

# Aging behavior of Mg - Li - Al - Zn alloy with Scandium addition

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## Abstract

An Mg - Li based alloy containing Sc addition has been prepared by melting and solidification in a carbon steel crucible, and extruded at a billet preheating temperature of 200C with an extrusion ratio of 28. Age heat treatments were performed to investigate the effect of minor addition of Sc on the microstructures and mechanical properties. Hardness, optical microscopy, X-ray diffraction studies, and tensile tests were carried out to explore the variations in microstructures and mechanical behaviors during processing. The Mg - Li based alloy with Sc addition presented age hardenable effect at room temperature. The hardness decreased rapidly with aging temperature at temperatures below 50C.

Keyword : Metals; Precipitation; X-ray diffraction; Scanning electron microscopy, SEM