

# Mineral Industry Surveys

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## MAGNESIUM IN THE THIRD QUARTER 1999

Domestic primary magnesium production in the third quarter was 11% less than that in the previous quarter, according to the U.S. Geological Survey. Producers' stocks were 5% lower and shipments were slightly lower than those in the second quarter of 1999.

Exports of magnesium through August 1999 were 26% less than those in the same period of 1998. Magnesium imports through August 1999 were 6% higher than those in the

corresponding period of 1998.

Quoted prices of primary magnesium declined slightly from those at the end of the second quarter. Beginning in August, Metal Bulletin separated the estimated prices of magnesium from China from its free market composite price and reported the China price separately. This change caused the range to become narrower, and the overall price increased. Prices are shown in the following table.

	Units	Beginning of quarter	End of quarter
Metals Week U.S. spot Western	Dollars per pound	\$1.52-\$1.60	\$1.48-\$1.62
Metals Week U.S. spot dealer import	do.	1.34-1.39	1.30-1.36
Metals Week European free market	Dollars per metric ton	2,500-2,600	2,450-2,550
Metal Bulletin free market	do.	2,250-2,700	2,400-2,500
Metal Bulletin China free market	do.	Not available	1,500-1,600

In September, the International Trade Administration (ITA) issued its final determinations of antidumping and countervailing duties for magnesium imported into the United States from Norsk Hydro Canada Inc. The countervailing duty for pure and alloy magnesium was established at 2.02% ad valorem for calendar year 1997 (U.S. Department of Commerce, 1999b). The ITA established an antidumping duty for pure magnesium for the period of August 31, 1997, to July 31, 1998, at 0% ad valorem, however, it also determined that Norsk Hydro does not qualify for revocation of the antidumping order because the company does not have 3 consecutive years of sales in commercial quantities at fair market values (U.S. Department of Commerce, 1999c). The ITA also began administrative reviews of the aforementioned determinations in October; antidumping duties for pure magnesium are to be reviewed for August 1, 1998, to July 31, 1999, and countervailing duties for pure and alloy magnesium are to be reviewed for calendar year 1998. The results are expected by August 31, 2000 (U.S. Department of Commerce, 1999a).

In September, the European Commission (EC) began a review of antidumping measures that it had instituted on magnesium imported from China. The EC had set a duty of the difference between the c.i.f. Europe price of the Chinese magnesium and the minimum import price of 2,622 euros (\$2,777) per metric ton. European parties that were related to a Chinese exporter were to pay a duty of 31.7% ad valorem. These duties have been in effect since November 1998, but the French magnesium producer, Pechiney, claimed that even with these duties, import prices for Chinese magnesium have remained below the minimum import price. Questionnaires sent out by the EC to interested parties were expected to be returned by October 14 (Metal Bulletin, 1999a).

Volkswagen AG of Germany and Israel Chemicals Ltd. will invest \$100 million to expand the Dead Sea Magnesium primary magnesium plant in Sdom. The investment will increase capacity from the current level of 25,000 tons per year, and the 65% ownership of the plant will be transferred from Israel Chemicals

to Dead Sea Magnesium. Although the capacity increase was not stated, original plans for the plant called for an expansion to 50,000 tons per year (Platt's Metals Week, 1999c).

In July, the Ukrainian Government removed the Canadian firm Shelton from the management of the Government's 50% share of the Kalush magnesium plant, although the contract was not formally dissolved. The Kalush plant has been closed since the beginning of 1999, and Shelton claimed that the plant would need \$50 million for refurbishment before it could be reopened. This investment would need to come from foreign investors, and Shelton was planning to privatize the plant. The Government claimed that because the plant had closed after it turned over management of the plant to Shelton and that Shelton's plans for refurbishment had not materialized, it was regaining control of the plant (Metal Bulletin, 1999c).

In Australia, development continued on a number of new magnesium projects. Six new projects have been proposed for the country, with a total of 438,000 tons of annual capacity, most of which are planned to begin commercial production in 2003 or 2004.

Australian Magnesium Corp. produced the first magnesium test ingot at its demonstration plant near Gladstone, Queensland, in September. The company plans to study and refine its patented production technology over the next 6 months. Based on continued success with its production technology, Australian Magnesium Corp. plans to complete construction of a 90,000-ton-per-year plant by 2002, with commercial production scheduled for 2004 (Platt's Metals Week, 1999a).

Hatch Associates Ltd. of Canada completed a feasibility study on Samag's proposed 52,000-ton-per-year magnesium plant in Port Augusta, South Australia. Results of the study indicate that capital costs for the plant would be \$375 million, and the cash cost of production would be 60 cents per pound. Samag is 80% owned by Pima Mining Co. and 20% by Resource Finance Corp., both Australian-based firms. The company plans to use technology it licensed from Dow Chemical Co. to produce magnesium from magnesite from the Leigh Creek deposit (estimated indicated and inferred resources of 516 million tons, grading 42% MgO). Samag plans to have funding and offtake agreements by June 2000, with initial production scheduled for 2003 (Metal Bulletin, 1999b).

