

## PUMICE AND PUMICITE

(Data in thousand metric tons unless otherwise noted)

**Domestic Production and Use:** In 2022, 10 operations in five States produced pumice and pumicite. Estimated production<sup>1</sup> was 510,000 tons with an estimated processed value of about \$30 million, free on board (f.o.b.) plant. That represented an increase in both quantity and value from the 2021 reported production of 504,000 tons valued at \$23.2 million. Pumice and pumicite were mined in California, Idaho, Kansas, New Mexico, and Oregon. The porous, lightweight properties of pumice are well suited for its main uses. Mined pumice was used in the production of abrasives, concrete admixtures and aggregates, lightweight building blocks, horticultural purposes, and other uses, including absorbent, filtration, laundry stone washing, and road use.

**Salient Statistics—United States:**

|  | <b>2018</b> | <b>2019</b> | <b>2020</b> | <b>2021</b> | <b>2022<sup>e</sup></b> |
|--|-------------|-------------|-------------|-------------|-------------------------|
| Production, mine <sup>1</sup>  | 496         | 565         | 578         | 504         | 510                     |
| Imports for consumption  | 159         | 136         | 90          | 87          | 100                     |
| Exports  | 11          | 11          | 8           | 11          | 15                      |
| Consumption, apparent <sup>2</sup>                                       | 644         | 690         | 660         | 581         | 600                     |
| Price, average unit value, f.o.b. mine or mill, dollars per metric ton   | 32          | 28          | 31          | 46          | 50                      |
| Employment, mine and mill, number  | 140         | 140         | 140         | 140         | 140                     |
| Net import reliance <sup>3</sup> as a percentage of apparent consumption | 23          | 18          | 12          | 13          | 14                      |

**Recycling:** Little to no known recycling.

**Import Sources (2018–21):** Greece, 92%; Iceland, 5%; and other, 3%.

| <b>Tariff:</b> Item  | <b>Number</b> | <b>Normal Trade Relations<br/>12–31–22</b> |
|--|---------------|--|
| Pumice, crude or in irregular pieces, including<br>crushed | 2513.10.0010  | Free.                                      |
| Pumice, other  | 2513.10.0080  | Free.                                      |

**Depletion Allowance:** 5% (domestic and foreign).

**Government Stockpile:** None.

**Events, Trends, and Issues:** The amount of domestically produced pumice and pumicite sold or used in 2022 was estimated to be slightly more than that in 2021. Imports and exports were estimated to have increased compared with those in 2021. Almost all imported pumice originated from Greece in 2022 and primarily supplied markets in the eastern and gulf coast regions of the United States.

Pumice and pumicite are plentiful in the Western States, but legal challenges and public land designations could limit access to known deposits. Production of pumice and pumicite is sensitive to mining and transportation costs.

All known domestic pumice and pumicite mining in 2022 was accomplished through open pit methods, generally in remote areas away from major population centers. Although the generation and disposal of reject fines in mining and milling may result in local dust issues at some operations, such environmental impacts were thought to be restricted to relatively small geographic areas.

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World production of pumice and related material was estimated to be 15 million tons in 2022, which was essentially unchanged from that in 2021. Turkey, followed by Uganda, was the leading global producer of pumice and pumicite. Pumice is used more extensively as a building material outside the United States, which explained the large global production of pumice relative to that of the United States. In Europe, basic home construction uses stone and concrete as the preferred building materials. Prefabricated lightweight concrete walls, which may contain pumice as lightweight aggregate, are often produced and shipped to construction locations. Because of their cementitious properties, light weight, and strength, pumice and pumicite perform well in European-style construction.

### World Mine Production and Reserves:

|                              | Mine production |                   | Reserves <sup>7</sup>   |
|------------------------------|-----------------|-------------------|---|
|                              | 2021            | 2022 <sup>e</sup> |   |
| United States <sup>1</sup>   | 504             | 510               | Large in the United States.   |
| Algeria <sup>6</sup>         | 900             | 900               | Quantitative estimates of reserves for most countries were not available. |
| Cameroon <sup>6</sup>        | 110             | 110               |   |
| Chile <sup>6</sup>           | 670             | 670               |   |
| Ecuador <sup>6</sup>         | 800             | 800               |   |
| Ethiopia                     | 510             | 510               |   |
| France <sup>6</sup>          | 280             | 300               |   |
| Greece <sup>6</sup>          | 960             | 960               |   |
| Guadeloupe                   | 200             | 200               |   |
| Guatemala                    | 570             | 570               |   |
| Iceland                      | 100             | 100               |   |
| Jordan                       | 900             | 900               |   |
| Saudi Arabia <sup>6</sup>    | 550             | 550               |   |
| Spain                        | 240             | 240               |   |
| Syria <sup>6</sup>           | 200             | 200               |   |
| Tanzania                     | 160             | 160               |   |
| Turkey                       | 5,400           | 5,400             |   |
| Uganda                       | 1,130           | 1,100             |   |
| Other countries <sup>6</sup> | 710             | 820               |   |
| World total (rounded)        | 14,900          | 15,000            |   |

**World Resources:**<sup>4</sup> The identified U.S. resources of pumice and pumicite, estimated to be more than 25 million tons, are concentrated in the Western States. The estimated total resources (identified and undiscovered) in the Western and Great Plains States are at least 250 million tons and may total more than 1 billion tons. Large resources of pumice and pumicite have been identified on all continents.

**Substitutes:** The costs of transportation determine the maximum economic distance pumice and pumicite can be shipped and still remain competitive with alternative materials. Competitive materials that may be substituted for pumice and pumicite include crushed aggregates, diatomite, expanded shale and clay, and vermiculite.

<sup>1</sup>Estimated.

<sup>2</sup>Quantity sold and used by producers.

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

<sup>4</sup>Defined as imports – exports.

<sup>5</sup>See Appendix C for resource and reserve definitions and information concerning data sources.

<sup>6</sup>Reported.

<sup>7</sup>Includes pozzolan and (or) volcanic tuff.