

Mineral Industry Surveys

For information, contact:

Deborah A. Kramer, Magnesium Commodity Specialist
 U.S. Geological Survey
 983 National Center
 Reston, VA 20192
 Telephone: (703) 648-7719, Fax: (703) 648-7975
 E-mail: dkramer@usgs.gov

Oana Petrican (Data)
 Telephone: (703) 648-7968
 Fax: (703) 648-7975
 E-mail: opetrican@usgs.gov

Internet: <http://minerals.usgs.gov/minerals>

MAGNESIUM IN THE SECOND QUARTER 2005

Exports of magnesium from January through May 2005 were about 33% lower than those in the same period of 2004. Magnesium imports through May 2005 were about 12% higher than those in the corresponding period of 2004. Russia (45%) and Israel (29%) were the principal sources of imported magnesium metal, and Canada (70%) and Israel (11%) were the principal sources of imported alloys. All the magnesium alloys imported from Canada in May have been referred to the U.S. Census Bureau for verification; the magnesium content quantity reported of 4,607 metric tons (t) was significantly greater than the reported gross weight of 2,376 t. These data are likely to be revised.

Quoted magnesium prices are shown in the table at the bottom of the page. All magnesium prices fell during the quarter. Metal Bulletin resumed its China free market price quotation at the end of May.

The U.S. Department of Commerce, International Trade Administration (ITA) began an administrative review of the antidumping duty, which was established in 1995 and continued in 2000, for pure magnesium imported into the United States from China. The duty was originally established at 24.67% ad valorem for Minmetals and 305.56% ad valorem for all other manufacturers and exporters in China. The review was expected to be completed by May 31, 2006 (U.S. Department of Commerce, International Trade Administration, 2005a).

In May, the ITA published its preliminary countervailing duties for pure and alloy magnesium imported into the United States from Canada during calendar year 2003. The duty rates for pure and alloy magnesium were set at 1.21% ad valorem for Norsk Hydro Canada Inc. and 5.40% ad valorem for Magnola

Metallurgy Inc. The final rates were scheduled to be issued within 120 days of the preliminary results (U.S. Department of Commerce, International Trade Administration, 2005b). In July, the International Trade Commission (ITC) began its second 5-year review of the countervailing duty on magnesium from Canada, which had originally been instituted in 1992. The review was designed to determine if the revocation of the order would be likely to lead to a continuation or recurrence of material injury.

In May, Russian magnesium producer JSC Avisma filed an appeal with the U.S. Court of International Trade of the ITC ruling that resulted in antidumping duties being established for magnesium imported from Russia. In addition, one of the leading U.S. consumers of magnesium and a former U.S. magnesium producer, Alcoa Inc., filed a similar appeal, but Alcoa's appeal was directed against antidumping duties on magnesium imported from China (Brooks, 2005a).

In August, U.S. Magnesium LLC filed a "scope ruling request" with the ITA alleging that Timminco Ltd. of Canada and Pechiney of France evaded U.S. antidumping duties by remelting ingots or pure magnesium pieces from China and Russia and exporting them to the United States as Canadian- or French-origin magnesium. According to U.S. Magnesium's lawyer, although Timminco and Pechiney were targeted by the filing, the scope was not limited to these two firms; it would apply to any company that had been importing Chinese- or Russian-origin magnesium that had been slightly modified (Peterson and McBeth, 2005).

U.S. Magnesium expected to bring the first cells of its 11,000-metric-ton-per-year (t/yr) expansion online sometime in the

	Unit	Beginning of quarter	End of quarter
Metals Week U.S. spot Western	Dollars per pound	\$1.50-\$1.58	\$1.40-\$1.45
Metals Week U.S. spot dealer import	do.	1.45-1.50	1.35-1.45
Metals Week European free market	Dollars per metric ton	1,750-1,850	1,700-1,800
Metal Bulletin European free market	do.	1,830-1,850	1,650-1,700
Metal Bulletin China free market	do.	1,650-1,680	1,530-1,580

summer. The expansion, which would bring the company's total magnesium production capacity at Rowley, UT, to 54,000 t/yr, was scheduled to be completed in 2006 (Platts Metals Week, 2005d). In May, the U.S. Department of Justice, acting at the request of the U.S. Environmental Protection Agency, filed a suit alleging that waste and dust from U.S. Magnesium's plant had elevated levels of polychlorinated biphenyls (PCBs). The PCB levels were estimated to be as high as 600 parts per million (ppm). PCB wastes are generally regulated for disposal under the Toxic Substance Control Act at concentrations greater than 50 ppm (Brooks, 2005b). U.S. Magnesium was already involved in a lawsuit that was brought in 2001 regarding dioxin releases at the plant.

