

Title (en)

ALUMINIUM BASED ALLOY AND METHOD FOR SUBJECTING IT TO HEAT TREATMENT

Title (de)

LEGIERUNG AUF ALUMINIUMBASIS UND VERFAHREN ZU IHRER WÄRMEBEHANDLUNG

Title (fr)

ALLIAGE A BASE D'ALUMINIUM ET PROCEDE PERMETTANT DE LE SOUMETTRE A UN TRAITEMENT THERMIQUE

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Application

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Abstract (en)

[origin: WO9915708A1] The invention concerns an aluminium based alloy, in particular an Al-Li-Mg system alloy whereof the chemical composition expressed in percentage by mass is as follows: lithium, between 1.5 and 1.9; magnesium, between 4.1 and 6.0; zinc, between 0.1 and 1.5; zirconium, between 0.05 and 0.3; manganese, between 0.01 and 0.8; hydrogen between 0.9×10^{-5} and 4.5×10^{-5} . Said alloy contains at least an element selected in the following group: beryllium, between 0.001 and 0.2; yttrium, between 0.01 and 0.5; scandium, between 0.01 and 0.3; the rest being constituted by aluminium. The invention further concerns a method for treating said alloy, comprising the following steps: hardening at a temperature from 400 to 500 DEG C in cold water or in open air; straightening with a constant degree of deformation of 0 to 2 %; gradual heat treatment, the first step being carried out at a temperature ranging between 80 and 90 DEG C, for 3 to 12 hours, the second step being carried out at a temperature ranging between 110 and 185 DEG C, for 10 to 48 hours. Once the second step retention time is completed, the third step, called age-hardening, is carried out. It consists in heating at a temperature ranging between 90 and 110 DEG C for 14 hours or slow cooling with a cooling speed of the order of 2 to 8 DEG C/h.

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