

BARITE

(Data in thousand metric tons unless otherwise noted)

Domestic Production and Use: In 2016, about 316,000 tons of domestically mined crude barite valued at an estimated \$37.7 million was sold or used for grinding. Most of the production came from four mines in Nevada; a significantly smaller quantity came from a single mine in Georgia. An estimated 1.35 million tons of barite (from domestic production and imports) was sold by crushers and grinders operating in eight States. More than 90% of the barite sold in the United States was 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. 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, automobile paint primer for metal protection and gloss, use 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:	2012	2013	2014	2015	2016^e
Production:					
Sold or used, mine	666	723	663	425	316
Ground and crushed ¹	3,310	3,550	3,410	2,060	1,350
Imports for consumption	2,920	2,250	2,700	1,660	1,200
Exports	151	199	153	139	70
Consumption, apparent ² (crude and ground)	3,430	2,770	3,210	1,960	1,450
Estimated price, ground, average value, dollars per ton, f.o.b. mill	187	180	191	197	198
Employment, mine and mill, number	554	624	614	458	331
Net import reliance ³ as a percentage of apparent consumption	81	74	79	78	78

Recycling: None.

Import Sources (2012–15): China, 70%; India, 14%; Morocco, 7%; Mexico, 7%; and other, 2%.

Tariff: Item	Number	Normal Trade Relations 12–31–16
Ground barite	2511.10.1000	Free.
Crude barite	2511.10.5000	\$1.25 per metric ton.
Oxide, hydroxide, and peroxide	2816.40.2000	2% ad val.
Other chlorides	2827.39.4500	4.2% ad val.
Other sulfates of barium	2833.27.0000	0.6% ad val.
Carbonate	2836.60.0000	2.3% ad val.

Depletion Allowance: 14% (Domestic and foreign).

Government Stockpile: None.

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Events, Trends, and Issues: The count of active oil and gas drilling rigs has long been considered a good barometer of barite consumption. In 2016, the U.S. weekly average rig count reached its lowest level since the inception of the count in the 1940s. Domestic mine production and sales of ground barite are estimated to have reached the lowest levels since the 1990s.

Furloughs, reductions in staff, and reduced operating hours were common throughout the domestic barite industry. Activity at many mines was minimal, although operations were known to have been temporarily suspended at only one mine and its associated grinding plant. That same mine, however, continued work on a planned mine expansion. Another small mining project to remove existing benches and stockpiles from an abandoned mine in Nevada was completed in 2016. A third company began operations at a new grinding plant in Corpus Christi, TX.

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 barite in 2010. This has likely stimulated exploration and expansion of global barite resources. Estimated reserves data are included only if developed since the adoption of the 4.1-specific gravity standard. Reserves data for China and Pakistan were revised based on Government information.

	Mine production		Reserves ⁴
	<u>2015</u>	<u>2016^e</u>	
United States	425	316	NA
China	3,000	2,800	30,000
India	700	1,000	32,000
Iran	300	400	24,000
Kazakhstan	300	300	85,000
Mexico	266	250	NA
Morocco	1,000	700	NA
Pakistan	122	120	14,000
Russia	210	210	12,000
Thailand	171	170	18,000
Turkey	300	250	35,000
Vietnam	100	100	NA
Other countries	<u>520</u>	<u>520</u>	<u>29,000</u>
World total (rounded)	<u>7,410</u>	<u>7,140</u>	> 320,000

World Resources: In the United States, identified resources of barite are estimated to be 150 million tons, and undiscovered resources contribute an additional 150 million tons. The world's barite resources in all categories are about 2 billion tons, but only about 740 million tons is identified resources. However, no known systematic assessment of either U.S. or global barite resources has been conducted since the 1980s.

Substitutes: In the drilling mud market, alternatives to barite include celestite, ilmenite, iron ore, and synthetic hematite that is manufactured in Germany. None of these substitutes, however, has had a major impact on the barite drilling mud industry.

^eEstimated. NA Not available.

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

²Defined as sold or used by domestic mines + imports – exports.

³Defined as imports – exports.

⁴See [Appendix C](#) for resource and reserve definitions and information concerning data sources.