

Title (en)
HEAT-RESISTANT MAGNESIUM ALLOY

Title (de)
HITZEBESTÄNDIGE MAGNESIUMLEGIERUNG

Title (fr)
ALLIAGE DE MAGNÉSIUM RÉSISTANT À LA CHALEUR

Publication
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Application
EP 08710964 A 20080201

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Abstract (en)
A heat-resistant magnesium alloy according to the present invention includes Mg, a major component; a first alloying element "M1" being any one or more members that are selected from the group consisting of Al and Ni; a second alloying element "M2" being any one or more members that are selected from the group consisting of Mn, Ba, Cr and Fe; and Ca; and it has a metallic structure including: Mg crystalline grains; plate-shaped precipitated substances being precipitated within grains of the Mg crystalline grains; and grain-boundary crystallized substances being crystallized at grain boundaries between the Mg crystalline grains to form networks that are continuous microscopically. Since the plate-shaped precipitated substances exist within the Mg crystalline grains, the movements of dislocation within the Mg crystalline grains are prevented, and accordingly it becomes less likely to deform. Moreover, since the grain-boundary crystallized substances, which form the networks, are present continuously microscopically at the grain boundaries between the Mg crystalline grains, the strength at the grain boundaries improves. The heat-resistant magnesium alloy according to the present invention in which both of the Mg crystalline grains' granular interior and the grain boundaries between the Mg crystalline grains are strengthened exhibits high mechanical characteristics even in high-temperature regions.

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