

Microstructure and Properties of Magnesium Alloys Working at Elevated Temperatures

Jan Serak, Milena Voderova, Dalibor Vojtech, Pavel Novak

Institute of Chemical Technology, Prague, Department of Metals and Corrosion Engineering, Technická 5, 166 28 Prague 6, Czech Republic. E-mail: serakj@vscht.cz

Most of magnesium alloys are usually used for applications at ambient temperature. The significant decrease in mechanical properties is observed already at the temperatures higher than 150°C. This is the reason for the effort to prepare a new low-priced magnesium based alloys with improved mechanical properties at elevated temperatures, e.g. for components of combustion engines. The microstructure and mechanical properties of selected commercial magnesium alloys AZ31, EZ23, ZE41 and WE43 with relatively new MRI153 alloy for use at elevated temperature were compared. Brinell hardness, yield strength and tensile strength at the temperatures of 20, 150 and 200°C were studied. It was found, that relatively low-priced MRI153 alloy appears to be very good alternative alloy for use at elevated temperatures.

Keywords: magnesium alloys; mechanical properties

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