

Title (en)

RESOURCE-SAVING METHOD FOR ACTIVATING A METAL SURFACE PRIOR TO A PHOSPHATIZATION PROCESS

Title (de)

RESSOURCENSCHONENDES VERFAHREN ZUR AKTIVIERUNG EINER METALLOBERFLÄCHE VOR EINER PHOSPHATIERUNG

Title (fr)

PROCÉDÉ D'ÉCONOMIE DE RESSOURCES POUR ACTIVER UNE SURFACE MÉTALLIQUE AVANT UN PROCESSUS DE PHOSPHATATION

Publication

**EP 4065749 A1 20221005 (DE)**

Application

**EP 20807405 A 20201119**

Priority

- EP 19211407 A 20191126
- EP 2020082618 W 20201119

Abstract (en)

[origin: WO2021104976A1] The invention relates to a method for phosphatizing metal surfaces in a layer-forming manner using a colloidal aqueous solution as an activation stage, containing a dispersed particulate constituent, wherein in addition to dispersed inorganic compounds of phosphates of polyvalent metal cations, the particulate constituent contains polymeric organic compounds as dispersants, which are composed at least partly of styrene and/or an  $\alpha$ -olefin with no more than 5 carbon atoms and at least partly of maleic acid and/or the anhydride and/or the imide thereof, and the polymeric organic compounds additionally comprise polyoxyalkylene units. The cleaning and rinsing stages preceding the activation stage as well as the activation stage itself can be carried out in a resource-saving manner using service water without any loss in activation performance in that the colloidal aqueous solution contains at least 0.5 mmol/L of alkaline earth metal ions dissolved in water.

IPC 8 full level

**C23C 22/78** (2006.01); **C23C 22/36** (2006.01)

CPC (source: EP KR US)

**C23C 22/12** (2013.01 - US); **C23C 22/362** (2013.01 - EP KR); **C23C 22/73** (2013.01 - EP KR); **C23C 22/78** (2013.01 - EP KR)

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)

**EP 3828307 A1 20210602**; CN 114729457 A 20220708; CN 114729457 B 20240430; EP 4065749 A1 20221005; EP 4065749 B1 20240103; ES 2973353 T3 20240619; JP 2023505069 A 20230208; KR 20220106125 A 20220728; MX 2022006302 A 20220609; PL 4065749 T3 20240624; US 2022282381 A1 20220908; WO 2021104976 A1 20210603

DOCDB simple family (application)

**EP 19211407 A 20191126**; CN 202080081532 A 20201119; EP 2020082618 W 20201119; EP 20807405 A 20201119; ES 20807405 T 20201119; JP 2022531060 A 20201119; KR 20227017348 A 20201119; MX 2022006302 A 20201119; PL 20807405 T 20201119; US 202217664665 A 20220524