Title (en)

AGE-HARDENABLE ALUMINIUM ALLOYS

Title (de)

AUSHÄRTBARE ALUMINIUM-LEGIERUNGEN

Title (fr)

ALLIAGES A L'ALUMINIUM A DURCISSEMENT PAR VIEILLISSEMENT

Publication

EP 1346075 B1 20041013 (EN)

Application

EP 01271462 A 20011220

Priority

- GB 0105686 W 20011220
- GB 0031104 A 20001220

Abstract (en)

[origin: WO0250329A1] This invention concerns AA5000 series alloys with the addition of Cu that can be retained in a solution treated condition after hot working, for example by hot rolling on a hot mill or by hot extruding. There is described a method of producing an age-hardenable aluminium alloy comprising the steps of: a) casting an alloy of a composition comprising the following expressed in weight percent: Magnesium : 1.0 to 4.0, Cooper : 0.1 to 0.6, Manganese : up to 0.8, Iron : up to 0.5, Silicon : up to 0.3, Chromium : up to 0.15, Titanium : up to 0.15, Balance : Aluminium with incidental impurities b) optionally homogenising the cast alloy, c) hot working the casting at an initial temperature of at least 400 DEG C to form an intermediate product, wherein at least part of the hot working is carried out whilst the casting is at a temperature above the solvus temperature of the alloy, d) cooling the intermediate product either during hot working or in a subsequent step at a rate such that at least a partially recovered or recrystallised structure is formed ant that sufficient copper is retained in solid solution in the alloy to cause an age hardening effect on the alloy if phase precipitation takes place during the alloy's subsequent thermal history, and e) optionally allowing or arranging for phase precipitation to occur in the alloy. The described method is particularly suited to the production of can end stock and sheet for automotive applications.

IPC 1-7

C22F 1/047; C22C 21/06

IPC 8 full level

B21B 3/00 (2006.01); **B21C 23/00** (2006.01); **B22D 11/00** (2006.01); **C22C 21/00** (2006.01); **C22C 21/06** (2006.01); **C22F 1/00** (2006.01); **C22F 1/04** (2006.01); **C22F 1/047** (2006.01)

CPC (source: EP US)

C22C 21/06 (2013.01 - EP US); **C22F 1/047** (2013.01 - EP US)

Cited by

CN105896119A; CN105896118A; RU2468113C1

Designated contracting state (EPC)

AT BE CH CY DE DK ES FI FR GB GR IE IT LI LU MC NL PT SE TR

DOCDB simple family (publication)

WO 0250329 A1 20020627; AT E279546 T1 20041015; AU 1622102 A 20020701; CA 2431029 A1 20020627; DE 60106488 D1 20041118; DE 60106488 T2 20051201; EP 1346075 A1 20030924; EP 1346075 B1 20041013; GB 0031104 D0 20010131; JP 2004522854 A 20040729; US 2004089379 A1 20040513

DOCDB simple family (application)

GB 0105686 W 20011220; AT 01271462 T 20011220; AU 1622102 A 20011220; CA 2431029 A 20011220; DE 60106488 T 20011220; EP 01271462 A 20011220; GB 0031104 A 20001220; JP 2002551203 A 20011220; US 45121703 A 20031210