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Effect of 2-6 at.% Mo addition on microstructural evolution of Ti-44Al alloy

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Abstract

In order to understand the effect of Mo alloying on the microstructural evolution of TiAl alloy, the as-cast microstructure, heat treated microstructure characteristic, and hot compression microstructure evolution of Ti-44Al alloy have been studied in this work. The as-cast microstructure morphology changes from $(\gamma+\alpha_2)$ lamellar colony and $\beta/\beta_0+\gamma$ mixture structure to β/β_0 phase matrix widmannstatten structure, when Mo content increases from 2 at.% to 6 at.%. Affected by the relationship between β phase and α phase, the angles between the lamellar orientation and the block β/β_0 phase are roughly at 0° , 45° and 90° . Comparing with heat treatment microstructure, the hot compression microstructure contains less β/β_0 phase, however,

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