Mt. Grace Resources announced that it would continue developing its Batchelor magnesite mine in the Northern Territory following an agreement to license Magnesium Development International's Heggie production technology. Mt. Grace plans to develop the project in stages, beginning in June 2000, and reach full capacity of 50,000-tons-per-year by 2004. Inferred magnesite resources for the project are 20.7 million tons, grading 42% MgO, but the company plans further drilling to upgrade the deposit to a measured or indicated status (Platt's Metals Week, 1999e).

Financial negotiations between Crest Magnesium NL and Glencore International AG of Switzerland collapsed in September. Glencore was to provide financing for Crest's proposed 95,000-ton-per-year magnesium plant in Bell Bay, Tasmania. Part of the reason for the collapse was that Glencore wanted 99% equity in the proposed plant and Crest wanted to

retain at least 10% equity (Gomez, 1999). In addition, Crest's partner in the project, Multiplex Constructions Pty. Ltd., withdrew from the project in October. Multiplex held the right to take up to 60% of the plant. These two factors may delay the project, which was scheduled to begin construction by January 2000, and to be completed by December 2002 (Platt's Metals Week, 1999f).

Anaconda Nickel announced that it is considering plans to invest \$646 million in magnesite resources that it has in Western Australia, with the eventual goal of constructing a magnesium metal plant. The magnesite resources are near the company's Murrin Murrin nickel-cobalt project that Anaconda is commissioning. A preliminary study indicated that a plant with the capacity to produce 100,000 tons of magnesium per year could be economically feasible, if current energy costs can be reduced. ICF Kaiser Engineering has been retained to carry out a preliminary study of available process options and their economics (Platt's Metals Week, 1999b).

Norsk Hydro Canada will not replace its direct chill caster that was damaged in an explosion in January. The company cited cost and employee safety as the reasons for the decision. Instead, the company will produce a new large magnesium sow to replace the T-bar ingots. Unlike traditional sows, however, the new sow will not have a cavity, which can trap moisture and increase the risk of explosions. The 250- to 1,500-pound sows will be available in the "T" shape, which is the preferred shape by the aluminum industry for ease of handling by forklifts. Norsk Hydro Canada plans to have prototype products available by the end of October for testing (Platt's Metals Week, 1999d).

## References Cited

- Gomez, Brian, 1999, Magnesium project partners feud: American Metal Market, v. 107, no. 176, September 13, p. 7.
- Metal Bulletin, 1999a, EU launches Chinese Mg anti-dumping review: Metal Bulletin, no. 8408, September 13, p. 14.
- 1999b, Latest study improves viability of Australian Mg project: Metal Bulletin, no. 8413, September 30, p. 7.
- 1999c, Ukraine regains control of Kalush Mg plant: Metal Bulletin, no. 8399, August 9, p. 5.
- Platt's Metals Week, 1999a, Australian Magnesium Corp produces first test metal: Platt's Metals Week, v. 70, no. 36, September 6, p. 4-5.
- 1999b, Australia's Anaconda Nickel studies magnesium project: Platt's Metals Week, v. 70, no. 31, August 2, p. 13.
- 1999c, Dead Sea Magnesium gets \$100-million expansion goal: Platt's Metals Week, v. 70, no. 43, October 25, p. 12.
- 1999d, Hydro Magnesium won't rebuild DC caster, has new sow: Platt's Metals Week, v. 70, no. 34, August 23, p. 12.
- 1999e, Mt Grace plans to start Australian magnesium plant next year: Platt's Metals Week, v. 70, no. 37, September 13, p. 10.
- 1999f, Multiplex bows out of Crest Mg: Platt's Metals Week, v. 70, no. 41, October 11, p. 10.
- U.S. Department of Commerce, International Trade Administration, 1999a, Initiation of antidumping and countervailing duty administrative reviews and requests for revocation in part: Federal Register, v. 64, no. 190, October 1, p. 53318-53320.
- 1999b, Pure magnesium and alloy magnesium from Canada—Final results of countervailing duty administrative reviews: Federal Register, v. 64, no. 173, September 8, p. 48805-48807.
- 1999c, Pure magnesium from Canada; final results of antidumping duty administrative review and determination not to revoke order in part: Federal Register, v. 64, no. 180, September 17, p. 50489-50493.

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

(Metric tons)

	1999					
	1998	January- May	June	July	August	January- August
<b>Imports:</b>						
Metal	26,500	12,000	1,240	1,990	2,330	17,600
Waste and scrap	5,720	2,550	493	612	538	4,200
Alloys (magnesium content)	49,600	20,900	4,200	3,390	5,600	34,000
Sheet, tubing, ribbons, wire, powder, and other (magnesium content)	757 r/	148	194	29	37	408
Total	82,500	35,600	6,130	6,010	8,500	56,300
<b>Exports:</b>						
Metal	11,500	2,320	486	639	446	3,890
Waste and scrap	13,200	6,880	1,390	900	1,160	10,300
Alloys (gross weight)	9,230 r/	1,130	150	185	146	1,610
Sheet, tubing, ribbons, wire, powder, and other (gross weight)	1,470	2,000	488	412	363	3,260
Total	35,400	12,300	2,520	2,140	2,120	19,100

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1/ Data are rounded to three significant digits; may not add to totals shown.

Source: Bureau of the Census.