

MAGNESIUM METAL¹

(Data in thousand metric tons, unless otherwise noted)

Domestic Production and Use: Three companies in Texas, Utah, and Washington produced primary magnesium in 1998 valued at approximately \$374 million. An electrolytic process was used at plants in Texas and Utah to recover magnesium from seawater and lake brines, respectively. A thermic process was used to recover magnesium from dolomite in Washington. The aluminum industry remained the largest consumer of magnesium, accounting for 50% of domestic primary metal use. Magnesium was a constituent in aluminum-base alloys that were used for packaging, transportation, and other applications. Castings and wrought magnesium products accounted for 27% of U.S. consumption of primary metal; desulfurization of iron and steel, 12%; cathodic protection, 4%; reducing agent in nonferrous metals production, 3%; and other uses, 4%.

Salient Statistics—United States:	1994	1995	1996	1997	1998^e
Production: Primary	128	142	133	125	117
Secondary (new and old scrap)	62	65	70	80	80
Imports for consumption	29	35	47	65	75
Exports	45	38	41	41	40
Consumption: Reported, primary	112	109	102	101	105
Apparent	149	171	162	185	177
Price, yearend:					
Metals Week, U.S. spot Western, dollars per pound, average	1.63	2.09	1.75	1.65	1.55
Metal Bulletin, free market, dollars per metric ton, average	3,125	4,138	2,525	2,525	1,900
Stocks, producer and consumer, yearend	19	21	26	21	27
Employment, number ^e	1,400	1,400	1,400	1,400	1,400
Net import reliance ² as a percent of apparent consumption	E	E	E	16	16

Recycling: In 1998, about 31,000 tons of the secondary production was recovered from old scrap.

Import Sources (1994-97): Canada, 52%; Russia, 27%; China, 7%; Mexico, 3%; and other, 11%.

Tariff:	Item	Number	Normal Trade Relations (NTR)	Canada and Mexico	Non-NTR³
			12/31/98	12/31/98	12/31/98
	Unwrought metal	8104.11.0000	8.0% ad val.	Free	100% ad val.
	Unwrought alloys	8104.19.0000	6.5% ad val.	Free	60.5% ad val.
	Wrought metal	8104.90.0000	14.8¢/kg on Mg content + 3.5% ad val.	Free	88¢/kg on Mg content + 20.0% andval.

Depletion Allowance: Dolomite, 14% (Domestic and Foreign); magnesium chloride, 5% (Domestic and Foreign).

Government Stockpile: None.

Events, Trends, and Issues: In November, the largest U.S. magnesium producer announced that it would close its 65,000-ton-per-year primary magnesium plant in Freeport, TX. Damage from summer storms was cited as the reason for the closure; the company had been producing magnesium for more than 80 years. As an oversupply of magnesium developed during the year, prices fell to their lowest level since the end of 1994. Part of the reason for the oversupply was additional magnesium from the new Israeli plant on the world market.

In a preliminary ruling from the Department of Commerce, the International Trade Administration (ITA) set the antidumping duties for pure magnesium from the largest Canadian magnesium producer at 0% ad valorem for the period August 1, 1996, to July 31, 1997. This is the third review in which the rate has been established at 0%. However, the ITA does not intend to revoke the antidumping order (which can be done after three consecutive 0% determinations) because it can not be assured that the company will not dump in the future. The ITA also issued results of the countervailing duty review for pure and alloy magnesium for calendar year 1996 from Canada; the duty was set at 2.78% ad valorem.

The Court of International Trade (CIT) has upheld a remand decision by the U.S. International Trade Commission (ITC) that the U.S. magnesium industry is not injured by imports of magnesium from Ukraine. In 1995, the ITC issued

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antidumping duties ranging from 79.87% to 104.27% ad valorem on pure magnesium from Ukraine. These duties were appealed to the CIT in 1997, and the Court's decision was a result of the 1997 appeal. If there are no further appeals by December 20, the duties should be revoked.

The European Commission (EC) imposed provisional antidumping duties on magnesium imported from China, effective May 15. The EC has set a floor price of about \$3,100 per ton. The duty will be the difference between the floor price and the c.i.f. value of magnesium imported under tariff codes 8104.11.00 and 8104.19.00. With this action, the EC has set antidumping duties for magnesium imported from China, Russia, and Ukraine. China also has imposed a minimum floor price for magnesium for export of \$1,950 per ton, f.o.b. China.

Predictions of strong growth in magnesium usage in automotive applications spurred several announcements of new magnesium projects around the world. In Australia, a preliminary study began for the construction of a 90,000-ton-per-year magnesium plant near Burnie, Tasmania, by 2003 using magnesite from a nearby deposit as feedstock. In the Netherlands, a 40,000- to 50,000-ton-per-year magnesium plant was proposed using magnesium chloride brines from the nearby magnesite operation as a feedstock. The company is looking for financing to develop the project, and several technologies for magnesium production are being evaluated.

In Canada, several companies are investigating new projects to recover magnesium from asbestos tailings. One firm is in the early stages of planning a project in northern British Columbia using tailings from a chrysotile mine as feed. In addition, another firm submitted a proposal to the Newfoundland government to extract magnesium from an asbestos tailings pile at the Baie Verte mine. Interest in recovering magnesium from asbestos tailings has been heightened by the new 58,000-ton-per-year magnesium plant in Canada that broke ground for construction on April 15, which would be the first commercial plant to produce magnesium from asbestos tailings.

The firm developing a 50,000-ton-per-year magnesium plant in Congo (Brazzaville) began the first phase of a prefeasibility study that should be completed by early 1999. In April, the owners of the proposed 90,000-ton-per-year Australian magnesium plant became a shareholder in the proposed Iceland magnesium plant with a 40% stake. A feasibility study for a 50,000-ton-per-year magnesium plant near Reykjanes was completed in 1998. Although a decision about plant construction was expected by yearend 1997, the company wanted to find a major shareholder (which it has done with the Australian firm) and decide on which production technology to use—one developed by the Australians or currently used Ukrainian technology.

World Primary Production, Reserves, and Reserve Base:

	Primary production		Reserves and reserve base ⁴
	1997	1998 ^e	
United States	125	117	Domestic magnesium metal production is derived from natural brines and dolomite, and 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 a renewable resource wherein any magnesium removed by humans may be renewed by nature in a short span of time.
Brazil	9	9	
Canada	58	55	
China ^e	92	95	
France	12	12	
Israel	8	20	
Kazakhstan ^e	9	10	
Norway	28	25	
Russia ^e	40	35	
Serbia and Montenegro	3	3	
Ukraine ^e	10	8	
World total	392	389	

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 billions of tons, and magnesium can be recovered from seawater at places along world coastlines where salinity is high.

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

^eEstimated. E Net exporter.

¹See also Magnesium Compounds.

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

³See Appendix B.

⁴See Appendix D for definitions.