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Mineral Industry Surveys

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MAGNESIUM IN THE FOURTH QUARTER 2003

Exports of magnesium through November 2003 were about 16% less than those in the same period of 2002. Magnesium imports through November 2003 were about 8% less than those in the corresponding period of 2002. Russia (64%) and Israel (19%) were the principal sources of imported metal. Canada (54%) and China (30%) were the principal sources of imported alloys.

Quoted magnesium prices are shown in the table at the bottom of the page. Magnesium prices, in general, rose in the fourth quarter 2003.

On December 29, 2003, a fire at Garfield Alloys Inc.'s magnesium recycling plant in Garfield Heights, OH, destroyed the plant. The fire burned for 2 days, and magnesium scrap that had gotten wet exploded, but no one was seriously injured. A spark from a grinder used to open one of the metal drums containing the scrap was cited as the cause of the fire. Garfield Alloys' owners have said that they plan to rebuild the plant, but no timetable has been set. At the Garfield Heights, the company processed types II, III, and IV magnesium scrap; Garfield Alloys also owns a plant in nearby Bellevue, OH, that processes higher grade type I scrap. Some of the company's recycling has been shifted to the Bellevue plant (Associated Press, 2003§[1]; Brooks, 2004a).

A private investment firm, Magnesium Technologies Inc., purchased Rossborough-Remacor LLC's reagent business segment in December. The reagent business includes all of Rossborough-Remacor's iron desulfurization products and other magnesium-base products, production facilities in Walkerton, IN, and equipment located at customers' plants. The new firm will continue to do business under the Rossborough name (American Metal Market, 2003).

In Canada, Timminco Ltd. announced that it would suspend primary magnesium production at its Haley, Ontario, plant in the second half of 2004. The closure was expected to last several months, according to the company; customer orders would be filled from existing inventory. In addition, Timminco planned to move some anode fabrication operations from its Aurora, CO, facility to Mexico and consolidate production of strontium and calcium metals from Westmeath, Ontario, to its Haley plant. These closures and consolidations were expected to result in the loss of 50 jobs. Timminco has the capacity to produce about 9,000 metric tons per year (t/yr) of high-purity magnesium (Brooks, 2004b).

Although it had approval to construct a primary magnesium plant in Port Pirie, South Australia, Magnesium International Ltd. was considering alternative locations in Queensland and Victoria. The company cited lower power costs as the principal reason to consider other sites. A decision was expected in the first half of 2004. Magnesium International also signed an extension of its agreement with Germany's ThyssenKrupp Metallurgie GmbH covering the purchase of the entire output of the proposed magnesium plant. At full capacity, the company expected to production 91,000 t/yr (Nordic Magnesium Cluster, 2003b§).

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

	Unit	Beginning of quarter	End of quarter
Metals Week U.S. spot Western	Dollars per pound	$1.05-$1.10	$1.10-$1.17
Metals Week U.S. spot dealer import	do.	1.03-1.08	1.05-1.10
Metals Week European free market	Dollars per metric ton	1,850-1,950	1,850-1,950
Metal Bulletin free market	do.	1,760-1,810	1,850-1,950
Metal Bulletin China free market	do.	1,620-1,650	1,650-1,660

In China, companies continue to announce planned production capacity increases, although some companies have delayed previously announced plans because of a sharp rise in fuel costs and raw material and freight restrictions. According to its National Bureau of Statistics, China produced 336,000 metric tons of magnesium in 2003, a 35% increase from the 2002 production level (China Metal Market, 2003a).

Shanxi Qizhen Magnesium Corp. increased its ingot and powder production capacities in October. Ingot capacity was increased to 8,000 t/yr from 5,000 t/yr, and powder capacity was increased to 7,000 t/yr from 4,000 t/yr. In addition, the company planned to increase magnesium alloy production capacity to 20,000 t/yr and add 5,000 t/yr of magnesium extrusion capacity by 2004 (China Metal Market, 2003b).

Guangling Jinghua Corp. started its 10,000-t/yr magnesium alloy production line in December. Once the new line is fully operational, the company planned to close an older 8,000-t/yr alloy line. In addition, the company planned to double ingot production to 20,000 t/yr by 2004 and planned a further production increase to 40,000 t/yr by 2005 (Platts Metals Week, 2003a).

