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Mineral Industry Surveys

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MAGNESIUM IN THE FOURTH QUARTER 2002

Exports of magnesium through November 2002 were about 29% higher than those in the same period of 2001. Magnesium imports through November 2002 were 29% higher than those in the corresponding period of 2001. Russia (48%), Canada (23%), and Israel (21%) were the principal sources of imported metal. Canada (62%), China (26%), and Russia (5%) were the principal sources of imported alloys.

Quoted magnesium prices remained fairly stable throughout the fourth quarter, with some prices increasing slightly and others declining. Prices are shown in the following table.

	Units	Beginning of quarter	End of quarter
Metals Week U.S. spot Western	Dollars per pound	$1.14-$1.23	$1.10-$1.22
Metals Week U.S. spot dealer import	do.	1.00-1.07	1.02-1.07
Metals Week European free market	Dollars per metric ton	1,830-1,900	1,800-1,900
Metal Bulletin European free market	do.	1,880-1,980	1,880-1,980
Metal Bulletin China free market	do.	1,370-1,390	1,360-1,380

After a review of the August 1, 2000 to July 31, 2001, period, the International Trade Administration (ITA) determined that the antidumping duty for pure magnesium from Canada imported into the United States from Norsk Hydro Canada Inc. was 0% ad valorem. The ITA also did not revoke the antidumping order for pure magnesium from Canada (U.S. Department of Commerce, International Trade Administration, 2003).

European antidumping duties on magnesium from China were expected to be dropped by the end of February. The 31.7% duty had been expected to be repealed since Pechiney closed its magnesium plant in France in mid-2001; this was the last plant operating in the European Union (Francis-Grey, 2003).

U.S. Magnesium LLC expected to return to its full 43,000-metric-ton-per-year (t/yr) capacity at its Rowley, UT, plant by February 2003, after completing the installation of new electrolytic cell technology. The company consolidated operations into two buildings from four and expects to be able to produce the same quantity of magnesium as before, with fewer cells. U.S. Magnesium also planned to complete an engineering study by summer 2003 to assess the feasibility of increasing production to 80,000 t/yr by introducing the new cells into the

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two closed buildings (Brooks, 2003b).

Afer several years of evaluating sites in Australia, Mt. Grace Resources Ltd. announced that it was planning to construct a magnesium plant in Perak State, Malaysia. The company planned to purchase the Northwest Alloys plant from Alcoa Inc. for $21 million, dismantle it, and then ship the plant from its location in Addy, WA, to Malaysia. Mt. Grace Resources, which changed its name to New World Alloys Ltd. in January 2003, planned to make some modifications to the plant after it is moved that would increase the plant's capacity to 90,000 t/yr. The direct capital cost of the project is estimated at $150 million. Construction of the project is expected to begin in the first half of 2003, with initial magnesium production in the second quarter of 2004 (New World Alloys Ltd., 2003§[1]).

In the fourth quarter of 2002, Australian Magnesium Corp. Ltd. (AMC) completed a sales agreement for 15,000 t/yr of magnesium to a European metals company for a 3-year period, formed an alliance with Hong Kong-based Lee Kee Group Inc. to develop markets for its magnesium products in China, and signed an agreement with European component manufacturer Wagon plc to develop magnesium automotive applications. AMC also stated that with progress on plant construction, it expected to be on target for first metal production from its 97,000-t/yr Stanwell magnesium plant by December 2004 (Australian Magnesium Corp. Ltd., 2003§).

Magnesium International Ltd. and Thiess Ltd. announced that they have agreed on a A$751.5 million price for the engineering, procurement, and construction of the 71,000-t/yr SAMAG magnesium smelter to be built at Pt. Pirie in South Australia. Construction is expected to begin by mid-2003, with operations to start by the end of 2005 (Hagopian,and Francis-Grey 2002).

Latrobe Magnesium Ltd. reported that the Federal Government had approved funding of approximately A$1.4 million towards the cost of the Latrobe Magnesium project bankable feasibility study. The approval was conditional on the project receiving at least matching funding from the Victorian government. The bankable feasibility study was scheduled to begin in March 2003 and take 2 years to complete at a cost of A$20 million. The company also reached agreement with Yallourn Energy Pty. Ltd. for the supply of its brown coal fly ash as a raw material for the proposed magnesium plant. Latrobe said this brings sufficient ash resources to the project to enable it to produce 77,000 t/yr of magnesium alloys for a minimum 20-year life. (Nordic Magnesium Cluster, 2002§).

Magnola Metallurgy Inc. announced that it would close its 58,000-t/yr primary magnesium plant in Quebec because of competition from low-priced magnesium from China. The plant, which has been operating for about 2 years, was expected to be closed by the end of the first quarter of 2003, with the closure lasting at least 1 year, but it could be closed longer if magnesium prices do not increase. Exacerbating the problem of low magnesium prices was the technical problems the plant had encountered since its start-up in December 2000. The plant was using asbestos tailings as a raw material source and had encountered problems in introducing new recovery technology; the plant produced 24,600 metric tons (t) in 2002, which was less than one-half of its rated capacity (Brooks, 2003a).

