

Title (en)

High strength and high rigidity aluminium based alloy and production method therefor

Title (de)

Hochfeste und hochsteife Aluminiumbasislegierung und deren Herstellungsverfahren

Title (fr)

Alliage à base d'aluminium à haute résistance mécanique et à haute rigidité et sa méthode de fabrication

Publication

EP 0710730 A3 19961127 (EN)

Application

EP 95117263 A 19951102

Priority

JP 27006294 A 19941102

Abstract (en)

[origin: EP0710730A2] An aluminum-based alloy having the general formula $Al_{100-(a+b)}Q_aM_b$ (wherein Q is V, Mo, Fe, W, Nb, and/or Pd; M is Mn, Fe, Co, Ni, and/or Cu; and a and b, representing a composition ratio in atomic percentages, satisfy the relationships $1 \leq a \leq 10$, $0 < b < 5$, and $3 \leq a+b \leq 12$) having a metallographic structure comprising a quasi-crystalline phase possesses high strength and high rigidity. The aluminum-based alloy is useful as a structural material for aircraft, vehicles and ships, and for engine parts; as material for sashes, roofing materials, and exterior materials for use in construction; or as materials for use in marine equipment, nuclear reactors, and the like.

IPC 1-7

C22C 21/00; B22F 9/06; C23C 26/00

IPC 8 full level

B22F 9/00 (2006.01); **C22C 1/04** (2006.01); **C22C 21/00** (2006.01); **C23C 6/00** (2006.01); **C23C 26/02** (2006.01)

CPC (source: EP)

B22F 9/008 (2013.01); **C22C 1/0416** (2013.01); **C22C 21/00** (2013.01); **C23C 6/00** (2013.01); **C23C 26/02** (2013.01)

Citation (search report)

- [XY] EP 0587186 A1 19940316 - YOSHIDA KOGYO KK [JP]
- [Y] EP 0584596 A2 19940302 - YAMAHA CORP [JP], et al
- [X] SKINNER D J ET AL: "Stability of quasicrystalline phases in Al-Fe-V", SIXTH INTERNATIONAL CONFERENCE ON RAPIDLY QUENCHED METALS, MONTREAL, QUE., CANADA, 3-7 AUG. 1987, vol. 99, ISSN 0025-5416, MATERIAL SCIENCE AND ENGINEERING, MARCH 1988, SWITZERLAND, pages 407 - 411, XP000600857
- [X] ANDERSEN S J ET AL: "Microstructure of rapidly solidified Al-7.5Cu-2.5Fe", EIGHTH INTERNATIONAL CONFERENCE ON RAPIDLY QUENCHED AND METASTABLE MATERIALS, SENDAI, JAPAN, 22-27 AUG. 1993, vol. A179-A180, ISSN 0921-5093, MATERIALS SCIENCE & ENGINEERING A (STRUCTURAL MATERIALS: PROPERTIES, MICROSTRUCTURE AND PROCESSING), 1 MAY 1994, SWITZERLAND, pages 665 - 668, XP000600949

Cited by

EP0860509A3; US5858131A; US6331218B1; GB2358406A; GB2358406B; RU2611253C1; US6506503B1; US6334911B2; WO0006788A1

Designated contracting state (EPC)

DE FR

DOCDB simple family (publication)

EP 0710730 A2 19960508; **EP 0710730 A3 19961127**; **EP 0710730 B1 20021002**; DE 69528432 D1 20021107; DE 69528432 T2 20030612

DOCDB simple family (application)

EP 95117263 A 19951102; DE 69528432 T 19951102