

MAGNESIUM COMPOUNDS¹

(Data in thousand metric tons of magnesium content unless otherwise noted)

Domestic Production and Use: Seawater and natural brines accounted for about 54% of U.S. magnesium compounds production in 2010. Magnesium oxide and other compounds were recovered from seawater by three companies in California, Delaware, and Florida; from well brines by one company in Michigan; and from lake brines by two companies in Utah. Magnesite was mined by one company in Nevada, and olivine was mined by two companies in North Carolina and Washington. About 60% of the magnesium compounds consumed in the United States was used in agricultural, chemical, construction, environmental, and industrial applications. The remaining 40% was used for refractories.

Salient Statistics—United States:	2006	2007	2008	2009	2010^e
Production	282	342	274	239	243
Imports for consumption	371	357	342	173	295
Exports	28	26	25	13	16
Consumption, apparent	625	673	591	399	522
Stocks, producer, yearend	NA	NA	NA	NA	NA
Employment, plant, number ^e	370	370	370	300	300
Net import reliance ² as a percentage of apparent consumption	55	49	54	40	53

Recycling: Some magnesia-based refractories are recycled, either for reuse as refractory material or for use as construction aggregate.

Import Sources (2006–09): China, 78%; Austria, 6%; Canada, 4%; Brazil, 3%; and other, 9%.

Tariff:³ Item	Number	Normal Trade Relations 12-31-10
Crude magnesite	2519.10.0000	Free.
Dead-burned and fused magnesia	2519.90.1000	Free.
Caustic-calcined magnesia	2519.90.2000	Free.
Kieserite	2530.20.1000	Free.
Epsom salts	2530.20.2000	Free.
Magnesium hydroxide	2816.10.0000	3.1% ad val.
Magnesium chloride	2827.31.0000	1.5% ad val.
Magnesium sulfate (synthetic)	2833.21.0000	3.7% ad val.

Depletion Allowance: Brucite, 10% (Domestic and foreign); dolomite, magnesite, and magnesium carbonate, 14% (Domestic and foreign); magnesium chloride (from brine wells), 5% (Domestic and foreign); and olivine, 22% (Domestic) and 14% (Foreign).

Government Stockpile: None.

Events, Trends, and Issues: Although still below 2008 production rates, U.S. steel production through July 2010 was 62% higher than that in 2009. Increased steel production and capacity utilization led to increased imports of dead-burned magnesia, compared with those in 2009. By July, dead-burned magnesia imports were almost 200,000 tons (gross weight), which was more than those for the full year 2009.

In August, the U.S. Department of Commerce, International Trade Administration (ITA) published its final determinations of its investigation of dumping of magnesia-carbon brick from China and Mexico into the United States. The ITA established a dumping margin of 128.10% ad valorem for 14 producing/exporting companies in China and 236% ad valorem as the China-wide rate. For Mexico, the ITA determined a dumping margin of 57.90% ad valorem. The ITA also found that subsidies existed for magnesia-carbon bricks exported from China, so it established countervailing duties of 24.24% ad valorem for most companies exporting from China, with one firm having a rate of 253.87% ad valorem.

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In Australia, the country's leading magnesia producer returned to full production capacity in June after running at about 25% of capacity since the beginning of 2009. The company also completed an expansion that increased its capacity by about 50% to bring the total to 175,000 tons per year of caustic-calcined magnesia, 135,000 tons per year of dead-burned magnesia, and 35,000 tons per year of fused magnesia. Another firm received State government approval to develop its magnesite property in Tasmania and, in the fourth quarter, began drilling to delineate the magnesite resource.

Several companies planned new magnesia plants. In Spain, the leading magnesite producer planned to open two new mines in 2011 with about 57 million tons of magnesite reserves to replace the company's operating mines that, at present mining rates, have a remaining life of 7 to 8 years. In May, a company in Turkey began production from a new 6,500-ton-per-year fused magnesia furnace, which doubled its fused magnesia production capacity. In India, a new joint venture planned to develop the Panthal magnesite deposit and build a 30,000-ton-per-year dead-burned magnesia plant at the site by 2012.

The world's second-ranked olivine producer planned to close its 1.1-million-ton-per-year mine in Greenland by yearend. The company cited lower olivine prices and unfavorable market conditions as reasons for the closure. The mine had been operating only since 2005.

World Magnesite Mine Production and Reserves: Reserves data for Australia, China, India, and Slovakia were revised based on new information from the respective country Governments.

	Mine production		Reserves ⁴
	2009	2010 ^e	
United States	W	W	10,000
Australia	58	70	95,000
Austria	231	230	15,000
Brazil	115	100	99,000
China	3,170	3,200	550,000
Greece	94	100	30,000
India	98	100	6,000
Korea, North	346	350	450,000
Russia	288	300	650,000
Slovakia	231	230	35,000
Spain	133	130	10,000
Turkey	576	600	49,000
Other countries	167	170	390,000
World total (rounded)	⁵ 5,510	⁵ 5,580	2,400,000

In addition to magnesite, there are vast reserves of well and lake brines and seawater from which magnesium compounds can be recovered.

World Resources: Resources from which magnesium compounds can be recovered range from large to virtually unlimited and are globally widespread. Identified world resources of magnesite total 12 billion tons, and of brucite, several million tons. Resources of dolomite, forsterite, magnesium-bearing evaporite minerals, and magnesia-bearing brines are estimated to constitute a resource in billions of tons. Magnesium hydroxide can be recovered from seawater.

Substitutes: Alumina, chromite, and silica substitute for magnesia in some refractory applications.

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

¹See also Magnesium Metal.

²Defined as imports – exports + adjustments for Government and industry stock changes.

³Tariffs are based on gross weight.

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

⁵Excludes U.S. production.