Inoculant Addition Effect on Thermomechanical and Thermophysical Properties of Mg-Sr Magnesium Alloy

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Satisfactory tensile properties, even at elevated temperatures, are very important for thermally stressed parts in car structures (e.g. cylinder heads and engine blocks). This condition is satisfied also by magnesium-based alloys containing strontium and rare earth metals, which are very expensive, though. The presented paper deals with study of Mg-Sr-type magnesium alloy. To be specific, this is AJ62 alloy which belongs among developmentally new magnesium-based alloys. This alloy combines very good castability and heat resistance, moreover, this is cost-effectively available material. This paper is focused on this alloy structure refinement. Analysis of the acquired structure after an inoculant addition and its effect upon thermomechanical properties was performed. In term of safety of the use of this alloy for thermally stressed automotive parts, thermal dilatation tests of prepared specimens were carried out as well.

Keywords: Magnesium alloys, thermomechanical properties, microstructure, inoculation

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