Roskill *Expanding the world's knowledge of metals and minerals markets*

The Economics of Magnesium Metal

Tenth Edition, 2008

Read the definitive report on the global magnesium metal industry, its markets and its future

What this report gives you:

- Independent, in-depth research and analysis
- Essential market intelligence for successful business planning
- Detailed survey of production and processing in over 30 countries
- Up-to-date profiles of the activities of over 54 producing and processing companies and potential projects
- Forecasts for end-use consumption & world supply & demand

A valuable resource for:

- Chief executives
- Market researchers
- Information centres
- Strategic planners
- Financial analysts
- Product developers

World market continues to be dominated

China's domination of the world's magnesium industry continues to grow in both supply and demand. The closure of Norsk Magnesium's plant in Canada in 2006, followed several closures of plants in the West since 1998, leaving only six significant primary magnesium producers outside China, two of which produce for their own use. As a result, Chinese production accounted for 77% of global output of about 860kt in 2007.

Virtually all new magnesium projects outside China investigated or implemented in the last few years, have either been abandoned or put on maintenance because they are not considered economically attractive in the face of Chinese competition. One possible alternative source of supply is the Kouilou Magnesium project in the Republic of Congo. MagMetals plans to produce 72ktpy of primary magnesium near Pointe Noire, as a co-product of potash. More than 200ktpy of new capacity in China came on stream in 2007, or will do so in 2008 and 2009.

The market for magnesium in China, by far the largest in the world, was about 250kt in 2007 or some 30% of global consumption. Magnesium alloy die-cast components, particularly in the automobile industry, have become the largest market for the metal, surpassing its use as a minor alloying addition in aluminium (mainly for use in beverage cans) in the mid 2000s. Demand for magnesium die-castings in China doubled in 2006, and continues to show spectacular growth as private car ownership is increasing at rates in excess of 50%py.

Although prices for magnesium more than doubled in 2007, they are still within historic ranges, and are not yet attracting investors into new magnesium projects outside China.

Report Highlights

Virtually all Chinese magnesium is produced by the Pidgeon process, which has been widely modernised using large computer-controlled rotary kilns, coke oven gas or coal-water mixtures instead of direct combustion of coal, and recycling of exhaust gasses to provide extra heat for both reduction and refining furnaces.

World production of primary magnesium increased from about 485kt in 2002 to 757kt in 2006, an average year-on-year increase of 7%, and reached about 860kt in 2007. Secondary magnesium from recycled alloys and as a constituent of recycled aluminium alloys, is an important source of supply particularly in the USA, where it accounts for over 40% of supply. It is of much less importance elsewhere. Global recycling of magnesium amounts to about 150ktpy, about half of which takes place in the USA.

With the closure of Norsk's Canadian plant in 2007, production of primary magnesium metal is confined to just six countries, and China's overwhelming dominance of the industry continues to grow. In 2006, Chinese production accounted for about 72% of global output, and was expected to be about 77% in 2007.

Chinese primary magnesium production rose from 76kt in 1997 to some 660kt in 2007, an average year-on-year increase of about 26%. Most Chinese production capacity is located at relatively small plants, but the percentage of output from plants with capacities of more than 10ktpy increased from 45% in 2000 to some 70% in 2006.

World consumption of magnesium increased sharply between 2002 and 2005 to reach about 800kt. Despite rising demand in China, consumption appears to have levelled out in 2006 because of falling demand in the USA and Europe. Global consumption probably increased in 2007, largely because of a 60% increase in Chinese consumption to about 250kt or 30% of world demand. Apparent consumption indicates that the USA (20%), Japan, Canada, Italy and Germany are the other major markets for magnesium.

The packaging industry is the largest market for magnesium in aluminium alloys, accounting for around half of magnesium demand by the aluminium industry. The transport industry, which is the largest consumer of aluminium, is probably the second largest market for magnesium in aluminium alloys.

Sources and Methodology

This report is the result of an extensive programme of research by Roskill analysts. They have conducted a close appraisal of information from a wide variety of sources, including governments, trade associations, company sources, official organisations, trade journals and technical literature.

Information gathering is only the first step in preparing a report. The data is then extensively analysed so that the finished report provides a comprehensive insight into the industry today, as well as top-level analysis of the long-term prospects.

Authoritative research in this report can help you:

- Explore commercial opportunities
- Gather intelligence on your competitors
- Strengthen your business capabilities
- Plan your materials buying & sourcing
- Assess key trends and growth areas
- Establish sales targets for your products
- Analyse company market share
- Save time searching for specialist information
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Table of contents (A full table of contents is available at *www.roskill.co.uk*)

241 pages, 94 tables, 69 figures

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