

Title (en)

7XXX WROUGHT PRODUCTS WITH IMPROVED COMPROMISE OF TENSILE AND TOUGHNESS PROPERTIES AND METHOD FOR PRODUCING

Title (de)

7XXX-LEGIERUNG MIT VERBESSERTEN ZUG- UND ZÄHIGKEITSEIGENSCHAFTEN UND VERFAHREN ZU IHRER HERSTELLUNG

Title (fr)

PRODUITS ECROUIS EN ALLIAGE 7XXX AVEC UN COMPROMIS AMÉLIORÉ DE PROPRIÉTÉS DE TRACTION ET DE TÉNACITÉ ET PROCÉDÉ DE PRODUCTION

Publication

EP 4386097 A1 20240619 (EN)

Application

EP 22213912 A 20221215

Priority

US 202263387018 P 20221212

Abstract (en)

The present invention relates to wrought 7xxx aluminum alloy product comprising in weight % Zn 6.7 - 7.4, Mg 1.35 - 1.75, Cu 1.85 - 2.35, Zr 0.04 - 0.14, Mn 0 - 0.5, Ti 0 - 0.15, V 0 - 0.15, Cr 0 - 0.25, Fe \leq 0.05, Si \leq 0.05 with a Fe+Si \leq 0.08 % and artificially aged wherein the total equivalent aging time t(eq) at 155°C is comprised from 24 hours to 45 hours which permits to optimize the compromise between tensile yield strength and toughness with improved cryogenic fracture toughness and fatigue resistance in corrosive environment.

IPC 8 full level

C22C 21/18 (2006.01); **C22F 1/053** (2006.01)

CPC (source: EP)

C22C 21/18 (2013.01); **C22F 1/053** (2013.01)

Citation (applicant)

- US 5312498 A 19940517 - ANDERSON KEVIN R [US]
- US 5560789 A 19961001 - SAINFORT PIERRE [FR], et al
- US 5865911 A 19990202 - MIYASATO SHELLY M [US], et al
- US 6027582 A 20000222 - SHAHANI RAVI [FR], et al
- US 6972110 B2 20051206 - CHAKRABARTI DHRUBA J [US], et al
- WO 2004090183 A1 20041021 - CORUS ALUMINIUM WALZPROD GMBH [DE], et al
- US 2005006010 A1 20050113 - BENEDICTUS RINZE [NL], et al
- EP 1544315 A1 20050622 - PECHINEY RHENALU [FR], et al
- US 8277580 B2 20121002 - DANGERFIELD VIC [US], et al
- US 8673209 B2 20140318 - BRAY GARY H [US], et al
- WO 2019007817 A1 20190110 - CONSTELLUM ISSOIRE [FR]

Citation (search report)

- [X1] EP 2322677 A1 20110518 - ALCOA INC [US]
- [A] CN 102796973 A 20121128 - BEIJING NONFERROUS METAL
- [A] CN 107236883 A 20171010 - ALNAN ALUMINIUM INC
- [A] WO 2005047557 A1 20050526 - ALCOA INC [US]

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 ME MK MT NL NO PL PT RO RS SE SI SK SM TR

Designated extension state (EPC)

BA

Designated validation state (EPC)

KH MA MD TN

DOCDB simple family (publication)

EP 4386097 A1 20240619

DOCDB simple family (application)

EP 22213912 A 20221215