Strukturelle Untersuchung der Ausscheidung in einer Aluminiumlegierung mit 1, 1 Gew.-% Zr

Strukturelle Untersuchung der Ausscheidung in einer Aluminiumlegierung mit 1,1 Gew.-% Zr*

Osamu IZUMI and Dietrich OELSCHLÄGEL

The Research Institute for Iron, Steel and Other Metals

Abstract

Structure and distribution of the precipitates in a highly supersaturated Al-1.1 %Zr alloy were investigated at temperatures between 200°C and 550°C. In addition to the tetragonal equilibrium phase Al_3Zr an intermediate phase with cubic ordered structure ($L1_2$-type) was found. At $T \geqq 450$°C this phase occurs in the form of coherent spherical particles or, after redistribution of the spheres, as rods in fan shaped arrangement. At $T < 450$°C this phase is formed by discontinuous precipitation. Both the lattices of the intermediate and the equilibrium phase lie parallel to that of the matrix. The existence of the cubic ordered structure can be explained from the crystal structure of the tetragonal equilibrium phase.

* The **1479th** report of the Research Institute for Iron, Steel and Other Metals. Published in the Zeitschrift für Metallkunde, **60** (1969), 845.