

Title (en)
AGE-HARDENABLE ALUMINIUM ALLOYS

Title (de)
AUSHÄRTBARE ALUMINIUM-LEGIERUNGEN

Title (fr)
ALLIAGES A L'ALUMINIUM A DURCISSEMENT PAR VIEILLISSEMENT

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Application
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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, Copper : 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 and 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.

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Cited by
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