

Title (en)
METHOD FOR ZERO-DISCHARGE PHOSPHATIZATION AND SAPONIFICATION BASED ON HIGH-PRESSURE CLOSED CIRCULATION SYSTEM

Title (de)
VERFAHREN ZUR ENTLADUNGSFREIEN PHOSPHATIERUNG UND VERSEIFUNG AUF DER BASIS EINES GESCHLOSSENEN HOCHDRUCK-KREISLAUFSYSTEMS

Title (fr)
PROCÉDÉ DE PHOSPHATATION ET DE SAPONIFICATION À DÉCHARGE NULLE BASÉ SUR UN SYSTÈME DE CIRCULATION FERMÉE HAUTE PRESSION

Publication
EP 3591091 B1 20210721 (EN)

Application
EP 18187806 A 20180807

Priority
CN 201810709238 A 20180702

Abstract (en)
[origin: EP3591091A1] The invention discloses a method for zero-discharge phosphatization and saponification based on a high-pressure closed circulation system, which comprises an autoclave, a separation kettle, a buffer kettle and a hydraulic pump. The method comprises the following steps: step 1: a workpiece is fed into the autoclave and then sealed such that the pressure range of the autoclave is above 20 MPa; step 2: degreasing and derusting by CO₂; step 3: cyclic separation; step 4: high-pressure phosphatization; step 5: cyclic separation II; step 6: high-pressure saponification; step 7: cyclic separation III; and step 8: the autoclave is opened for aeration drying. The technical solution of the present application can greatly reduce the amount of acids, bases and industrial water used, provides good working conditions, facilitates the collection and treatment of production residues, does not produce sewage, does not cause environmental pollution and achieves zero discharge.

IPC 8 full level
C23C 22/00 (2006.01); **C23C 22/73** (2006.01); **C23C 22/83** (2006.01); **C23G 5/00** (2006.01)

CPC (source: CN EP)
C23C 22/00 (2013.01 - EP); **C23C 22/73** (2013.01 - CN EP); **C23C 22/83** (2013.01 - EP); **C23G 5/00** (2013.01 - EP)

Cited by
WO2023194312A1; WO2023219827A3

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

DOCDB simple family (publication)
EP 3591091 A1 20200108; **EP 3591091 B1 20210721**; CN 108754479 A 20181106; CN 108754479 B 20200421; TW 202006185 A 20200201; TW I668328 B 20190811

DOCDB simple family (application)
EP 18187806 A 20180807; CN 201810709238 A 20180702; TW 107129772 A 20180827