

A Perspective: Potential Growth in the Global Magnesium Industry – Environmental Impacts & Recyclability

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Abstract

Magnesium enjoyed considerable growth in the last decade of the twentieth century due to an increase in automotive die casting alloy applications for light-weighting. In spite of considerable research activity into wrought applications in the last fifteen years, the use of sheet and extrusions is largely limited to non-structural applications, primary batteries and small electronic devices (cameras, cell phones, lap-tops & tablets), and cathodic protection. The major volume use for magnesium metal remains as an alloying element for aluminium, and as a chemical reducing or microstructure modifying agent in the production of titanium, steel and SG iron. Powders are currently used in organic chemical reactions and as thermal decoy devices rather than for any structural purpose, however applications in energy storage devices continue to be actively pursued, and bioresorbable implants are beginning to gain market acceptance.

The International Magnesium Association exists to promote the end uses of magnesium and to represent the industry as a whole in issues that affect its members. In the last 5 years the IMA has sponsored a Life Cycle Study for magnesium being used in automotive and aerospace applications, a video to promote wider application of the metal, and an End of Life Scrap Study for the European Market. In spite of projected CAGRs of around 8% for the next 10 years, today global consumption of the metal remains less than 1 million tonnes and less than 2% of the size of the global aluminium market. This industry size today presents a challenge for the European Economy to promote the end of life recovery of the metal using fully functional recycling rather than allowing magnesium to be removed in aluminium refining operations.

To hear more on the research of the International Magnesium Association and gain access to their findings [register free for Birmingham City University's Magnesium Symposium on 20th July.](#)