

Evolusi Mikrostruktur Paduan Al-Cu-Mg-Cd selama Proses Penuaan (Aging) pada Temperatur 200' C

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Abstrak

The present work observed the evolution of microstructure in an Al-4Cu-0.3Mg-0.5Cd (wt. %) alloy aged at 200 °C. The precipitation sequence in this alloy was found to be dominated by the binary Al-Cu alloy classical transformation, ie: GP zones \rightarrow θ'' \rightarrow θ' \rightarrow θ) Analytical transmission electron microscope revealed that elemental Cd precipitates formed at later stages of ageing. These precipitates were associated with the θ' platelets, both on the rim and the broad facet of the precipitates. Small precipitates with similar morphology with the Cd precipitates were also observed at the early stages of ageing. These suggest that the Cd precipitates provide sites for θ' to nucleate, resulting in an increased dispersion of θ' . On the other hand these also suggest that Cd nucleates heterogeneously at the θ / α interface.