

Title (en)
METHOD OF PHOSPHATING METAL SURFACES

Title (de)
VERFAHREN ZUR PHOSPHATIERUNG VON METALLOBERFLÄCHEN

Title (fr)
PROCEDE POUR LA PHOSPHATATION DE SURFACES METALLIQUES

Publication
EP 0866888 A1 19980930 (DE)

Application
EP 96938047 A 19961102

Priority
• DE 19544614 A 19951130
• EP 9604767 W 19961102

Abstract (en)
[origin: DE19544614A1] The invention concerns a method of phosphating metal surfaces consisting at least partially of iron or steel using low-zinc technology, in which the metal surfaces are brought into contact with aqueous acidic phosphating solutions at between 30 and 65 DEG C for between 1 and 8 minutes. The phosphating solutions contain: between 0.4 and 2.0 g/l Zn; between 7 and 25 g/l P2O5; between 0.005 and 0.5 g/l peroxide (calculated as H2O2); and between 0.01 and 10 g/l formate (calculated as formate ion). The phosphating solutions are free from chlorate and added nitrite, the weight ratio of free P2O5 to total P2O5 therein is set at a value of between 0.03 and 0.20, and the amount of free acid is set at a value of between 0.5 and 2.5. Additionally, the phosphating solutions can contain up to 30 g/l nitrate and manganese, magnesium, calcium, lithium, tungstate, vanadate, molybdate or combinations thereof, optionally also nickel and/or cobalt each in amounts of up to 3 g/l, and optionally also up to 0.030 g/l copper. The weight ratios of Mn : Zn, Mg : Zn, Ca : Zn and optionally of Ni and/or Co : Zn should be at most 2 : 1 in each case. The method is suitable in particular for preparing metal surfaces for subsequent electrophoretic enamelling, in particular cathodic electrophoretic enamelling.

IPC 1-7
C23C 22/17; **C23C 22/18**

IPC 8 full level
C23C 22/17 (2006.01); **C23C 22/18** (2006.01)

CPC (source: EP US)
C23C 22/17 (2013.01 - EP US); **C23C 22/182** (2013.01 - EP US)

Citation (search report)
See references of WO 9720085A1

Cited by
EP1929070A1

Designated contracting state (EPC)
BE DE ES FR GB IT NL PT SE

DOCDB simple family (publication)
DE 19544614 A1 19970605; AU 702478 B2 19990225; AU 7562196 A 19970619; BR 9611667 A 19990223; CA 2236512 A1 19970605; CA 2236512 C 20050607; DE 59602269 D1 19990722; EP 0866888 A1 19980930; EP 0866888 B1 19990616; ES 2132966 T3 19990816; MX 9804278 A 19980930; US 6168674 B1 20010102; WO 9720085 A1 19970605; ZA 969999 B 19980528

DOCDB simple family (application)
DE 19544614 A 19951130; AU 7562196 A 19961102; BR 9611667 A 19961102; CA 2236512 A 19961102; DE 59602269 T 19961102; EP 9604767 W 19961102; EP 96938047 A 19961102; ES 96938047 T 19961102; MX 9804278 A 19980529; US 46828299 A 19991220; ZA 969999 A 19961128