

BARITE

(Data in thousand metric tons unless otherwise specified)

Domestic Production and Use: In 2024, three companies mined barite at four operations in Nevada. Mine production increased, but data were withheld to avoid disclosing company proprietary data. An estimated 2.3 million tons of barite (from domestic production and imports) was sold by crushers and grinders operating in nine States.

Typically, more than 90% of the barite sold in the United States is used as a weighting agent in fluids used in the drilling of oil and natural gas wells. The majority of Nevada crude barite was ground in Nevada and then sold to companies drilling in the Central and Western United States. Because of the higher cost of rail and truck transportation compared to ocean freight, offshore drilling operations in the Gulf of Mexico and onshore drilling operations in other regions primarily used imported barite.

Barite also is used as a filler, extender, or weighting agent in products such as paints, plastics, and rubber. Some specific applications include use in automobile brake and clutch pads, in automobile paint primer for metal protection and gloss, as a weighting agent in rubber, and in the cement jacket around underwater petroleum pipelines. In the metal-casting industry, barite is part of the mold-release compounds. Because barite significantly blocks X-ray and gamma-ray emissions, it is used as aggregate in high-density concrete for radiation shielding around X-ray units in hospitals, nuclear powerplants, and university nuclear research facilities. Ultrapure barite is used as a contrast medium in X-ray and computed tomography examinations of the gastrointestinal tract.

<u>Salient Statistics—United States:</u>	2020	2021	2022	2023	2024^e
Production:					
Sold or used, mine	W	W	W	W	W
Ground and crushed ¹	1,410	1,670	2,220	2,260	2,300
Imports: ²					
For consumption	1,480	1,660	2,330	2,420	2,000
General	869	1,440	1,890	2,220	1,900
Exports ³	48	62	87	75	65
Consumption, apparent (crude and ground) ⁴	W	W	W	W	W
Price, average unit value, ground, ex-works, dollars per metric ton	183	167	145	223	220
Employment, mine and mill, number ^e	360	330	380	440	440
Net import reliance ⁵ as a percentage of apparent consumption	>75	>75	>75	>75	>75

Recycling: None.

Import Sources (2020–23): India, 40%; China,⁶ 25%; Morocco, 17%; Mexico, 14%; and other, 4%.

<u>Tariff:</u>	<u>Item</u>	<u>Number</u>	<u>Normal Trade Relations</u>
			<u>12-31-24</u>
Ground barite	2511.10.1000		Free.
Crude barite	2511.10.5000		\$1.25 per metric ton.
Barium compounds:			
Barium oxide, hydroxide, and peroxide	2816.40.2000		2% ad valorem.
Barium chloride	2827.39.4500		4.2% ad valorem.
Barium sulfate, precipitated	2833.27.0000		0.6% ad valorem.
Barium carbonate, precipitated	2836.60.0000		2.3% ad valorem.

Depletion Allowance: 14% (domestic and foreign).

Government Stockpile: None.

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Events, Trends, and Issues: Rig counts for oil and gas production are often used as an indicator of barite consumption. However, barite use per rig has been increasing owing to deeper oil and gas wells that require fewer rigs for oil and gas production. Through October 2024, the world annual average rig count excluding the United States was 1,169 compared with 1,154 in 2023. Increases in worldwide rig counts contributed to a slight increase in world barite production. At the beginning of 2024, the number of drill rigs⁷ operating in the United States was 622; by the end of October 2024, the number of rigs operating had declined to 585. Rig counts remained 39% lower than that in the same period in 2019 before the global coronavirus disease 2019 (COVID-19) pandemic in 2020. Despite the slowing pace of domestic drill counts, barite sales were estimated to have increased slightly.

World Mine Production and Reserves: In response to concerns about dwindling global reserves of 4.2-specific-gravity barite used by the oil- and gas-drilling industry, the American Petroleum Institute issued an alternate specification for 4.1-specific-gravity weighting agents in 2010. Estimated reserves data were included only if developed since the adoption of the 4.1-specific-gravity standard. Reserves for China, Iran, and Turkey were revised based on company and Government reports.

	Mine production ^e		Reserves ⁸
	2023	2024	
United States	W	W	NA
China	2,000	2,100	110,000
India	2,600	2,600	51,000
Iran	300	310	100,000
Kazakhstan	650	650	85,000
Laos	300	300	NA
Mexico	320	330	NA
Morocco	1,000	1,000	NA
Pakistan	130	130	NA
Russia	250	250	12,000
Turkey	⁹ 216	220	34,000
Other countries	<u>314</u>	<u>320</u>	<u>NA</u>
World total (rounded)	¹⁰ 8,080	¹⁰ 8,200	NA

World Resources:⁸ In the United States, identified resources of barite were estimated to be 150 million tons, and undiscovered resources contributed an additional 150 million tons. The world's barite resources in all categories were about 2 billion tons, but only about 740 million tons were identified resources.

Substitutes: Owing to technical and economic factors, there are no large-scale alternatives to barite in oil- and gas-drilling fluids. Calcium carbonate, hematite, ilmenite, and manganese tetroxide are the most common alternatives used in specific circumstances. Some technical literature and patents also mention use of celestite, iron carbonate, and strontium carbonate, but these are not estimated to be widely used.

^eEstimated. NA Not available. W Withheld to avoid disclosing company proprietary data.

¹Imported and domestic barite, crushed and ground, sold or used by domestic grinding establishments.

²Includes data for the following Harmonized Tariff Schedule of the United States codes: 2511.10.1000, 2511.10.5000, and 2833.27.0000. General imports and imports for consumption data differ because of barite processed in free trade zones. General import data reports the form of imported barite at the time it entered the United States, whereas imports for consumption data reports crude barite processed in free trade zones as ground. Imports for consumption may not be immediately reported depending on processing time.

³Includes data for the following Schedule B numbers: 2511.10.1000 and 2833.27.0000.

⁴Defined as mine production (sold or used) + imports for consumption – exports.

⁵Defined as imports for consumption – exports.

⁶Includes Hong Kong.

⁷Source: Baker Hughes Co., 2024, North America rotary rig count: Baker Hughes Co. (Accessed October 24, 2024, at <https://bakerhughesrigcount.gcs-web.com/na-rig-count.>)

⁸See Appendix C for resource and reserve definitions and information concerning data sources.

⁹Reported.

¹⁰Excludes U.S. production.