

Title (en)
A process for phosphate-coating metal surfaces

Title (de)
Verfahren zur Phosphatierung von Metalloberflächen

Title (fr)
Procédé de phosphatation de surfaces métalliques

Publication
EP 0544650 B1 19971126 (EN)

Application
EP 93200125 A 19860827

Priority
• EP 86306622 A 19860827
• US 77003185 A 19850827

Abstract (en)
[origin: EP0228151A1] An acidic aqueous phosphate solution for phosphating a metal surface, particularly to avoid white spots, is substantially chlorate-free and comprises: a) from about 0.1 to about 1.5 g/l of zinc ion, b) from about 5 to about 50 g/l of phosphate ion, c) from about 0.2 to about 4 g/l of manganese ion, d) at least about 0.05 g/l of a fluoride ion, e) less than 0.5 g/l of chloride ion, and f) at least one of the following phosphating accelerators: i) from about 0.01 to about 0.2 g/l of nitrite ion, ii) from about 1 to about 15 g/l of nitrate ion, iii) from about 0.5 to about 5 g/l of hydrogen peroxide (based on 100% H₂O₂), iv) from about 0.05 to about 2 g/l of m-nitrobenzene-sulfonate ion, v) from about 0.05 to about 2 g/l of m-nitrobenzoate ion, and vi) from about 0.05 to about 2 g/l of p-nitrophenol.
[origin: EP0228151A1] Acidic, aqueous, substantially chlorate-free phosphate solution contains in S/L:- 0.1-1.5 Zn ions; 5-50 phosphate ions; 0.2-4 Mn ions; min 0.05 fluoride ions; less than 0.5 chloride ions; and at least one of the following phosphate accelerators:- 0.01-0.2 nitrite ions; 1-15 nitrate ions; 0.5-5 H₂O₂ (based on 100% H₂O₂); 0.05-2 m-nitrobenzene-sulphonate ions; 0.05-2 m-nitrobenzoate ions and 0.05-2 p-nitrophenol.

IPC 1-7
C23C 22/36

IPC 8 full level
C23C 22/36 (2006.01)

CPC (source: EP)
C23C 22/364 (2013.01); **C23C 22/365** (2013.01)

Cited by
US5792283A; AU697424B2; CN110088699A

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

DOCDB simple family (publication)
EP 0228151 A1 19870708; EP 0228151 B1 19931222; AT E160592 T1 19971215; AT E99002 T1 19940115; DE 3650659 D1 19980108; DE 3650659 T2 19980702; DE 3689442 D1 19940203; DE 3689442 T2 19940616; EP 0544650 A1 19930602; EP 0544650 B1 19971126; HK 1007771 A1 19990423; HK 1012681 A1 19990806; SG 52645 A1 19980928

DOCDB simple family (application)
EP 86306622 A 19860827; AT 86306622 T 19860827; AT 93200125 T 19860827; DE 3650659 T 19860827; DE 3689442 T 19860827; EP 93200125 A 19860827; HK 98106842 A 19980626; HK 98113999 A 19981218; SG 1996007305 A 19860827