

Title (en)

Rapidly solidified aluminum based, silicon containing, alloys for elevated temperature applications.

Title (de)

Rasch erstarrte Silizium enthaltende legierungen auf Aluminiumbasis für Hochtemperaturanwendungen.

Title (fr)

Alliages pour application à des températures élevées, à base d'aluminium contenant du silicium et obtenus par solidification rapide.

Publication

EP 0218035 A1 19870415 (EN)

Application

EP 86110835 A 19860805

Priority

US 78277485 A 19851002

Abstract (en)

A rapidly solidified aluminum-base alloy consists essentially of the formula $Al_{1-a-b-c}Fe_aSi_bX_c$, wherein X is at least one element selected from the group consisting of Mn, V, Cr, Mo, W, Nb, Ta, "a" ranges from 2.0 to 7.5 atom percent, "b" ranges from 0.5 to 3.0 atom percent, "c" ranges from 0.05 to 3.5 atom percent and the balance is aluminum plus incidental impurities, with the proviso that the ratio $\{Fe+X\}:Si$ ranges from about 2.0:1 to 5.0:1. The alloy exhibits high strength, ductility and fracture toughness and is especially suited for use in high temperature structural applications such as gas turbine engines, missiles, airframes and landing wheels.

IPC 1-7

C22C 21/00

IPC 8 full level

C22C 1/02 (2006.01); **B22F 9/00** (2006.01); **C22C 1/04** (2006.01); **C22C 21/00** (2006.01); **C22C 45/08** (2006.01)

CPC (source: EP)

B22F 9/008 (2013.01); **C22C 1/0416** (2013.01); **C22C 45/08** (2013.01)

Citation (search report)

- [A] EP 0136508 A2 19850410 - ALLIED CORP [US]
- [A] EP 0100287 A1 19840208 - CENTRE NAT RECH SCIENT [FR]
- [AD] US 4347076 A 19820831 - RAY RANJAN, et al
- [A] EP 0143727 A2 19850605 - CEGEDUR [FR]

Cited by

US5332455A; US5286314A; EP0638657A1; US5498393A; EP0303100A1; WO9002210A1; WO9222398A1; WO8807592A1; WO9219780A3; WO8906287A3; WO9201078A1; WO8809825A1; EP0445114B1

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