

Title (en)  
ALLOY FOR PRESSURE DIE CASTING

Title (de)  
DRUCKGUSSLEGIERUNG

Title (fr)  
ALLIAGE D'ALUMINIUM POUR MOULAGE SOUS PRESSION

Publication  
**EP 3235917 B1 20180815 (DE)**

Application  
**EP 16165969 A 20160419**

Priority  
EP 16165969 A 20160419

Abstract (en)  
[origin: CA3021397A1] The invention relates to a die casting alloy on an aluminum-silicon base with a composition consisting of: 8.5 to 11.5 wt. % of silicon; 0.1 to 0.5 wt.% of magnesium; 0.3 to 0.8 wt.% of manganese; 0.02 to 0.5 wt.% of iron; 0.005 to 0.5 wt.% of zinc; 0.02 to 0.3 wt.% of molybdenum; 0.1 to 0.5 wt.% of copper; 0.02 to 0.15 wt.% of titanium; 0.02 to 0.3 wt.% of zirconium, 5 to 250 ppm of phosphorus, 10 to 200 ppm of gallium and the remainder of aluminum and unavoidable impurities. The alloy can be produced with a recycling rate of 50 %.

IPC 8 full level  
**C22C 21/02** (2006.01); **C22C 21/04** (2006.01); **C22F 1/043** (2006.01)

CPC (source: EP KR US)  
**C22C 21/02** (2013.01 - EP US); **C22C 21/04** (2013.01 - EP KR US); **C22F 1/043** (2013.01 - EP KR US); **B22D 21/007** (2013.01 - EP US)

Citation (opposition)  
Opponent : TRIMET Aluminium SE,  
• EP 2735621 A1 20140528 - GEORG FISCHER DRUCKGUSS GMBH & CO KG [AT], et al  
• DE 1211800 B 19660303 - ALUMINUM CO OF AMERICA  
• DE 10351666 B3 20050127 - ERBSLOEH ALUMINIUM GMBH [DE]  
• EP 2738273 A1 20140604 - NIPPON LIGHT METAL CO [JP], et al  
• US 3211547 A 19651012 - NOEL JARRETT, et al  
• US 4222830 A 19800916 - DAWLESS ROBERT K, et al  
• EP 1612286 A2 20060104 - RHEINFELDEN ALUMINIUM GMBH [DE]  
• DE 102010055011 A1 20120621 - TRIMET ALUMINIUM AG [DE]  
• DE 102008055928 A1 20090827 - KSM CASTINGS GMBH [DE]  
• DE 102009012073 A1 20100909 - DAIMLER AG [DE]  
• EP 2657360 A1 20131030 - AUDI AG [DE], et al  
• US 2005224145 A1 20051013 - LASLAZ GERARD [FR], et al  
• DE 102011112005 A1 20130228 - AUDI AG [DE]  
• WO 2005071127 A1 20050804 - ALCOA INC [US]  
• DE 102008046803 A1 20100325 - AUDI AG [DE]  
• DE 102008055929 A1 20090827 - KSM CASTINGS GMBH [DE]  
• GB 605282 A 19480720 - NAT SMELTING CO  
• DAVIS JR: "Alloying: Understanding the Basics.", 2001, article "Aluminum and Aluminum Alloys", pages: 372, 377, 382, 387, XP055549194  
• KEARNEY A ET AL.: "ASM Handbook", vol. 2, 1990, article "Aluminum Foundry Products", pages: 123 - 151, XP055582002  
• LOPER CR ET AL.: "AFS Transactions", 2000, article "Influence of Trace Amounts of Phosphorus in Al Casting Alloys", pages: 667-672,383  
• "table d13, d14", article W. HUFNAGEL: "4 key to aluminum alloys", pages: 111,119, XP055582009  
• "Europäische Norm EN 1706", EUROPÄISCHE NORM EN 1706, March 2010 (2010-03-01), pages 2, 10, 11, 13, XP055582012  
• "Neue Anwendungsbereiche für Strukturbauteile", VDI-FACHMEDIEN, KONSTRUKTION - ONLINE, September 2017 (2017-09-01)  
• 15 February 2019 (2019-02-15), Retrieved from the Internet <URL:http://rheinfelden-alloys.eu/euroguss>  
• "quickfinder für passgenaue legierungsauswahl", HÜTTENALUMINIUM-GUSSLEGIERUNGEN, pages 1 - 10  
• "Recycling-Gusslegierungen für Automobil-Strukturbauteile", ALUREPORT, March 2012 (2012-03-01), pages 14 - 15, XP055582017

Cited by  
EP4067521A4

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

DOCDB simple family (publication)  
**EP 3235917 A1 20171025; EP 3235917 B1 20180815**; CA 3021397 A1 20171026; CA 3021397 C 20230523; CN 109072353 A 20181221; KR 102609410 B1 20231201; KR 20180132140 A 20181211; MX 2018012786 A 20190617; US 2019119791 A1 20190425; WO 2017182102 A1 20171026

DOCDB simple family (application)  
**EP 16165969 A 20160419; EP 3235917 B1 20180815**; CA 3021397 A 20160502; CN 201680084625 A 20160502; EP 2016059723 W 20160502; KR 20187032871 A 20160502; MX 2018012786 A 20160502; US 201616094324 A 20160502