

MAGNESIUM METAL¹

(Data in thousand metric tons unless otherwise noted)

Domestic Production and Use: In 2007, magnesium was produced by one company in Utah by an electrolytic process that recovered magnesium from brines from the Great Salt Lake. Magnesium used as a constituent of aluminum-based alloys that were used for packaging, transportation, and other applications was the leading use for primary magnesium, accounting for 43% of primary metal use. Structural uses of magnesium (castings and wrought products) accounted for 37% of apparent consumption. Desulfurization of iron and steel accounted for 10% of U.S. consumption of primary metal, and other uses were 10%.

Salient Statistics—United States:	2003	2004	2005	2006	2007^e
Production:					
Primary	W	W	W	W	W
Secondary (new and old scrap)	70	72	73	76	75
Imports for consumption	83	99	85	76	65
Exports	20	12	10	12	13
Consumption:					
Reported, primary	103	101	82	78	75
Apparent ²	120	140	130	120	110
Price, yearend:					
Metals Week, U.S. spot Western, dollars per pound, average	1.14	1.58	1.23	1.40	2.00
Metal Bulletin, European free market, dollars per metric ton, average	1,900	1,875	1,595	2,100	3,000
Stocks, producer and consumer, yearend	W	W	W	W	W
Employment, number ^e	400	400	400	400	400
Net import reliance ³ as a percentage of apparent consumption	53	61	60	53	47

Recycling: In 2007, about 20,000 tons of secondary production was recovered from old scrap.

Import Sources (2003-06): Canada, 44%; Russia, 21%; Israel, 13%; China, 10%; and other, 12%.

Tariff:	Item	Number	Normal Trade Relations
			12-31-07
	Unwrought metal	8104.11.0000	8.0% ad val.
	Unwrought alloys	8104.19.0000	6.5% ad val.
	Wrought metal	8104.90.0000	14.8¢/kg on Mg content + 3.5% ad val.

Depletion Allowance: Dolomite, 14% (Domestic and foreign); magnesium chloride (from brine wells), 5% (Domestic and foreign).

Government Stockpile: None.

Events, Trends, and Issues: Tight magnesium supplies drove prices up in 2007. By October, the Metals Week U.S. spot Western price range for primary magnesium was \$1.80 to \$2.00 per pound, a \$0.45- to \$0.55-per-pound increase since the beginning of the year. This was the highest price reported for magnesium since 1996. Contract magnesium prices for 2008 were reported to be as high as \$2.00 per pound. The tight supply primarily resulted from the March closure of the primary magnesium plant in Becancour, Quebec, Canada, removing 48,000 tons per year of capacity from the world market. This plant, in addition to a 63,000-ton-per-year plant in Asbestos, Quebec, that had been closed since 2003, were scheduled to be demolished by yearend. The only plant remaining in Canada—a 9,000-ton-per-year plant in Haley, Ontario—had moved most of its production to China, sold its production equipment, and was primarily reprocessing magnesium from China at the site.

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The U.S. magnesium producer announced that it would increase its production capacity from 43,000 tons per year to more than 50,000 tons per year, with increased production starting in the fourth quarter of 2007. The plant would reach full capacity by mid-2008. The company had begun construction of new electrolytic cells in 2004, but had not completed the expansion because of market conditions. The U.S. magnesium producer had signed a 2-year agreement, beginning in January 2008, to supply one of the U.S. automobile manufacturers with magnesium ingot for its North American parts production. The auto manufacturer had been supplied with 20,000 tons per year from the Becancour, Quebec, plant until its closure; magnesium from the United States producer (estimated at 9,000 tons) would be used for parts production in the United States, and magnesium from China would be used for parts production in Canada and Mexico.

After a review of the antidumping duty on magnesium metal from Russia, the U.S. Department of Commerce, International Trade Administration reduced the antidumping duty to 0.41% ad valorem (a de minimus duty that is equivalent to a 0% ad-valorem duty) for one of the two magnesium producers in Russia. The duty for the other producer remained at 3.77% ad valorem.

The company that had planned to build a magnesium plant in Egypt closed its office and released its staff in the first quarter of 2007. Inability to find financing for the plant was cited as the reason for the closure.

Magnesium supplies in the United States were expected to remain tight. The only new plants that were either being constructed or planned were in China. With antidumping duties assessed on most forms of magnesium imported from China into the United States, imports of magnesium from China were expected to continue to supply only a minimal portion of consumption. This would leave Israel and Russia as the principal magnesium suppliers to the United States. In addition, new U.S. titanium sponge plants that were scheduled to be completed within the next several years would require a significant quantity of magnesium for the initial startup and, depending on the ability of the sponge producer to recycle magnesium, may require significant quantities annually. This would constrain supplies further and lead to more price increases.

World Primary Production, Reserves, and Reserve Base:

	Primary production		Reserves and reserve base ⁴
	2006	2007 ^e	
United States	W	W	Magnesium metal is derived from seawater, natural brines, dolomite, and other minerals. The reserves and reserve base for this metal are sufficient to supply current and future requirements. To a limited degree, the existing natural brines may be considered to be a renewable resource wherein any magnesium removed by humans may be renewed by nature in a short span of time.
Brazil	6	6	
Canada	50	8	
China	534	550	
Israel	25	28	
Kazakhstan	21	20	
Russia	50	50	
Serbia	2	2	
Ukraine	2	2	
World total ⁵ (rounded)	690	670	

World Resources: Resources from which magnesium may be recovered range from large to virtually unlimited and are globally widespread. Resources of dolomite and magnesium-bearing evaporite minerals are enormous. Magnesium-bearing brines are estimated to constitute a resource in the billions of tons, and magnesium can be recovered from seawater at places along world coastlines.

Substitutes: Aluminum and zinc may substitute for magnesium in castings and wrought products. For iron and steel desulfurization, calcium carbide may be used instead of magnesium.

^eEstimated. W Withheld to avoid disclosing company proprietary data.

¹See also Magnesium Compounds.

²Rounded to two significant digits to protect proprietary data.

³Defined as imports – exports + adjustments for Government and industry stock changes.

⁴See Appendix C for definitions.

⁵Excludes the United States.