

Title (en)

FORGED AEROSPACE PRODUCTS FROM LITHIUM-FREE ALUMINIUM ALLOY CONTAINING COPPER MAGNESIUM AND SILVER

Title (de)

GESCHMIEDETE PRODUKTE FÜR DIE RAUMFAHRTINDUSTRIE AUS EINER LITHIUMFREIEN MAGNESIUM-KUPFER-SILBER ENTHALTENDEN ALUMINIUMLEGIERUNG

Title (fr)

PRODUITS AÉROSPATIAUX FORGÉS EN ALLIAGE D'ALUMINIUM AVEC ARGENT, MAGNÉSIUM ET CUIVRE MAIS SANS LITHIUM

Publication

EP 2942412 B1 20161116 (EN)

Application

EP 15166597 A 20150506

Priority

- US 201461989326 P 20140506
- US 201414461102 A 20140815

Abstract (en)

[origin: EP2942412A1] A substantially lithium-free alloy may comprise copper from 4.8 wt.% to 5.4 wt.%, magnesium from 0.7 wt.% to 1.1 wt.%, silver from 0.55 wt.% to 0.7 wt.%, and lithium at or below 0.005 wt.%. The substantially lithium-free alloy may further comprise silver from 0.56 wt.% to 0.7 wt.%. The substantially lithium-free alloy may also comprise zirconium from 0.08 wt.% to 0.15 wt.%. The substantially lithium-free alloy may include titanium at or below 0.06 wt.%, iron at or below 0.1 wt.%, silicon at or below 0.08 wt.%, beryllium at or below 0.0001 wt.%, chromium at or below 0.05 wt.%, and zinc at or below 0.25 wt.%.

IPC 8 full level

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

CPC (source: EP US)

C22C 21/14 (2013.01 - US); **C22C 21/16** (2013.01 - EP US); **C22C 21/18** (2013.01 - US); **C22F 1/04** (2013.01 - US); **C22F 1/057** (2013.01 - EP US)

Citation (opposition)

Opponent : Aleris Rolled Products Germany GmbH

- US 5879475 A 19990309 - KARABIN LYNETTE M [US]
- US 2007092739 A1 20070426 - STEELE LESLIE S [US], et al
- EP 1281781 A1 20030205 - ALCOA INC [US]
- "Basic textbook", January 1993, article "Aluminum. Properties and Physical Metallurgy", pages: 136 - 137, 231, XP055405781

Opponent : Arconic Inc.

- US 5879475 A 19990309 - KARABIN LYNETTE M [US]
- US 5652063 A 19970729 - KARABIN LYNETTE M [US]
- STEELE ET AL.: "Aluminum Alloy 2040 for Demanding Aircraft Wheel Applications", AEROMAT 2006 CONFERENCE & EXPOSITION LIGHT ALLOY TECHNOLOGY SESSION 4, DAMAGE TOLERANT ALUMINUM ALLOY AIRFRAME APPLICATIONS, 18 May 2006 (2006-05-18), XP055411345
- "Aluminum and Aluminum Alloys", ASM SPECIALTY HANDBOOK,, 1993, XP055411353
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Opponent : SAFRAN LANDING SYSTEMS

- US 5879475 A 19990309 - KARABIN LYNETTE M [US]
- US 5800927 A 19980901 - KARABIN LYNETTE M [US]
- WO 2011133248 A2 20111027 - ALCOA INC [US], et al
- EP 1780313 A2 20070502 - GOODRICH CORP [US]
- EP 1281781 A1 20030205 - ALCOA INC [US]
- US 2003026725 A1 20030206 - SAWTELL RALPH R [US], et al
- US 7527872 B2 20090505 - STEELE LESLIE SCOTTE [US], et al
- US 5652063 A 19970729 - KARABIN LYNETTE M [US]
- WO 2013186635 A2 20131219 - BOREALIS TECH LTD [GB]
- US 4474060 A 19841002 - CROSSMAN RICHARD L [US]
- CA 2843325 A1 20130221 - FUCHS KG OTTO [DE]
- US 3794531 A 19740226 - MARKWORTH M, et al
- US 2006157172 A1 20060720 - FISCHER GERNOT [DE], et al
- US 2005115645 A1 20050602 - FISCHER GERNOT [DE], et al
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- EP 1522600 A1 20050413 - KOBE STEEL LTD [JP]
- WO 2007111634 A2 20071004 - ALCOA INC [US], et al
- JP 2013142168 A 20130722 - FURUKAWA SKY ALUMINUM CORP
- JP 2001181771 A 20010703 - KOBE STEEL LTD
- GB 1320271 A 19730613 - ATOMIC ENERGY AUTHORITY UK
- JP H03107440 A 19910507 - SHOWA ALUMINUM CORP
- WO 2004111282 A1 20041223 - CORUS ALUMINIUM WALZPROD GMBH [DE], et al
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Opponent : Safran Landing Systems

- US 5879475 A 19990309 - KARABIN LYNETTE M [US]
- US 5800927 A 19980901 - KARABIN LYNETTE M [US]
- WO 2011133248 A2 20111027 - ALCOA INC [US], et al
- EP 1780313 A2 20070502 - GOODRICH CORP [US]
- EP 1281781 A1 20030205 - ALCOA INC [US]
- US 2003026725 A1 20030206 - SAWTELL RALPH R [US], et al
- US 7527872 B2 20090505 - STEELE LESLIE SCOTTE [US], et al
- US 5652063 A 19970729 - KARABIN LYNETTE M [US]
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CN106282702A; EP3825431A1; CN111020321A; CN112041473A; US11873549B2

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