

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

Designated contracting state (EPC)
AL AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LI LT LU LV MC MK MT NL NO PL PT RO RS SE SI SK SM TR

Designated extension state (EPC)
BA ME

DOCDB simple family (publication)
EP 3495520 A1 20190612; EP 3495520 B1 20230607; EP 3495520 C0 20230607; CN 109868400 A 20190611; US 2019169727 A1 20190606

DOCDB simple family (application)
EP 18210045 A 20181204; CN 201811464125 A 20181203; US 201715830569 A 20171204