Shanxi Zhongjin Corp. announced that it would double its magnesium production capacity to 7,000 t/yr by August 2004. The company planned to install additional furnaces and upgrade the plant to achieve the capacity increase (Nordic Magnesium Cluster, 2003a§).

Minhe Magnesium Co. in Qinghai Province announced that it would increase magnesium alloy capacity by 1,000 t/yr to 4,000 t/yr in 2004. The plant has the capacity to produce 7,000 t/yr of magnesium ingot (Platts Metals Week, 2003b).

Winca Magnesium (Hebi) Co. Ltd., a wholly owned subsidiary of U.S. firm Winca Group Inc., planned to build a 12,000 t/yr magnesium alloy production line if it receives provincial governmental approval. If approved, the company expected to complete the plant by June 2004 at a cost of $12.1 million. Winca Magnesium has the capacity to produce 5,000 t/yr of primary magnesium at its Hebei City plant that was constructed in 2002, and it can produce some alloys and magnesium anodes. The company exports its products to Europe and the United States (Magnesium.com, 2003§).

Hebi Jianghai Smelting Co. Ltd. planned to increase its magnesium alloy production capacity to 36,000 t/yr from 6,000 t/yr by 2006. Construction of the first phase of the expansion, a 10,000-t/yr line, has begun and was expected to be completed by mid-2004. The company also produces magnesium chips, powder, and anodes at its Henan Province plant (Platts Metals Week, 2004).

Xinlihua Magnesium Powder Co. abandoned its plans to begin magnesium alloy production at its plant in Shanxi Province because it did not receive provincial governmental approval to purchase the necessary equipment. Production had been originally scheduled to begin in December 2003 (Platts Metals Week, 2003c).

In addition, a management restructuring at Shanxi Datong Zhongjin Magnesium Industry Co. was expected to delay the company's planned primary magnesium capacity expansion. The firm originally had planned on doubling its ingot production capacity to 7,000-8,000 t/yr by August 2004 (Platts Metals Week, 2003d).

Remag Alloys B.V. officially started up its new magnesium recycling plant on November 7, 2003. The 10,000-t/yr plant in Delfjil, Netherlands, was designed to process diecasting scrap.

IMCO Recycling Inc. announced plans to build a magnesium recycling plant in Germany. The company received a contract from carmaker BMW AG to recycle a new type of engine block with a high magnesium content. BMW will take back the recycled metal. The new magnesium recycling plant would be built next to the company's existing aluminum refinery at Toeging at a cost of around €4 million. The facility was expected to start operations in mid-2005, producing about 5,000 t/yr of magnesium alloy annually. Eventually the company planned to increase capacity to 15,000 t/yr (Reuters, 2004§).

Magnesium Elektron's new magnesium alloy, Elektron® 21, is being evaluated for the U.S. Expeditionary Fighting Vehicle. This vehicle operates in severe environments, including seawater, for which good corrosion characteristics are necessary. In addition, five other component manufacturers from the motorsports and aviation industries requested Elektron® 21 castings for evaluation (Magnesium Elektron, 2003§).

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

(Metric tons)

		2003				
	2002	January-August	September	October	November	January-November
Imports:						
Metal	29,900	16,100	2,820	2,550	2,250	23,700
Waste and scrap	14,100	10,900	1,030	1,570	1,160	14,700
Alloys (magnesium content)	41,900	26,500 [r]	3,110	3,300	2,600	35,500
Sheet, tubing, ribbons, wire, powder, and other (magnesium content)	2,090	877 [r]	98	93	57	1,130
Total	88,000	54,400 [r]	7,060	7,510	6,070	75,000
Exports:						
Metal	11,300	7,270	555	447	360	8,630
Waste and scrap	5,850	3,520	370	457	398	4,740
Alloys (gross weight)	4,210	1,180	124	536	354	2,200
Sheet, tubing, ribbons, wire, powder, and other (gross weight)	4,010	2,970	396	364	338	4,060
Total	25,400	14,900	1,450	1,800	1,450	19,600

[r] Revised.

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

Source: U.S. Census Bureau.