

Title (en)  
HIGH STRENGTH ALUMINUM ALLOYS

Title (de)  
HOCHFESTE ALUMINIUMLEGIERUNGEN

Title (fr)  
ALLIAGES D'ALUMINIUM À HAUTE RÉSISTANCE

Publication  
**EP 3117018 A4 20171213 (EN)**

Application  
**EP 15760680 A 20150311**

Priority

- US 201461951309 P 20140311
- US 201461954358 P 20140317
- US 2015019867 W 20150311

Abstract (en)

[origin: WO2015138551A1] The invention is a class of new 6XXX series high strength aluminum alloys with a fine grain structure and methods of manufacture and extrusion. Aluminum alloys of the invention comprise from about 0.90 percent to about 1.2 percent by weight silicon, up to about 0.5 percent by weight iron, from about 0.05 percent to about 0.3 percent by weight copper, up to about 0.75 percent by weight manganese, from about 0.70 percent to about 1.0 percent by weight magnesium, up to about 0.25 percent by weight chromium, up to about 0.05 percent by weight zinc, up to about 0.1 percent by weight titanium, with the balance consisting essentially of aluminum. The alloys are cast and homogenized, then extruded, quenched and artificially aged to produce a fine grain crystallization in the final aluminum product exhibiting superior yield strength and elongation properties.

IPC 8 full level  
**C22C 21/08** (2006.01); **C22C 21/02** (2006.01); **C22F 1/043** (2006.01)

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**C22C 21/00** (2013.01 - US); **C22C 21/02** (2013.01 - EP KR US); **C22C 21/08** (2013.01 - EP KR US); **C22F 1/043** (2013.01 - EP US); **C22F 1/05** (2013.01 - EP KR US)

Citation (search report)

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- [X] FR 2360684 A1 19780303 - ALUMINUM CO OF AMERICA [US]
- [X] EP 0104139 A1 19840328 - ALUSUISSE [CH]
- [X] MROWKA-NOWOTNIK G ET AL: "Influence of heat treatment on the microstructure and mechanical properties of 6005 and 6082 aluminium alloys", JOURNAL OF MATERIALS PROCESSING TECHNOLOGY, ELSEVIER, NL, vol. 162-163, 15 May 2005 (2005-05-15), pages 367 - 372, XP027805870, ISSN: 0924-0136, [retrieved on 20050515]
- [A] GRYDIN O ET AL: "Influence of Hot Deformation on Mechanical Properties and Microstructure of a Twin-Roll Cast Aluminium Alloy EN AW-6082", JOURNAL OF MATERIALS ENGINEERING AND PERFORMANCE, ASM INTERNATIONAL, MATERIALS PARK, OH, US, vol. 23, no. 3, 7 December 2013 (2013-12-07), pages 937 - 943, XP035372458, ISSN: 1059-9495, [retrieved on 20131207], DOI: 10.1007/S11665-013-0816-4
- See references of WO 2015138551A1

Designated contracting state (EPC)  
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**WO 2015138551 A1 20150917**; CA 2942338 A1 20150917; CN 106488991 A 20170308; EP 3117018 A1 20170118; EP 3117018 A4 20171213; JP 2017512260 A 20170518; KR 20170002382 A 20170106; US 2017022593 A1 20170126

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**US 2015019867 W 20150311**; CA 2942338 A 20150311; CN 201580021121 A 20150311; EP 15760680 A 20150311; JP 2016575608 A 20150311; KR 20167028223 A 20150311; US 201515125086 A 20150311