

Title (en)

Magnesium alloy containing rare earth metals

Title (de)

Seltenerdmetalle enthaltende Magnesiumlegierung

Title (fr)

Alliage de magnésium contenant des métaux de terres rares

Publication

EP 2481825 A1 20120801 (EN)

Application

EP 11152827 A 20110201

Priority

EP 11152827 A 20110201

Abstract (en)

The present invention relates to single-phase solid solution magnesium alloys suitable for the applications as cast or wrought. These alloys are prepared by multi-microalloying with rare earth elements (including gadolinium, yttrium, dysprosium, samarium, lanthanum, cerium, neodymium and praseodymium). Each alloy contains 0.5 to less than 5 wt.% rare earth elements with a content of 0.05-2.0 % by weight. The total amount of rare earth elements is controlled below 5 % by weight in order for economical considerations. The amount of grain refiner calcium or zirconium is in the range of 0.05-0.6 % by weight. These alloys can be prepared by die casting, permanent casting, chill casting, semi-solid processes, continuous casting and continuous twin roll casting.

IPC 8 full level

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

CPC (source: EP US)

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

Citation (search report)

- [X] WO 2009086585 A1 20090716 - CAST CRC LTD [AU], et al
- [X] WO 2009039581 A1 20090402 - CAST CRC LTD [AU], et al
- [X] WO 2004001087 A1 20031231 - CAST CENTRE PTY LTD [AU], et al
- [X] WO 2006125278 A1 20061130 - CAST CENTRE PTY LTD [AU], et al
- [X] SUDHOLZ, A. D. ET AL: "Unraveling the corrosion properties of magnesium rare earth alloys", MAGNESIUM, INTERNATIONAL CONFERENCE ON MAGNESIUM ALLOYS AND THEIR APPLICATIONS, 8TH, WEIMAR, GERMANY, OCT. 26-29, 2009 , MEETING DATE 2009, 866-871. EDITOR(S): KAINER, KARL ULRICH. PUBLISHER: WILEY-VCH VERLAG GMBH & CO. KGAA, WEINHEIM, GERMANY. CODE, 2010, XP009157828

Cited by

CN112941385A; CN111155014A; CN104131204A; CN103820689A; CN104690236A; CN115233061A; CN104278185A; CN114892055A

Designated contracting state (EPC)

AL AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LI LT LU LV MC MK MT NL NO PL PT RO RS SE SI SK SM TR

Designated extension state (EPC)

BA ME

DOCDB simple family (publication)

EP 2481825 A1 20120801; **EP 2481825 B1 20130508**; CA 2765484 A1 20120801; CN 102628134 A 20120808; CN 102628134 B 20160629; ES 2423354 T3 20130919; US 2012195787 A1 20120802

DOCDB simple family (application)

EP 11152827 A 20110201; CA 2765484 A 20120125; CN 201210022436 A 20120201; ES 11152827 T 20110201; US 201213352595 A 20120118