BARITE

(Data in thousand metric tons unless otherwise specified)

Domestic Production and Use: In 2023, three companies mined barite in Nevada. Mine production increased, but data were withheld to avoid disclosing company proprietary data. An estimated 2.5 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.

Salient Statistics—United States:	2019	2020	2021	2022	2023[e]
Production:					
Sold or used, mine	414	W	W	W	W
Ground and crushed[1]	2,350	1,410	1,670	2,200	2,500
Imports:[2]					
For consumption	2,500	1,480	1,660	2,330	2,500
General	2,330	869	1,440	1,890	2,400
Exports[3]	38	48	62	86	84
Consumption, apparent (crude and ground)[4]	2,880	W	W	W	W
Price, average unit value, ground, ex-works, dollars per metric ton	179	183	167	145	150
Employment, mine and mill, number[e]	480	360	330	380	390
Net import reliance[5] as a percentage of apparent consumption	86	>75	>75	>75	>75

Recycling: None.

Import Sources (2019–22): India, 36%; China,[6] 30%; Morocco, 17%; Mexico, 13%; and other, 4%.

Tariff: Item	Number	Normal Trade Relations 12–31–23
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: Historically, rig counts have been a good indicator of barite consumption. Through October 2023, the world annual average rig count excluding the United States was 1,120, an increase of 9% compared with that in 2022. In all countries or localities except for Canada, however, the average annual rig count remained below average counts in 2019, before the coronavirus disease 2019 (COVID-19) pandemic. Increases in worldwide rig counts contributed to an estimated 3% increase in world barite production. In the United States, the annual average rig count decreased slightly in 2023, and the monthly average rig count decreased throughout the year. Despite the slowing pace of domestic drilling activity, barite sales were estimated to have increased by more than 10%.

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 Government reports.

	Mine production[e]		Reserves[7]
	2022	2023	
United States	W	W	NA
China	1,900	1,900	92,000
India	2,700	2,700	51,000
Iran	300	300	38,000
Kazakhstan	650	600	85,000
Laos	[8]303	600	NA
Mexico	[8]316	260	NA
Morocco	1,200	1,200	NA
Russia	250	250	12,000
Turkey	250	250	NA
Other countries	394	430	NA
World total (rounded)	[9]8,260	[9]8,500	NA

World Resources:[7] 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.

[e]Estimated. NA Not available. W Withheld to avoid disclosing company proprietary data.

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

[2]Includes 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.

[3]Includes data for the following Schedule B codes: 2511.10.1000 and 2833.27.0000.

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

[5]Defined as imports for consumption – exports.

[6]Includes Hong Kong.

[7]See Appendix C for resource and reserve definitions and information concerning data sources.

[8]Reported.

[9]Excludes U.S. production.