A fire broke out on August 7 at Remacor Inc.'s magnesium grinding plant in West Pittsburgh, PA. Remacor produces magnesium-base desulfurization reagents for the iron and steel industry. Several drums of magnesium stored in one of the manufacturing buildings caught fire and exploded, and the fire spread to several smaller buildings at the site. The fire was allowed to burn until it burned out, which took several days. The cause of the fire was not determined (Lash, 2005§¹).

Advanced Magnesium Alloys Corp. (AMACOR) restarted production at its Anderson, IN, magnesium recycling plant at the end of May. A fire at the plant on January 14 had caused \$14 million in damage and destroyed the company's magnesium warehouse. A former employee was arrested and charged with arson (Platts Metals Week, 2005a).

A new firm, MagPro LLC, planned to begin a magnesium recycling operation in 2006 in Camden, TN. One of the owners of the company was the former owner of bankrupt Halaco Engineering Inc., a former magnesium recycler in Oxnard, CA, which was closed in 2004 (Platts Metals Week, 2005b).

MagIndustries Corp. planned to begin construction of a 60,000-t/yr magnesium recovery plant in Pointe-Noire, Congo (Brazzaville) by 2007. The magnesium plant would cost \$500 million, with an additional investment of \$189 million in an associated potash plant, and \$100 million on turbine rehabilitation by the company's MagEnergy subsidiary. Each project will have separate financing, and MagIndustries planned to raise 30% in equity and 70% in debt (Kassakovich, 2005).

Egyptian Magnesium Co. (EMAG), a joint-venture company of Magnesium International Ltd. (MIL), signed a power supply contract with the Egyptian Electricity Transmission Co. Through this agreement, the Egyptian Government will provide 128 megawatts (MW) of electricity for the first module of the company's planned 43,000-t/yr magnesium smelter in Sokhna Port, Egypt. The would increase to 248 MW when the second phase of 45,000 t/yr is developed. In addition, the company's off-take partner, Germany's ThyssenKrupp Metallurgie GmbH, agreed to become a minority shareholder in the EMAG project (Magnesium International Ltd., 2005§).

During the second quarter of 2005, MIL decided to base the bankable feasibility study on magnesite feedstock from Myrtle Springs, South Australia. EMAG, however, has been evaluating four additional deposits—two in Saudi Arabia and two in Egypt. The principal deposit that EMAG is investigating is the Sul Hamed deposit in southern Egypt, where a small magnesite mining operation already exists. The deposit is held by El Nasr

Mining—a wholly owned subsidiary of the Egyptian Government. EMAG planned to negotiate a Heads of Agreement with El Nasr to complete a resource evaluation and potential mining arrangements. Parallel evaluation of the other deposits, owned by Ma'aden in Saudi Arabia and El Nasr in Egypt, was expected to continue in the next 2 quarters (Platts Metals Week, 2005c).

MIL also signed an exclusive option to license Australia's CSIRO's magnesium sheet production process. The CSIRO technology is based on the application of the twin roll casting technique, which is used extensively in the aluminum industry, to the production of magnesium alloy sheet. Magnesium alloy strip can be produced directly from the melt with a thickness at, or close to, the final required shape, thereby reducing operational costs (Magnesium.com, 2005§).

In China, 40 small magnesium plants closed in the second quarter because of falling prices and environmental concerns. Each of the closed plants was estimated to have a capacity less than 1,000-t/yr of magnesium ingot. The China Magnesium Association expected that an additional 40 plants would be closed by the end of 2005. In addition, some of the larger firms have delayed expansion plans because of low magnesium prices (Mok, 2005).

A new Australian company Minemakers Australia NL agreed to acquire the Lyons River and Arthur River, Tasmania, magnesite deposits that were owned by Crest Magnesium NL (now Australian Ethanol Ltd.). Australian Ethanol holds the deposits under its Tasmania Magnesite NL subsidiary. Plans to construct a 95,000-t/yr magnesium plant were shelved in 2001. Minemakers Australia would like to use the carbothermic technology that is being developed by CSIRO to recover magnesium, but this process has not been commercialized yet. In addition, Minemakers Australia was investigating the possibility of a 500,000-t/yr magnesia plant using the magnesite resources as a raw material. This would generate cash to develop the magnesium metal project (Forster, 2005).

