

Title (en)

A COMBINATION OF CASTING PROCESS AND ALLOY COMPOSITIONS RESULTING IN CAST PARTS WITH SUPERIOR COMBINATION OF ELEVATED TEMPERATURE CREEP PROPERTIES, DUCTILITY AND CORROSION PERFORMANCE

Title (de)

KOMBINATION AUS GIESSVERFAHREN UND LEGIERUNGSZUSAMMENSETZUNGEN, DIE ZU GUSSTEILEN MIT ÜBERLEGENER KOMBINATION VON KRIECHFESTIGKEIT BEI ERHÖHTER TEMPERATUR, DUKTILITÄT UND KORROSIONSLISTUNG FÜHRT

Title (fr)

COMBINAISON DE PROCESSUS DE COULAGE ET COMPOSITIONS ALLIÉES PRODUISANT DES PIÈCES COULÉES DE COMBINAISON SUPÉRIEURE DE PROPRIÉTÉS DE FLUAGE À TEMPÉRATURE ÉLEVÉE, DE DUCTILITÉ ET DE RÉSISTANCE À LA CORROSION

Publication

EP 1957221 B1 20111228 (EN)

Application

EP 06805766 A 20060919

Priority

- EP 2006009082 W 20060919
- EP 05077583 A 20051110
- EP 06805766 A 20060919

Abstract (en)

[origin: WO2007054152A1] A process for casting a magnesium alloy consisting of 2,0 - 6,00 % by weight of aluminium, 3,00 - 8,00 % by weight of rare earth metals (RE-metals), the ratio of the amount of RE-metals to the amount of aluminium expressed as % by weight being larger than 0,8, at least 40 % by weight of the RE-metals being cerium, less than 0,5 % by weight of manganese, less than 1,00 % by weight of zinc, less than 0,01 % by weight of calcium less than 0,01 % by weight of strontium and the balance being magnesium and unavoidable impurities, the total impurity level being below 0,1 % by weight, wherein the alloy is cast in a die the temperature of which is controlled in the range of 180-340°C, the die is filled in a time which expressed in milliseconds is equal to the product of a number between 5 and 500 multiplied by the average part thickness expressed in millimeter, the static metal pressures being maintained during casting between 20-70 MPa and is subsequently intensified up to 180 MPa.

IPC 8 full level

B22D 21/00 (2006.01); **B22D 17/08** (2006.01); **C22C 23/02** (2006.01); **C22C 23/06** (2006.01)

CPC (source: EP KR US)

B22D 17/00 (2013.01 - EP US); **B22D 17/08** (2013.01 - KR); **B22D 21/007** (2013.01 - EP US); **B22D 21/04** (2013.01 - KR); **C22C 23/02** (2013.01 - EP KR US); **C22C 23/06** (2013.01 - EP KR US)

Cited by

US10751793B2; DE202016105961U1

Designated contracting state (EPC)

AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HU IE IS IT LI LT LU LV MC NL PL PT RO SE SI SK TR

Designated extension state (EPC)

BA HR MK RS

DOCDB simple family (publication)

WO 2007054152 A1 20070518; AT E538887 T1 20120115; AU 2006312743 A1 20070518; AU 2006312743 B2 20101021; BR PI0618517 A2 20110906; BR PI0618517 B1 20180109; CA 2627491 A1 20070518; CA 2627491 C 20111122; CN 101528390 A 20090909; CN 101528390 B 20110622; EA 013656 B1 20100630; EA 200801268 A1 20081030; EP 1957221 A1 20080820; EP 1957221 B1 20111228; ES 2379806 T3 20120503; HR P20120244 T1 20120430; JP 2009527637 A 20090730; JP 5290764 B2 20130918; KR 101191105 B1 20121016; KR 20080066805 A 20080716; PL 1957221 T3 20120731; PT 1957221 E 20120403; RS 52267 B 20121031; SI 1957221 T1 20120330; US 2009133849 A1 20090528

DOCDB simple family (application)

EP 2006009082 W 20060919; AT 06805766 T 20060919; AU 2006312743 A 20060919; BR PI0618517 A 20060919; CA 2627491 A 20060919; CN 200680041468 A 20060919; EA 200801268 A 20060919; EP 06805766 A 20060919; ES 06805766 T 20060919; HR P20120244 T 20120316; JP 2008539269 A 20060919; KR 20087011832 A 20060919; PL 06805766 T 20060919; PT 06805766 T 20060919; RS P20120132 A 20060919; SI 200631272 T 20060919; US 9307006 A 20060919