

Title (en)

METHOD FOR COATING METAL SURFACES, SUBSTRATES COATED IN THIS WAY, AND USE THEREOF

Title (de)

VERFAHREN ZUR BESCHICHTUNG VON METALLISCHEN OBERFLÄCHEN, DERART BESCHICHTETE SUBSTRATE UND IHRE VERWENDUNG

Title (fr)

PROCÉDÉ SERVANT À RECOUVRIR DES SURFACES MÉTALLIQUES, SUBSTRATS RECOUVERTS DE CETTE MANIÈRE ET UTILISATION ASSOCIÉE

Publication

**EP 3097221 A1 20161130 (DE)**

Application

**EP 15703001 A 20150122**

Priority

- DE 102014201209 A 20140123
- EP 2015051272 W 20150122

Abstract (en)

[origin: CA2938414A1] The invention relates to a method for coating metal surfaces with an acidic aqueous conversion composition which contains: in total 0.01 to 1 g/l of TiF<sub>6</sub> 2+, ZrF<sub>6</sub> 2+ and/or HfF<sub>6</sub> 2 calculated as ZrF<sub>6</sub> 2+, 0 or 0.01 to 1 g/l in each case of Fe<sup>2+</sup>, Mn and/or Zn ions, of which at least one type of these ions is present in a content range from 0.01 to 1 g/l, 0 or 0.01 to 2 g/l of organic polymer and/or copolymer, 0 or 0.01 to 2 g/l of ultrafine particulate SiO<sub>2</sub>, approximately 0 or 0.01 to 10 g/l of at least one surfactant, approximately 0 or 0.05 to 10 g/l of anions of carbonate, nitrate and/or sulphate, and 0 or 0.001 to 2 g/l of carboxylate and/or sulphonate anions, wherein the content of molybdate and/or of P-containing oxy anions is in each case < 0.1 g/l or is approximately 0 g/l, and wherein the composition has a pH value in the range from 2.5 to 6.5. The invention also relates to a corresponding coating and to the use of the substrates coated in this way.

IPC 8 full level

**C23C 22/36** (2006.01); **C23C 22/34** (2006.01); **C23C 22/44** (2006.01); **C23C 22/83** (2006.01)

CPC (source: EP KR RU US)

**C23C 22/34** (2013.01 - EP KR RU US); **C23C 22/361** (2013.01 - EP KR RU US); **C23C 22/364** (2013.01 - EP KR RU US); **C23C 22/44** (2013.01 - EP KR RU US); **C23C 22/83** (2013.01 - EP KR RU 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)

**DE 102015201090 A1 20150723**; AU 2015208176 A1 20160825; AU 2015208176 B2 20181108; BR 112016017018 A2 20170808; BR 112016017018 B1 20220906; CA 2938414 A1 20150730; CN 106574372 A 20170419; CN 106574372 B 20201124; EP 3097221 A1 20161130; EP 3097221 B1 20220504; ES 2921449 T3 20220825; HU E059458 T2 20221128; JP 2017506291 A 20170302; JP 6622206 B2 20191218; KR 102416141 B1 20220704; KR 20160111989 A 20160927; PL 3097221 T3 20220829; RU 2016134227 A 20180301; RU 2016134227 A3 20181108; RU 2691149 C2 20190611; US 2017009351 A1 20170112; WO 2015110541 A1 20150730; ZA 201605375 B 20171129

DOCDB simple family (application)

**DE 102015201090 A 20150122**; AU 2015208176 A 20150122; BR 112016017018 A 20150122; CA 2938414 A 20150122; CN 201580015618 A 20150122; EP 15703001 A 20150122; EP 2015051272 W 20150122; ES 15703001 T 20150122; HU E15703001 A 20150122; JP 2016548170 A 20150122; KR 20167022936 A 20150122; PL 15703001 T 20150122; RU 2016134227 A 20150122; US 201515113489 A 20150122; ZA 201605375 A 20160804