Leader Mining International Inc. established a wholly owned subsidiary, North Pacific Alloys Ltd. (NPAL) to conduct activities related to the company's Cogburn Magnesium project. The Cogburn project was designed to extract magnesium from a magnesium silicate deposit in British Columbia, Canada. NPAL signed a 15-year operating agreement with Emil Anderson Construction Inc. for quarrying, ore transportation, and residue management of the magnesium silicate deposit. NPAL also signed an agreement with BC Hydro for providing 250 MW of electrical energy capacity to the project. The company's 2003 feasibility study for a 150,000-t/yr magnesium plant determined that the project was technically feasible and economically viable at a magnesium price of \$1.27 per pound (Leader Mining International Inc., 2005§).

References Cited

- Brooks, David, 2005a, Alcoa, Avisma take US to court over dumping: American Metal Market, v. 113, no. 20-1, May 23, p. 1, 4.
- Brooks, David, 2005b, U.S. Magnesium seeking mediation as legal battle over PCBs continues: American Metal Market, v. 113, no. 19-3, May 18, p. 6.
- Forster, Christine, 2005, Australia's Minemakers seeks to revive magnesium project: Platts Metals Week, v. 76, no. 29, July 18, p. 1, 14.
- Kassakovich, Natalia, 2005, Kouilou construction to start by early 2007: Metal Bulletin, no. 8894, May 23, p. 10.
- Mok, Yuen Cheng, 2005, More Chinese magnesium plants shut on falling prices: Platts Metals Week, v. 76, no. 29, July 18, p. 5-6.

¹References that include a section mark (§) are found in the Internet References Cited section.

Peterson, Tina, and McBeth, Karen. 2005, US Magnesium alleges Timminco, Pechiney evade duties: *Platts Metals Week*, v. 76, no. 32, August 8, p. 1, 14-15.

Platts Metals Week, 2005a, AMACOR restarts magnesium plant: *Platts Metals Week*, v. 76, no. 21, May 23, p. 10.

Platts Metals Week, 2005b, MagPro to recycle magnesium scrap: *Platts Metals Week*, v. 76, no. 27, July 4, p. 5.

Platts Metals Week, 2005c, MIL assessing ore deposits: *Platts Metals Week*, v. 76, no. 31, August 1, p. 7.

Platts Metals Week, 2005d, US magnesium expansion on track: *Platts Metals Week*, v. 76, no. 22, May 30, p. 7.

U.S. Department of Commerce, International Trade Administration, 2005a, Initiation of antidumping and countervailing duty administrative reviews: *Federal Register*, v. 70, no. 125, June 30, p. 37749-37757.

U.S. Department of Commerce, International Trade Administration, 2005b, Pure magnesium and alloy magnesium from Canada—Preliminary results of countervailing duty administrative reviews: *Federal Register*, v. 70, no. 89, May 10, p. 24530-24533.

Internet References Cited

Lash, Cindi. 2005 (August 7), Raging fire destroys Lawrence County plant [Pittsburgh Post-Gazette], accessed August 15, 2005, at URL <http://www.post-gazette.com/pg/05219/550168.stm>.

Leader Mining International Inc., 2005 (May 4), Cogburn Magnesium project progress report, accessed July 19, 2005, at URL <http://www.leadermining.com/news-frame.html>.

Magnesium.com, 2005 (July 8), CSIRO's magnesium sheet production process licensed, accessed August 3, 2005, at URL http://www.magnesium.com/w3/news-room/news_open.php?news=1996.

Magnesium International Ltd., 2005§ (May 25), EMAG signs power supply contract with Egyptian Electricity Transmission Company, accessed August 16, 2005, at URL http://www.mgil.com.au/investor/announcement_20050527.html.

TABLE 1
U.S. IMPORTS FOR CONSUMPTION AND EXPORTS OF MAGNESIUM¹

(Metric tons)

	2005					
	2004	January- February	March	April	May	January- May
Imports:						
Metal	34,300	6,920	2,980	2,130	2,090	14,100
Waste and scrap	11,700	1,890	1,330	1,010	1,460	5,690
Alloys (magnesium content)	51,500	8,740	3,460	3,320	6,510 ²	22,000
Sheet, tubing, ribbons, wire, powder, and other (magnesium content)	1,200	138	111	37	82	369
Total	98,700	17,700	7,880	6,500	10,100	42,200
Exports:						
Metal	1,760	21	58	95	76	250
Waste and scrap	4,790	872	541	411	623	2,450
Alloys (gross weight)	1,750	62	285	114	26	487
Sheet, tubing, ribbons, wire, powder, and other (gross weight)	3,530	302	248	219	162	931
Total	11,800	1,260	1,130	839	886	4,120

¹Data are rounded to no more than three significant digits; may not add to totals shown.

²Part of these data have been referred to the U.S. Census Bureau for verification.

Source: U.S. Census Bureau.