

## PERLITE

(Data in thousand metric tons unless otherwise specified)

**Domestic Production and Use:** In 2023, the quantity of domestic processed crude perlite sold and used was estimated to be 450,000 tons with a value of \$30 million. Crude ore production was from nine mines operated by six companies in six Western States. New Mexico continued to be the leading producing State. Domestic apparent consumption of crude perlite was estimated to be 610,000 tons. Processed crude perlite was expanded at 51 plants in 27 States. The applications for expanded perlite were building construction products, 47%; horticultural aggregate, 16%; fillers, 15%; filter aids, 14%; and other, 8%. Other applications included specialty insulation and miscellaneous uses.

| <b>Salient Statistics—United States:</b>                                 | <b>2019</b> | <b>2020</b> | <b>2021</b> | <b>2022</b> | <b>2023<sup>e</sup></b> |
|--|-------------|-------------|-------------|-------------|-------------------------|
| Mine production, crude ore   | 629         | 853         | 879         | 672         | 650                     |
| Sold and used, processed crude perlite                                   | 397         | 501         | 491         | 458         | 450                     |
| Imports for consumption <sup>1</sup>                                     | 180         | 160         | 170         | 240         | 170                     |
| Exports <sup>1</sup>   | 19          | 25          | 27          | 22          | 15                      |
| Consumption, apparent <sup>2</sup>                                       | 560         | 640         | 630         | 680         | 610                     |
| Price, average value, free on board mine, dollars per metric ton         | 64          | 61          | 64          | 68          | 68                      |
| Employment, mine and mill, number  | 140         | 140         | 150         | 150         | 150                     |
| Net import reliance <sup>3</sup> as a percentage of apparent consumption | 29          | 21          | 23          | 32          | 26                      |

**Recycling:** Not available.

**Import Sources (2019–22):** Greece, 92%; China, 5%; Mexico, 2%; and other, 1%.

| <b>Tariff:</b> | <b>Item</b>                                     | <b>Number</b> | <b>Normal Trade Relations<br/>12–31–23</b> |
|----------------|---|---------------|--|
|                | Vermiculite, perlite, and chlorites, unexpanded | 2530.10.0000  | Free.                                      |

**Depletion Allowance:** 10% (domestic and foreign).

**Government Stockpile:** None.

**Events, Trends, and Issues:** Perlite is a siliceous volcanic glass that expands up to 20 times its original volume when rapidly heated. Construction applications for expanded perlite are numerous because it is fire resistant, an excellent insulator, and lightweight. In horticultural uses, expanded perlite is used to provide moisture retention and aeration without compaction when added to soil. Horticultural perlite is useful to both commercial growers and hobby gardeners. Owing primarily to cost, some commercial greenhouse growers in the United States have recently switched to a wood fiber material instead of perlite. Perlite, however, remained a preferred soil amendment for segments of greenhouse growers because it does not degrade or compact over lengthy growing times and is inert. Perlite has replaced vermiculite in some horticulture products owing to producer obstacles in acquiring vermiculite. Cosmetics, environmental remediation, and personal care products have become increasing markets for perlite.

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The amount of processed perlite sold or used from U.S. mines dropped to its lowest level since 2019. Imports also decreased from those in 2022, as apparent consumption dropped to about 610,000 tons. The value of total construction put in place in the United States increased by about 4% during the first 8 months of 2023 compared with that of the same period in 2022, indicating a stable consumption of perlite for construction products despite a decrease in apparent consumption for 2023.

Based on estimated world production for 2023, the world's leading producers were, in descending order of production, China, Turkey, Greece, and the United States, accounting for about 30%, 28%, 22%, and 9%, respectively, of world production. Although China was the leading producer, most of its perlite production was thought to be consumed internally. Greece and Turkey remained the leading exporters of perlite.

**World Mine Production and Reserves:** Reserves data for China, Greece, Hungary, Iran, Slovakia, and Turkey were revised based on company and Government reports.

|                              | Production       |                   | Reserves <sup>4</sup> |
|------------------------------|------------------|-------------------|-----------------------|
|                              | 2022             | 2023 <sup>e</sup> |                       |
| United States                | <sup>5</sup> 458 | <sup>5</sup> 450  | 50,000                |
| Argentina <sup>e</sup>       | 18               | 20                | NA                    |
| Armenia <sup>e</sup>         | 170              | 180               | NA                    |
| China <sup>e</sup>           | 1,500            | 1,500             | 32,000                |
| Georgia                      | 20               | 20                | NA                    |
| Greece <sup>e</sup>          | 1,100            | 1,100             | 180,000               |
| Hungary <sup>e</sup>         | 77               | 80                | NA                    |
| Iran <sup>e</sup>            | 77               | 80                | 15,000                |
| Mexico <sup>e</sup>          | 24               | 20                | NA                    |
| New Zealand <sup>e</sup>     | 18               | 20                | NA                    |
| Philippines                  | 25               | 20                | NA                    |
| Slovakia <sup>e</sup>        | 35               | 40                | 30,000                |
| Turkey <sup>e</sup>          | 1,400            | 1,400             | NA                    |
| Other countries <sup>e</sup> | 14               | 10                | NA                    |
| World total (rounded)        | 4,940            | 4,900             | NA                    |

**World Resources:**<sup>4</sup> Perlite occurrences in Arizona, California, Idaho, Nevada, New Mexico, and Oregon may contain large resources. Significant deposits have been reported in China, Greece, Turkey, and a few other countries. Available information was insufficient to make reliable estimates of resources in many perlite-producing countries.

**Substitutes:** In construction applications, diatomite, expanded clay and shale, pumice, and slag can be substituted for perlite. For horticultural uses, coco coir, pumice, vermiculite, and wood pulp are alternative soil additives and are sometimes used in conjunction with perlite.

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

<sup>1</sup>Exports and imports were estimated by the U.S. Geological Survey from U.S. Census Bureau combined data for vermiculite, perlite, and chlorites, unexpanded. Data are rounded to two significant digits.

<sup>2</sup>Defined as processed crude perlite sold and used + imports – exports. Data are rounded to two significant digits.

<sup>3</sup>Defined as imports – exports.

<sup>4</sup>See Appendix C for resource and reserve definitions and information concerning data sources.

<sup>5</sup>Processed ore sold and used by producers.