

The AA8079 aluminum alloy prepared by twin-roll casting is commonly used as foil stock for manufacturing of thin packaging foil. Due to the nature of the casting method and material composition microstructure of the material is not homogenous and contains a fraction of intermetallic particles clustered in eutectic colonies. As such, the material requires heat treatment before further processing. Different temperatures of homogenization annealing affect the microstructure of the material in different ways. The homogenized material then undergoes a series of rolling passes which causes work hardening. A recrystallization annealing is required at an intermediate gauge before rolling to final thickness to restore ductility of the material. Recrystallization behavior is affected by the present intermetallic particles, their size and distribution. The influence of different homogenized microstructures on control of the recrystallization process through was studied, recrystallization kinetics were evaluated and two main influencing mechanisms – particle stimulated nucleation and Zener drag were identified.