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The effect of theartificial aging on the precipitation kinetic in the Al-Mg-Sialloy

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Abstract : In this study, the effect of the artificial aging on the kinetics of the precipitationprocesses in the Al-Mg-Si alloy was investigated by differential scanning calorimetry andhardness examinations.This investigation revealed that the artificial aging has apositive effecton the precipitation kinetic.The activation energy of the precipitation process was calculatedusing Kissinger model. The result of this studyshowed a change in hardness values and in theactivation energy for all precipitated phases. The hardness have high values at the higheraging temperature. The activation energy of the metastable phase is determined as 41.55,which indicate that the formation of this phase isuncomplicatedduring artificial aging.

Keywords : Al-Mg-Si, Precipitation, kinetic, DSC.