

Title (en)

SYSTEM FOR NICKEL-FREE ZINC PHOSPHATE PRETREATMENT

Title (de)

SYSTEM ZUR NICKELFREIEN ZINKPHOSPHATVORBEHANDLUNG

Title (fr)

SYSTÈME DE PRÉTRAITEMENT AU PHOSPHATE DE ZINC SANS NICKEL

Publication

EP 3449035 A1 20190306 (EN)

Application

EP 17722292 A 20170425

Priority

- US 201615137014 A 20160425
- US 2017029487 W 20170425

Abstract (en)

[origin: US2017306497A1] Disclosed is a substrate pretreatment system, comprising (a) an activating rinse for treating at least a portion of a substrate comprising a dispersion of metal phosphate particles having a D90 particle size of no greater than 10 µm, wherein the metal phosphate comprises divalent or trivalent metals or combinations thereof; and (b) a pretreatment composition for treating at least a portion of the substrate treated with the activating rinse, comprising zinc ions and phosphate ions, wherein the pretreatment composition is substantially free of nickel. Methods of treating a substrate with the substrate pretreatment system also are disclosed. Substrates treated with the substrate pretreatment system also are disclosed.

IPC 8 full level

C23C 22/12 (2006.01); **C23C 22/78** (2006.01)

CPC (source: EP KR RU US)

C23C 22/12 (2013.01 - EP KR RU US); **C23C 22/60** (2013.01 - KR US); **C23C 22/62** (2013.01 - KR US); **C23C 22/68** (2013.01 - KR US);
C23C 22/73 (2013.01 - KR US); **C23C 22/78** (2013.01 - EP KR RU US); **C25D 5/36** (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

DOCDB simple family (publication)

US 2017306497 A1 20171026; AU 2017257846 A1 20181122; BR 112018071921 A2 20190205; CA 3021999 A1 20171102;
CN 109072443 A 20181221; CN 109072443 B 20201106; EP 3449035 A1 20190306; EP 3449035 B1 20240228; EP 4353867 A2 20240417;
EP 4353867 A3 20240710; ES 2972322 T3 20240612; KR 20190002546 A 20190108; KR 20210114550 A 20210923;
MX 2018012976 A 20190117; RU 2018141232 A 20200526; RU 2018141232 A3 20200526; RU 2728341 C2 20200729;
SG 11201808794Q A 20181129; WO 2017189627 A1 20171102

DOCDB simple family (application)

US 201615137014 A 20160425; AU 2017257846 A 20170425; BR 112018071921 A 20170425; CA 3021999 A 20170425;
CN 201780025671 A 20170425; EP 17722292 A 20170425; EP 24153582 A 20170425; ES 17722292 T 20170425; KR 20187033806 A 20170425;
KR 20217028599 A 20170425; MX 2018012976 A 20170425; RU 2018141232 A 20170425; SG 11201808794Q A 20170425;
US 2017029487 W 20170425