

Title (en)

SYSTEMS AND METHODS FOR TREATING A SUBSTRATE

Title (de)

SYSTEME UND VERFAHREN ZUR BEHANDLUNG EINES SUBSTRATS

Title (fr)

SYSTÈMES ET PROCÉDÉS DE TRAITEMENT D'UN SUBSTRAT

Publication

**EP 4308748 A1 20240124 (EN)**

Application

**EP 22704052 A 20220119**

Priority

- US 202163163387 P 20210319
- US 2022012889 W 20220119

Abstract (en)

[origin: WO2022197357A1] Disclosed herein is a system for treating a magnesium or a magnesium alloy substrate comprising: a first pretreatment composition comprising a fluorometallic acid and free fluoride in an amount of 10 ppm to 500 ppm based on total weight of the first pretreatment composition and having a pH of 1.0 to 4.0; and a second pretreatment composition comprising a lanthanide series metal, the second pretreatment composition being substantially free of peroxide. Also disclosed are methods of treating a magnesium or magnesium alloy substrate. Treated magnesium and magnesium alloy substrates also are disclosed.

IPC 8 full level

**C23C 22/57** (2006.01); **C23C 22/78** (2006.01); **C23C 22/80** (2006.01); **C25D 13/22** (2006.01)

CPC (source: EP US)

**C23C 22/57** (2013.01 - EP US); **C23C 22/78** (2013.01 - EP); **C23C 22/80** (2013.01 - EP); **C23F 11/04** (2013.01 - US);  
**C25D 9/08** (2013.01 - EP US); **C25D 11/00** (2013.01 - EP US); **C25D 13/20** (2013.01 - EP US); **C25D 13/22** (2013.01 - EP);  
**B33Y 40/20** (2020.01 - US); **B33Y 80/00** (2014.12 - 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 2022197357 A1 20220922**; CN 116997677 A 20231103; EP 4308748 A1 20240124; US 2024158920 A1 20240516

DOCDB simple family (application)

**US 2022012889 W 20220119**; CN 202280020426 A 20220119; EP 22704052 A 20220119; US 202218551112 A 20220119