

Abstract: Magnesium alloys are currently widely used in industry as a modern material. Magnesium based alloys with rare earth elements shows very promising mechanical properties. In the present work the precipitation effects and the development of microstructure of the Mg13Tb alloy (containing 13 wt.% of terbium) during isochronal annealing were studied by positron annihilation spectroscopy, microhardness measurement and differential scanning calorimetry. According to the results the creation of the precipitates β'' , β' and β in the studied alloy was observed and activation energies of these precipitates were determined by the Kissinger method. By microhardness measurement the natural ageing at room temperature of the Mg13Tb alloy was observed and described.