Title (en)

Aluminium-based alloy with a high modulus and an increased mechanical strenght and process for production.

Title (de)

Legierung auf Aluminiumbasis mit einem hohen Modul und mit einer erhöhten mechanischen Festigkeit und Verfahren zur Herstellung.

Title (fr)

Alliage à base d'A1 à haut module et à resistance mécanique élevée et procédé d'obtention.

Publication

EP 0391815 A1 19901010 (FR)

Application

EP 90420166 A 19900403

Priority

FR 8904700 A 19890405

Abstract (en)

Al-based alloys of the 7000 series which have a high modulus (E >/= 74 GPa), a high mechanical strength (R0.2 >/= 530 MPa in the lengthwise direction), a good tenacity (KIC, lengthwise direction > 20 MPa 2ROOT m) and a good corrosion resistance under (O pressure >/= 250 MPa in the short transverse direction, lifetime >/= 30 days - ASTM Standard G 38-73). <??>The alloy according to the invention corresponds to the following weight composition: from 5.5 to 8.45% of Zr from 2 to 3.5% Mg from 0.5 to 2.5% Cu up to 0.5% Fe up to 0.5% Si other elements </= 0.05% each and up to 0.15% in all with 0.1 </= Zr </= 0.5% 0.3 </= Cr </= 0.6% 0.3 </= Mn </= 1.1% <??>It is preferably produced by the following process: a) a massive body which has the composition claimed above is formed by spray-deposition, b) this body is converted into a wrought product between 300 and 450 DEG C and then optionally when cold c) the wrought product is heat-treated by dissolving, quenching and annealing to a T6 or T7 state. <IMAGE>

IPC 1-7

C22C 1/04; C22C 21/10; C22C 32/00; C22F 1/053

IPC 8 full level

C22C 1/04 (2006.01); **C22C 21/10** (2006.01); **C22F 1/00** (2006.01); **C22F 1/053** (2006.01)

CPC (source: EP US)

C22C 1/0416 (2013.01 - EP US); **C22C 21/10** (2013.01 - EP US); **C22F 1/053** (2013.01 - EP US); Y10S 428/937 (2013.01 - EP US); Y10T 428/12486 (2015.01 - EP US); Y10T 428/12799 (2015.01 - EP US)

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