

Title (en)

LOW COST, SUBSTANTIALLY ZR-FREE ALUMINUM-LITHIUM ALLOY FOR THIN SHEET PRODUCT WITH HIGH FORMABILITY

Title (de)

KOSTENGÜNSTIGE, IM WESENTLICHEN ZR-FREIE ALUMINIUM-LITHIUM-LEGIERUNG FÜR DÜNNBLECH MIT HOHER FORMBARKEIT

Title (fr)

ALLIAGE ALUMINIUM-LITHIUM À FAIBLE COÛT ET SENSIBLEMENT SANS ZR POUR UN PRODUIT EN FEUILLE MINCE À HAUTE FORMABILITÉ

Publication

**EP 3495520 A1 20190612 (EN)**

Application

**EP 18210045 A 20181204**

Priority

US 201715830569 A 20171204

Abstract (en)

A low cost, substantially Zr-free, low density 2xxx aluminum-lithium alloy is disclosed. The aluminum-lithium alloy can be produced to high formability sheet products capable of being formed into wrought products with a thickness of 0.01" to 0.249". Aluminum-lithium alloys of the invention comprise from 3.2 to 4.1 wt. % Cu, 1.0 to 1.8 wt. % Li, 0.8 to 1.2 wt. % Mg, 0.10 to 0.50 wt. % Zn, 0.10 to 1.0 wt. % Mn, up to 0.12 wt. % Si, up to 0.15 wt. % Fe, up to 0.15 wt. % Ti, up to 0.15 wt. % incidental elements, with the total of these incidental elements not exceeding 0.35 wt. %, and the balance being aluminum. Ag should not be intentionally added and should not be more than 0.1 wt. % as a non-intentionally added element. Zr should not be intentionally added and should not be more than 0.05 wt. % as a non-intentionally added element. Mg is at least equal to or higher than 2 \* Zn in weight percent in the invented alloy. Methods for manufacturing wrought products including aluminum-lithium alloys of the present invention are also provided.

IPC 8 full level

**C22C 21/16** (2006.01); **C22C 21/14** (2006.01); **C22C 21/18** (2006.01); **C22F 1/057** (2006.01)

CPC (source: EP US)

**B21B 3/00** (2013.01 - US); **B21D 25/00** (2013.01 - US); **B22D 7/005** (2013.01 - EP US); **C22C 21/14** (2013.01 - EP US); **C22C 21/16** (2013.01 - EP US); **C22C 21/18** (2013.01 - EP US); **C22F 1/002** (2013.01 - EP US); **C22F 1/057** (2013.01 - EP US); **B21B 2003/001** (2013.01 - US)

Citation (applicant)

INTERNATIONAL ALLOY DESIGNATION AND CHEMICAL COMPOSITION LIMITS FOR WROUGHT ALUMINUM AND WROUGHT ALUMINUM ALLOYS, January 2017 (2017-01-01)

Citation (search report)

- [A] US 2016115576 A1 20160428 - LONG ZHENG DONG [US], et al
- [A] GB 2257435 A 19930113 - ALUMINUM CO OF AMERICA [US]
- [A] DESCHAMPS A ET AL: "Influence of Mg and Li content on the microstructure evolution of AlCuLi alloys during long-term ageing", ACTA MATERIALIA, ELSEVIER, OXFORD, GB, vol. 122, 29 September 2016 (2016-09-29), pages 32 - 46, XP029808794, ISSN: 1359-6454, DOI: 10.1016/J.ACTAMAT.2016.09.036

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DOCDB simple family (application)

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