

## BARITE

(Data in thousand metric tons unless otherwise noted)

**Domestic Production and Use:** In 2015, about 700,000 tons of crude barite valued at an estimated \$91 million was sold or used for grinding. Most of the production came from four mines in Nevada; a significantly smaller sales volume came from a single mine in Georgia. An estimated 2.4 million tons of barite (from domestic production and imports) was sold by crushers and grinders operating in eight States. More than 97% 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. The barite imported to Louisiana and Texas mostly went to offshore drilling operations in the Gulf of Mexico and to onshore drilling operations in Louisiana, Oklahoma, and Texas.

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 consumed as liquid is used as a contrast medium in medical x-ray examinations.

<b>Salient Statistics—United States:</b>	<b>2011</b>	<b>2012</b>	<b>2013</b>	<b>2014</b>	<b>2015<sup>e</sup></b>
Production:					
Sold or used, mine	710	666	723	663	700
Ground and crushed <sup>1</sup>	2,910	3,310	3,550	3,410	2,400
Imports for consumption	2,320	2,920	2,250	2,700	1,800
Exports	98	151	199	153	140
Consumption, apparent <sup>2</sup> (crude and ground)	2,930	3,430	2,770	3,210	2,360
Estimated price, ground, average value, dollars per ton, f.o.b. mill	168	187	180	191	190
Employment, mine and mill, number	461	554	624	614	458
Net import reliance <sup>3</sup> as a percentage of apparent consumption	76	81	74	79	70

**Recycling:** None.

**Import Sources (2011–14):** China, 73%; India, 14%; Morocco, 6%; Mexico, 6%; and other, 1%.

<b>Tariff: Item</b>	<b>Number</b>	<b>Normal Trade Relations 12–31–15</b>
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:** Oil and gas drilling, the leading end use for barite, has undergone changes that have had a significant impact on barite consumption. In recent years, petroleum production in the United States increased dramatically owing to advances in the application of horizontal drilling and hydraulic fracturing in shale and other tight resources. However, global petroleum supply began to exceed demand, prices began to fall, and U.S. producers reduced production. The count of operating drill rigs exploring for oil and gas traditionally has been a good barometer of barite consumption or industry stockpiling. Between January and October 2015, the number of drill rigs operating in the United States fell from 1,811 to 787. The decrease in drilling activity is estimated to have reduced domestic barite consumption by approximately 25% to 30%.

As the world's leading barite consumer, changes in U.S. consumption significantly affect global barite production and trade. In recent years, India, Mexico, and Morocco significantly increased barite production, with a corresponding increase in exports to the United States. In 2015, these same countries greatly reduced their barite production, partly in response to lower U.S. consumption.

**World Mine Production and Reserves:** Reserves data for Iran were revised based on Government information.

	Mine production		Reserves <sup>4</sup>
	2014	2015 <sup>e</sup>	
United States	663	700	15,000
China	3,000	3,000	100,000
India	1,140	900	32,000
Iran	300	300	24,000
Kazakhstan	300	300	85,000
Mexico	420	220	7,000
Morocco	1,200	900	10,000
Pakistan	132	120	1,000
Peru	106	100	NA
Thailand	135	130	NA
Turkey	270	200	35,000
Vietnam	100	90	NA
Other countries	483	500	66,000
World total (rounded)	8,250	7,460	380,000

**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.

**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.

<sup>e</sup>Estimated. NA Not available.

<sup>1</sup>Imported and domestic barite, crushed and ground, sold or used by domestic grinding establishments.

<sup>2</sup>Defined as sold or used by domestic mines + imports – exports.

<sup>3</sup>Defined as imports – exports.

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