

Mineral Industry Surveys

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MAGNESIUM IN THE SECOND QUARTER 2011

U.S. magnesium exports for the first half of 2011 were 33% lower than exports for the same period of 2010. Exports of alloys, which had been the leading export category in 2010, decreased by more than 50%. Magnesium imports for consumption for the first half of 2011 were essentially the same as those in the same period of 2010. Israel (83%) was the principal source of imported magnesium metal. China (31%), Israel (21%), and Japan (10%) were the main sources of alloy imports.

Quoted magnesium prices for the second quarter of 2011 are shown in table 2. United States' prices decreased slightly, and prices in China and Europe were slightly higher. Press reports indicated that at least one large U.S. aluminum user had purchased magnesium for its second half 2011 requirements for \$2.30 per pound, but smaller quantities were sold at \$2.50 to \$2.60 per pound. Prices could increase, as some producers and traders expected more deals to be completed later in 2011, and, except for diecasters, neither magnesium producers nor consumers had significant inventories to use up (McBeth, 2011).

The U.S. Department of Commerce, International Trade Administration (ITA) published preliminary results of the antidumping duty review of pure and alloy magnesium imports from Russia for April 1, 2009, through March 31, 2010. For VSMPO-Avisma Corp., the duty was set at 0% ad valorem. Solikamsk Magnesium Works did not ship magnesium to the United States during the period of review, so its rate was set at the rate that was in effect the last time the company had U.S. sales (U.S. Department of Commerce, International Trade Administration, 2011a). The ITA also published preliminary results of its antidumping duty review of imports of pure magnesium from China for Tianjin Magnesium International Co. Ltd. (TMI). For the review period of May 1, 2009, through April 30, 2010, the ITA determined that TMI had not sold material at less than normal value, so it set the duty at 0% ad valorem (U.S. Department of Commerce, International Trade Administration, 2011b). The ITA also rescinded a review of TMI's antidumping duties for pure magnesium for May 1, 2010, through April 30, 2011, because the company did not ship magnesium to the United States during this period (U.S.

Department of Commerce, International Trade Administration, 2011c).

The U.S. International Trade Commission planned to conduct a third 5-year review of the antidumping duty order for pure magnesium from China. The original order was instituted in 1995, and 5-year reviews were conducted in 2000 and 2006 (U.S. International Trade Commission, 2011).

The U.S. Court of International Trade upheld the ITA's remand decision regarding imposition of a 111.73% ad valorem antidumping duty on TMI for May 1, 2007, to April 31, 2008. (See Magnesium in the Fourth Quarter 2010.) The court determined that TMI did not cooperate with the ITA during the investigation (U.S. Court of International Trade, 2011).

The ITA reportedly issued a preliminary ruling that Applied Magnesium International (Denver, CO) would be subject to antidumping duties on magnesium granules that were produced in Mexico from magnesium ingots produced in China. These granules would be subject to a 305.56% ad valorem antidumping duty; U.S. Magnesium LLC had requested that ITA review the shipments review in April (Baltic and Matyi, 2011).

On July 5, the World Trade Organization (WTO) issued its report concerning allegations by the European Union, Mexico, and the United States regarding export restraints maintained by China on various metals and minerals including magnesium. A panel had been convened by the WTO in 2009 in response to the allegations. The panel found that the export duties and export quotas that China maintained on various forms of magnesium constituted a breach of WTO rules and that China failed to justify those measures as legitimate conservation measures, environmental protection measures, or short supply measures. The panel also found that China's imposition of minimum export price, export licensing, and export quota administration requirements on these materials, as well as China's failure to publish certain measures related to these requirements, was inconsistent with WTO rules (Office of the U.S. Trade Representative, 2011). China planned to appeal the WTO's findings (Rong, 2011).

Metal-Oxygen Separation Technologies Inc. (Natick, MA) received a \$6 million grant from the U.S. Department of Energy

(DOE) to scale up its new technology to produce magnesium from magnesium oxide. The company planned to use the funds to support a 3-year pilot-plant project to produce 30 to 50 metric tons per year (t/yr) of magnesium. The funding was from the DOE's Vehicle Technologies Program; magnesium's light weight was expected to be important in achieving new Federal corporate average fuel economy requirements of 35.5 miles per gallon in 2016. Metal-Oxygen Separation Technologies was founded in 2008 and received Federal funding from the DOE and the National Science Foundation and from private investors (Alspach, 2011).

Molycor Gold Corp. completed a resource analysis for its Tami-Mosi magnesium property in Nevada that estimated the inferred resource to be 412 million metric tons (Mt) of dolomite at an average grade of 12.3% magnesium. Using a cutoff grade of 12% magnesium, the contained metal content would be 50.3 Mt of magnesium. Molycor also completed an economic assessment for a 30,000-t/yr silicothermic plant, with a capital cost of \$424 million and operating costs of \$1.28 per pound of recovered magnesium. Molycor planned to complete a prefeasibility study by early 2014 (Molycor Gold Corp., 2011). Molycor has been evaluating the Tami-Mosi property since at least 2007.

According to data from China's National Bureau of Statistics, China produced 383,000 metric tons of magnesium in the first half of 2011. This was 15% lower than the quantity produced in the first half of 2010 (Platts Metals Week, 2011).

The Armenian Development Agency announced that a primary magnesium plant would be constructed at the Yeghvard branch of Yerevan Scientific Research Institute of Mathematical Machines (more commonly known as Mergelyan Institute) if enough investors are found. Initial plans called for a \$1 million investment to produce 300 t/yr of magnesium, with an additional \$6 million to increase production to 10,000 t/yr (PanARMENIAN.net, 2011).

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

(Metric tons)

| | 2011 | | | | | |
|---|---------------|-------------------|--------------|--------------|--------------|------------------|
| | 2010 | January– March | April | May | June | January– June |
| Imports for consumption: | | | | | | |
| Metal | 18,200 | 3,300 | 1,560 | 1,240 | 915 | 7,010 |
| Waste and scrap | 22,100 | 5,490 | 1,770 | 2,150 | 1,910 | 11,300 |
| Alloys (magnesium content) | 11,600 | 2,590 | 1,300 | 1,260 | 844 | 5,990 |
| Sheet, tubing, ribbons, wire, powder, and other (magnesium content) | 788 | 197 | 77 | 107 | 59 | 440 |
| Total | 52,700 | 11,600 | 4,710 | 4,760 | 3,730 | 24,800 |
| Exports: | | | | | | |
| Metal | 5,300 | 1,340 | 417 | 384 | 437 | 2,580 |
| Waste and scrap | 481 | 157 | 54 | 176 | 266 | 653 |
| Alloys (gross weight) | 6,940 | 1,270 | 252 | 260 | 166 | 1,950 |
| Sheet, tubing, ribbons, wire, powder, and other (gross weight) | 2,070 | 385 | 130 | 148 | 136 | 799 |
| Total | 14,800 | 3,150 | 854 | 968 | 1,010 | 5,980 |

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

Source: U.S. Census Bureau.

TABLE 2
MAGNESIUM PRICES, SECOND QUARTER 2011

| | | Beginning of quarter | End of quarter |
|-------------------------|------------------------|----------------------|----------------|
| U.S. spot dealer import | dollars per pound | 2.30–2.40 | 2.25–2.40 |
| U.S. spot Western | do. | 2.50–2.60 | 2.30–2.50 |
| China | dollars per metric ton | 3,080–3,120 | 3,170–3,220 |
| European free market | do. | 3,150–3,250 | 3,250–3,350 |
| do. Ditto. | | | |

Source: Platts Metals Week.