

DIATOMITE

(Data in thousand metric tons unless otherwise specified)

Domestic Production and Use: In 2024, production of diatomite, also known as diatomaceous earth, was estimated to be 880,000 tons with an estimated processed value of \$520 million, free on board (f.o.b.) plant. Six companies produced diatomite at 12 mining areas and 9 processing facilities in California, Nevada, Oregon, and Washington. Approximately 65% of diatomite was used in filtration products. The remaining 35% was used in absorbents, lightweight aggregates, fillers, and other applications. A small amount, less than 1%, was used for specialized pharmaceutical and biomedical purposes. The unit value of diatomite varied widely in 2024, from approximately \$10 per metric ton when used as a lightweight aggregate in portland cement concrete to more than \$1,000 per metric ton for limited specialty markets, including art supplies, cosmetics, and deoxyribonucleic acid (DNA) extraction. The price for diatomite used for filtration was approximately \$790 per metric ton.

| Salient Statistics—United States: | 2020 | 2021 | 2022 | 2023 | 2024^e |
|--|-------------|-------------|-------------|-------------|-------------------------|
| Production ¹ | 822 | 998 | 827 | 849 | 880 |
| Imports for consumption | 14 | 14 | 14 | 12 | 15 |
| Exports | 66 | 68 | 64 | 53 | 70 |
| Consumption, apparent ² | 769 | 944 | 777 | 808 | 830 |
| Price, average value, f.o.b. plant, dollars per metric ton | 326 | 410 | 416 | 580 | 590 |
| Employment, mine and plant, number ^e | 370 | 370 | 370 | 370 | 370 |
| Net import reliance ³ as a percentage of apparent consumption | E | E | E | E | E |

Recycling: None.

Import Sources (2020–23): Canada, 57%; Mexico, 15%; Germany, 11%; Argentina, 7%; and other, 10%.

| Tariff: Item | Number | Normal Trade Relations 12–31–24 |
|---|---------------|--|
| Siliceous fossil meals, including diatomite | 2512.00.0000 | Free. |

Depletion Allowance: 14% (domestic and foreign).

Government Stockpile: None.

Events, Trends, and Issues: The amount of domestically produced diatomite sold or used by producers in 2024 was 4% higher than that in 2023. Apparent consumption in 2024 was an estimated 830,000 tons, slightly more than that in 2023. Exports were estimated to have increased by 32% compared with those in 2023. The United States remained the leading global producer and consumer of diatomite. Filtration (including the cleansing of greases and oils and the purification of beer, liquors, water, and wine) continued to be the leading end use for diatomite. An important application for diatomite is the removal of microbial contaminants, such as bacteria, protozoa, and viruses in public water systems. Diatomite continued to be widely used as an inert carrier for pesticides and as an anticaking agent in animal feeds. Caution in the processing and use of diatomite was suggested because many forms contain crystalline silica, which is known to cause cancer, birth defects, or other reproductive harm to humans when exposed to levels above permissible levels.

In April, a leading global producer of industrial minerals headquartered in France entered into negotiations with a Pittsburgh, PA, based global company to acquire its European diatomite and perlite business. The acquisition, which consists of three mining and industrial assets in France and Italy, is expected to be completed by the end of 2024.

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In 2024, the United States accounted for an estimated 29% of total world production, followed by Denmark with 18%; China with 12%; and France and Turkey, with 8% each. Smaller quantities of diatomite were mined in 23 additional countries. World production of diatomite in 2024 was essentially unchanged from that in 2023.

World Mine Production and Reserves: Reserves for China, France, and the Republic of Korea were revised based on Government reports.

| | Mine production ^e | | Reserves ⁴ |
|----------------------------------|------------------------------|-------|-----------------------|
| | 2023 | 2024 | |
| United States ¹ | 849 | 880 | 250,000 |
| Argentina | 100 | 100 | NA |
| China | 370 | 370 | 120,000 |
| Czechia | 44 | 40 | NA |
| Denmark (processed) ⁵ | 530 | 530 | NA |
| France | 250 | 250 | 1,000 |
| Germany | 50 | 50 | NA |
| Korea, Republic of | 50 | 50 | 2,200 |
| Mexico | 100 | 100 | NA |
| Mozambique | 50 | 50 | NA |
| Peru | 100 | 100 | NA |
| Russia | 50 | 50 | NA |
| Spain | 50 | 50 | 57,000 |
| Turkey | 240 | 240 | 44,000 |
| Other countries | 172 | 170 | NA |
| World total (rounded) | 3,010 | 3,000 | Large |

World Resources:⁴ Diatomite deposits form from an accumulation of amorphous hydrous silica cell walls of dead diatoms in oceanic and fresh waters. Diatomite is also known as kieselguhr (Germany), moler (an impure Danish form), and tripolite (after an occurrence near Tripoli, Libya). Because U.S. diatomite occurrences are at or near Earth's surface, recovery from most deposits is achieved through low-cost, open pit mining. Outside the United States, however, underground mining is fairly common owing to deposit location and topographic constraints. 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 continued 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.

^eEstimated. E Net exporter. NA Not available.

¹Processed ore sold or used by producers.

²Defined as production + imports – exports.

³Defined as imports – exports.

⁴See Appendix C for resource and reserve definitions and information concerning data sources.

⁵Includes sales of moler production.