

## DIATOMITE

(Data in thousand metric tons unless otherwise noted)

**Domestic Production and Use:** In 2017, production of diatomite was estimated to be 700,000 tons with an estimated processed value of \$200 million, f.o.b. plant. Six companies produced diatomite at 12 mining areas and 9 processing facilities in California, Nevada, Oregon, and Washington. Diatomite is used in filtration, 50%; lightweight aggregates, 30%; fillers, 15%; absorbents, 5%; and other applications, less than 1%, including specialized pharmaceutical and biomedical uses. The unit value of diatomite varied widely in 2017, from approximately \$10 per ton when used as a lightweight aggregate in portland cement to more than \$1,000 per ton for limited specialty markets, including art supplies, cosmetics, and DNA extraction.

<b>Salient Statistics—United States:</b>	<b>2013</b>	<b>2014</b>	<b>2015</b>	<b>2016</b>	<b>2017<sup>e</sup></b>
Production <sup>1</sup>	782	901	832	686	700
Imports for consumption	1	4	7	8	10
Exports	92	82	75	66	95
Consumption, apparent <sup>2</sup>	691	823	765	628	615
Price, average value, dollars per ton, f.o.b. plant	293	298	291	284	290
Employment, mine and plant, number <sup>e</sup>	750	750	750	750	750
Net import reliance <sup>3</sup> as a percentage of apparent consumption	E	E	E	E	E

**Recycling:** None.

**Import Sources (2013–16):** Canada, 72%; Mexico, 13%; Germany, 5%; Japan, 4%; and other, 6%.

<b>Tariff:</b>	<b>Item</b>	<b>Number</b>	<b>Normal Trade Relations 12–31–17</b>
	Siliceous fossil meals, including diatomite	2512.00.0000	Free.

**Depletion Allowance:** 14% (Domestic and foreign).

**Government Stockpile:** None.

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**Events, Trends, and Issues:** The amount of domestically produced diatomite sold or used by producers in 2017 increased slightly compared with that of 2016. Apparent domestic consumption decreased slightly in 2017 to an estimated 615,000 tons; exports increased by an estimated 44%. The United States remained the leading global consumer. Filtration (including the purification of beer, liquors, and wine and the cleansing of greases and oils) continued to be the leading end use for diatomite, also known as diatomaceous earth. Domestically, diatomite used in the production of cement was the next largest use. An important application for diatomite is the removal of microbial contaminants, such as bacteria, protozoa, and viruses in public water systems. Other applications for diatomite include filtration of human blood plasma, pharmaceutical processing, and use as a nontoxic insecticide.

In 2017, the United States was the leading producer of diatomite, accounting for 23% of total world production, followed by Czechia and Denmark with 15% each, China with 14%, Argentina with 7%, and Peru with 4%. Smaller quantities of diatomite were mined in 23 additional countries.

### World Mine Production and Reserves:

	Mine production		Reserves <sup>4</sup>
	<u>2016</u>	<u>2017<sup>e</sup></u>	
United States <sup>1</sup>	686	700	250,000
Argentina	200	200	NA
China	420	420	110,000
Czechia	450	450	NA
Denmark <sup>5</sup> (processed)	440	440	NA
France	75	75	NA
Japan	100	100	NA
Korea, Republic of	70	70	NA
Mexico	90	90	NA
Peru	120	120	NA
Russia	70	70	NA
Spain	50	50	NA
Turkey	60	60	44,000
Other countries	<u>120</u>	<u>120</u>	<u>NA</u>
World total (rounded)	2,950	3,000	Large

**World Resources:** World resources of crude diatomite are adequate for the foreseeable future.

**Substitutes:** Many materials can be substituted for diatomite. However, the unique properties of diatomite assure its continuing use in many applications. Expanded perlite and silica sand compete for filtration. Filters made from manufactured materials, notably ceramic, polymeric, or carbon membrane filters and filters made with cellulose fibers, are becoming competitive as filter media. Alternate filler materials include clay, ground limestone, ground mica, ground silica sand, perlite, talc, and vermiculite. For thermal insulation, materials such as various clays, exfoliated vermiculite, expanded perlite, mineral wool, and special brick can be used. Transportation costs will continue to determine the maximum economic distance that most forms of diatomite may be shipped and still remain competitive with alternative materials.

<sup>e</sup>Estimated. E Net exporter. NA Not available.

<sup>1</sup>Processed ore 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 sales of moler production.