In January 2003, Magnesium Alloy Corp. reported that because of market conditions, it will no longer be proceeding with its previously announced private placement of 6,000,000 units consisting of one common share of the company and one-half of one common share purchase warrant. The placement was originally announced in November 2002 (Magnesium Alloy Corp., 2003a§). Instead, the company completed a placement of 1,000,000 units at a price of $0.15 per unit in February. The smaller placement was intended to supply working capital and general corporate expenses for the company's proposed 60,000-t/yr magnesium plant in Congo (Brazzaville) (Magnesium Alloy Corp., 2003b§).

Xstrata PLC said that it intended to sell its 25,000-t/yr magnesium recycling plant in Anderson, IN, that just began operation in 2001. The company said that it had failed to source adequate quantities of magnesium scrap or penetrate the U.S. auto market (Reuters, 2003§).

General Motors Corp. (GM) completed plans to install magnesium alloy instrument panel support beams on all of its North American-built automobiles designed on the Epsilon platform, which includes the Chevrolet Malibu and Pontiac Trans Am. All of the instrument panel support beams that will be installed in redesigned models beginning in 2004 will be one-piece die castings and will be supplied by three different manufacturers. These manufacturers are Lunt Manufacturing Co. Inc., Hampshire, IL; Meridian Technologies, Strathroy Ontario, Canada; and TriMag unit of Société de Développement du Magnésium s.e.c., Boisbriand, Quebec, Canada. The support beams, which will weigh between 4.5 and 12.2 kilograms (10 and 27 pounds) will be manufactured from the AM series of alloys. GM estimated that about 900,000 of the beams will be used annually, with a magnesium consumption of more than 9,000 t/yr (Wrigley, 2002a).

In contrast, GM has decided to replace the magnesium instrument panel support beams on its Chevrolet Silverado and GMC Sierra pickup trucks with steel beams. According to the company, changes in other areas of the pickup trucks made it unnecessary to use magnesium beams for weight reduction. The new steel beams were designed in such a way that they would not require as many pieces and consequently, fewer welds or fasteners; before the mid-1990s, steel beams consisted of as many as 40 pieces (Wrigley, 2003).

Ford continued its plans to install magnesium cam covers on its Triton V-8 and V-10 engines over the next 2 years. Ford, which had been hesitant to replace the plastic covers with magnesium in North American-produced vehicles because of magnesium's cost, decided magnesium's quality and durability benefits in certain areas outweighed its cost. The new magnesium parts, which will be phased in by engine type, are expected to consume more than 3,000 t/yr of magnesium. The supplier for the AZ91 die-cast covers for the V-8 engines will be Spartan Light Metal Products, Sparta, IL, and other suppliers may be added as the number of applications increase (Wrigley, 2002b).

Rossborough-Remacor LLC announced that it has developed a new proprietary cost-effective technology for processing oily magnesium turnings. The company has been processing this

[1]References that include a section twist (§) are shown in the Internet References Cited section.

material for over 15 years at its West Pittsburg, PA, plant. Because the existing process was not cost effective, the company has had to charge fees for processing in order to continue operations. A patent is pending on the process and Rossborough-Remacor planned a two-phase equipment installation at the West Pittsburg plant. The first phase is scheduled for completion by the first quarter of 2004. This new process is expected to create a safe and economical method of disposal of a hazardous material by conversion to a desulfurization-grade magnesium granule (Nordic Magnesium Cluster, 2003§).

CORRECTION—In Magnesium in the Third Quarter 2002, information was presented about Remag Alloys BV plans to construct a 10,000-t/yr magnesium recycling plant in Delfzijl, Netherlands. The cost of the magnesium recycling plant was misstated at $255 million; this budget does not apply to the 10,000-t/yr magnesium recycling plant but to the 50,000-t/yr primary magnesium plant proposed by Antheus Magnesium.

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TABLE 1
U.S. IMPORTS FOR CONSUMPTION AND EXPORTS OF MAGNESIUM 1/

(Metric tons)

		2002				
	2001	January-August	September	October	November	January-November
Imports:						
Metal	20,100	19,600	2,800	2,330	3,030	27,800
Waste and scrap	11,000	9,730	1,070	1,240	1,110	13,200
Alloys (magnesium content)	35,100	27,400	3,580	4,050	3,430	38,400
Sheet, tubing, ribbons, wire, powder, other (magnesium content)	2,870	1,360	193	199	173	1,920
Total	69,100	58,100	7,640	7,820	7,750	81,300
Exports:						
Metal	4,870	6,880	1,100	1,320	1,080	10,400
Waste and scrap	6,950	3,900	498	623	597	5,620
Alloys (gross weight)	3,860	2,680	805	165	297	3,950
Sheet, tubing, ribbons, wire, powder, other (gross weight)	3,890	2,300	397	433	377	3,500
Total	19,600	15,700	2,800	2,540	2,360	23,400

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

Source: U.S. Census Bureau.