

Title (en)

FUNCTIONALLY GRADIENT ALUMINUM ALLOY PRODUCTS AND METHODS OF MAKING

Title (de)

PRODUKTE AUS ALUMINIUMLEGIERUNG MIT FUNKTIONELLEM GRADIENTEN UND VERFAHREN ZUR HERSTELLUNG

Title (fr)

PRODUITS EN ALLIAGE D'ALUMINIUM À GRADIENT FONCTIONNEL ET LEURS PROCÉDÉS DE FABRICATION

Publication

**EP 4217133 A2 20230802 (EN)**

Application

**EP 21876731 A 20210923**

Priority

- US 202063198018 P 20200924
- US 2021051657 W 20210923

Abstract (en)

[origin: WO2022093447A2] The present disclosure generally provides aluminum alloy products having a functional gradient across at least one dimension of the aluminum alloy product. The disclosure also provides articles of manufacture made from such products, and methods of making such products, such as through casting and rolling. The disclosure also provides various end uses of such products, such as in automotive, aerospace, marine, defense, transportation, electronics, and industrial applications.

IPC 8 full level

**B22D 11/049** (2006.01); **B22D 21/00** (2006.01); **B22D 21/04** (2006.01); **C22C 21/00** (2006.01); **C22F 1/00** (2006.01)

CPC (source: EP KR US)

**B22D 11/003** (2013.01 - US); **B22D 11/049** (2013.01 - EP KR US); **B22D 21/007** (2013.01 - EP KR US); **B22D 21/04** (2013.01 - EP KR); **C22C 21/00** (2013.01 - EP KR US); **C22F 1/00** (2013.01 - EP); **C22F 1/04** (2013.01 - KR 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 MK MT NL NO PL PT RO RS SE SI SK SM TR

Designated extension state (EPC)

BA ME

Designated validation state (EPC)

KH MA MD TN

DOCDB simple family (publication)

**WO 2022093447 A2 20220505**; **WO 2022093447 A3 20220804**; BR 112023002924 A2 20230404; CA 3195217 A1 20220505; CN 116234652 A 20230606; CN 116234652 A8 20230704; EP 4217133 A2 20230802; JP 2023543569 A 20231017; KR 20230049121 A 20230412; MX 2023002860 A 20230323; US 2023323518 A1 20231012

DOCDB simple family (application)

**US 2021051657 W 20210923**; BR 112023002924 A 20210923; CA 3195217 A 20210923; CN 202180064261 A 20210923; EP 21876731 A 20210923; JP 2023518474 A 20210923; KR 20237008298 A 20210923; MX 2023002860 A 20210923; US 202118041297 A 20210923