

MAGNESIUM COMPOUNDS¹

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

Domestic Production and Use: Seawater and natural brines accounted for about 52% of U.S. magnesium compounds production in 2006. Magnesium oxide and other compounds were recovered from seawater by three companies in California, Delaware, and Florida; from well brines by two companies in Michigan; and from lake brines by two companies in Utah. Magnesite was mined by one company in Nevada, brucite was mined by one company in Nevada and one company in Texas, 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 for refractories. The remaining 40% was used in agricultural, chemical, construction, environmental, and industrial applications.

Salient Statistics—United States:	2002	2003	2004	2005	2006^e
Production	312	329	292	301	305
Imports for consumption	337	332	356	391	370
Exports	66	53	35	31	30
Consumption, apparent	583	608	613	661	645
Stocks, producer, yearend	NA	NA	NA	NA	NA
Employment, plant, number ^e	450	370	370	370	370
Net import reliance ² as a percentage of apparent consumption	46	46	52	54	53

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

Import Sources (2002-05): China, 73%; Canada, 8%; Australia, 5%; Austria, 3%; and other, 11%.

Tariff:³ Item	Number	Normal Trade Relations 12-31-06
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.

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Events, Trends, and Issues: The U.S. producer of magnesium hydroxide in Manistee, MI, announced plans to nearly double its magnesium hydroxide capacity to 50,000 tons per year by the end of 2007. The company planned to market the increased production to the building materials, industrial chemicals, and wire and cable markets.

One of two U.S. producers of fused magnesia moved its 20,000-ton-per-year Midway, TN, plant to Coahuila, Mexico, after the fused magnesia operation was purchased by a Mexican firm at the end of 2005. Most of the Tennessee plant's customers were in Asia and Mexico, and the company had to import caustic-calcined magnesia feedstock for the plant. The Mexico location is close to the customers and has a captive supply of caustic-calcined magnesia. This move leaves the United States with one fused magnesia production plant in Alabama.

A leading German-based refractories producer signed a joint-venture agreement with a Chinese firm to construct a new 100,000-ton-per-year dead-burned and fused magnesia plant in Liaoning Province to supply the refractories producer's plants in China. Construction was expected to be completed in two stages, with the first stage online in mid-2007 and the second stage in 2008.

The leading magnesite producer in Russia began producing caustic-calcined magnesia in November; this was the first caustic-calcined magnesia plant in the country. Mining at a newly developed deposit began in August and when at full capacity, 200,000 tons per year of raw magnesite will be produced. Magnesite from the deposit will feed a 95,000-ton-per-year caustic-calcined magnesia plant, of which 62,000 tons per year will be used as feedstock for a fused magnesia plant scheduled to be built in the future, and the remaining 33,000 tons per year will be sold as caustic-calcined magnesia.

World Mine Production, Reserves, and Reserve Base:

	Magnesite production		Magnesite reserves and reserve base ⁴	
	2005	2006 ^e	Reserves	Reserve base
United States	W	W	10,000	15,000
Australia	97	100	100,000	120,000
Austria	202	200	15,000	20,000
Brazil	107	166	45,000	65,000
China	1,350	1,400	380,000	860,000
Greece	144	145	30,000	30,000
India	104	105	14,000	55,000
Korea, North	346	350	450,000	750,000
Russia	317	330	650,000	730,000
Slovakia	288	130	45,000	320,000
Spain	151	150	10,000	30,000
Turkey	980	850	65,000	160,000
Other countries	120	120	390,000	440,000
World total (rounded)	⁵ 4,210	⁵ 4,050	2,200,000	3,600,000

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 definitions.

⁵Excludes the United States.