438	2,600	1,190	459
Plaster aggregate	5,400	1,800	333	4,880	1,720	352
Other <sup>4</sup>	40,400	14,100	348	40,000	13,400	334
Total or average	548,000	153,000	279	439,000	132,000	302

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

<sup>2</sup>Average value is based on unrounded data and is rounded to the nearest dollar.

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

<sup>4</sup>Includes explosives, high-temperature insulation, paint, refractory, soap, steel, sugar manufacture, and unspecified uses.

TABLE 4  
PERLITE: ESTIMATED WORLD PRODUCTION, BY COUNTRY<sup>1, 2</sup>

(Metric tons)

Country <sup>3</sup>	2005	2006	2007	2008	2009
Armenia	35,000	35,000	35,000	35,000	35,000
Australia <sup>4</sup>	6,000	6,500	7,000	7,000	6,500
Georgia	45,000	45,000	45,000	45,000	45,000
Greece <sup>5</sup>	525,000	525,000	525,000	525,000	525,000
Hungary <sup>4</sup>	65,000	71,000	67,000	67,000 <sup>r</sup>	65,000
Iran	31,000	40,000	30,000	30,000	30,000
Italy	60,000	60,000	60,000	60,000	60,000
Japan	240,000	240,000	230,000	230,000	220,000
Mexico <sup>4</sup>	91,724 <sup>6</sup>	41,219 <sup>6</sup>	41,000	54,405 <sup>6</sup>	54,400
Philippines	4,410 <sup>6</sup>	4,352 <sup>6</sup>	4,515 <sup>6</sup>	4,593 <sup>r, 6</sup>	4,600
Slovakia	13,000	16,000 <sup>r</sup>	20,000	25,000 <sup>r</sup>	25,000
South Africa	400	400	400	400	400
Turkey <sup>4</sup>	156,935 <sup>6</sup>	260,000	270,000	270,000	230,000
United States <sup>7</sup>	508,000 <sup>6</sup>	454,000 <sup>6</sup>	409,000 <sup>6</sup>	434,000 <sup>6</sup>	348,000 <sup>6</sup>
Zimbabwe	4,000	3,000	3,000	3,000	3,000
Total	1,790,000	1,800,000 <sup>r</sup>	1,750,000	1,790,000	1,650,000

<sup>r</sup>Revised.

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

<sup>2</sup>Unless otherwise stated, figures represent processed ore output. Table contains data available through May 12, 2010.

<sup>3</sup>In addition to the countries listed, Djibouti started perlite production in 2009, and Algeria, Bulgaria, China, Cyprus, Iceland, Morocco, Mozambique, and Russia are thought to have produced perlite, but output is not reported, and available information is inadequate to estimate output.

<sup>4</sup>Crude ore.

<sup>5</sup>Crude perlite screened and sold.

<sup>6</sup>Reported figure.

<sup>7</sup>Processed ore sold and used by producers.