Title (en)

Magnesium alloy and production process thereof

Title (de)

Magnesiumlegierung und Herstellungsverfahren

Title (fr)

Alliage de magnésium et procédé de fabrication

Publication

**EP 1640466 A1 20060329 (EN)**

Application

**EP 05020951 A 20050926**

Priority

JP 2004280878 A 20040928

Abstract (en)

Provided are a magnesium alloy which is inexpensive, can be produced at a high yield, and has both high strength and high ductility; and a production process of the magnesium alloy. The magnesium alloy contains from 1 to 4 atomic % of Zn and from 1 to 4.5 atomic % of Y at a Zn/Y composition ratio ranging from 0.6 to 1.3, and contains both an intermetallic compound Mg 3 Y 2 Zn 3 , and Mg 12 YZn having a long period structure. It may contain from 2 to 3.5 atomic % of Zn and from 2 to 4.5 atomic % of Y at a Zn/Y composition ratio falling within a range of from 0.8 to 1.2. It may contain from 1 to 4 atomic % of Zn, from 1 to 4.5 atomic % of Y and from 0.1 to 0.5 atomic % of Zr and contains, as a remaining portion, Mg and inevitable impurities. An alloy structure having both an intermetallic compound Mg 3 Y 2 Zn 3 and Mg 12 YZn having a long period structure is available by casting an Mg alloy containing from 1 to 4 atomic % of Zn and from 1 to 4.5 atomic % of Y at a Zn/Y composition ratio ranging from 0.6 to 1.3, followed by plastic processing.

IPC 8 full level

**C22C 23/04** (2006.01); **C22F 1/06** (2006.01)

CPC (source: EP US)

**C22C 23/04** (2013.01 - EP US); **C22C 23/06** (2013.01 - EP US); **C22F 1/06** (2013.01 - EP US)

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Designated contracting state (EPC)

DE FR GB

DOCDB simple family (publication)

**EP 1640466 A1 20060329**; **EP 1640466 B1 20090805**; DE 602005015799 D1 20090917; JP 2006097037 A 20060413; JP 4500916 B2 20100714; US 2006065332 A1 20060330

DOCDB simple family (application)

**EP 05020951 A 20050926**; DE 602005015799 T 20050926; JP 2004280878 A 20040928; US 23522905 A 20050927