

## PUMICE AND PUMICITE

(Data in thousand metric tons unless otherwise noted)

**Domestic Production and Use:** In 2019, 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 \$17 million, free on board (f.o.b.) plant. Pumice and pumicite were mined in California, Oregon, Idaho, New Mexico, and Kansas, in descending order of production. 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.

<b>Salient Statistics—United States:</b>	<b>2015</b>	<b>2016</b>	<b>2017</b>	<b>2018</b>	<b>2019<sup>e</sup></b>
Production, mine <sup>1</sup>	310	374	383	496	510
Imports for consumption	64	170	166	159	110
Exports <sup>e</sup>	11	9	11	11	12
Consumption, apparent <sup>2</sup>	363	535	538	644	610
Price, average value, dollars per ton, f.o.b. mine or mill	33	38	39	32	33
Employment, mine and mill, number	140	140	140	140	140
Net import reliance <sup>3</sup> as a percentage of apparent consumption	15	30	29	23	17

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

**Import Sources (2015–18):** Greece, 93%; Iceland, 5%; and Mexico, 2%.

<b>Tariff: Item</b>	<b>Number</b>	<b>Normal Trade Relations 12–31–19</b>
Pumice, crude or in irregular pieces, including 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 2019 was estimated to be 3% more than that in 2018. Imports were estimated to have decreased, and exports increased compared with those of 2018. Since 2015, apparent consumption and quantity of pumice that was sold or used had followed an upward trend until 2019. Almost all imported pumice originated from Greece in 2019, and primarily supplied markets in the eastern and Gulf Coast regions of the United States. Turkey, followed by Greece, was the leading global producer of pumice and pumicite. Although the domestic mill price for pumice was approximately \$33 per ton, the average imported value of pumice was approximately \$44 per ton.

Pumice and pumicite are plentiful in the Western United States, but legal challenges and public land designations could limit access to known deposits. Pumice and pumicite production is sensitive to mining and transportation costs. Although unlikely in the short term, an increase in fuel prices would likely lead to increases in production costs, making imports and competing materials attractive substitutes for domestic products.

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All known domestic pumice and pumicite mining in 2019 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 are thought to be restricted to relatively small geographic areas.

World production of pumice and related material was estimated to be 18 million tons in 2019, which was essentially unchanged from that of 2018. 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>4</sup>
	2018	2019 <sup>e</sup>	
United States <sup>1</sup>	496	510	Large in the United States. Quantitative estimates of reserves for most countries are not available.
Algeria <sup>5</sup>	900	900	
Cameroon <sup>5</sup>	300	300	
Chile <sup>5</sup>	840	800	
Ecuador <sup>5</sup>	630	600	
Ethiopia	800	800	
France <sup>5</sup>	280	300	
Greece <sup>5</sup>	1,130	1,100	
Guadeloupe	200	200	
Guatemala	570	600	
Indonesia	770	770	
Jordan	900	900	
Saudi Arabia <sup>5</sup>	530	550	
Spain	200	200	
Syria <sup>5</sup>	200	200	
Turkey <sup>6</sup>	7,800	7,800	
Uganda	790	800	
Other countries <sup>5</sup>	760	670	
World total (rounded)	18,100	18,000	

**World Resources:** The identified U.S. resources of pumice and pumicite are concentrated in the Western States and estimated to be more than 25 million tons. 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>e</sup>Estimated.

<sup>1</sup>Quantity sold and used by producers.

<sup>2</sup>Defined as production + imports – exports.

<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>Includes pozzolan and (or) volcanic tuff.

<sup>6</sup>Data reported from a separate official Turkish source indicated a production of 3,430,000 tons in 2018.