

Title (en)  
AGENT FOR REDUCING COATING FILM OVERALL FRICTION COEFFICIENT FOR TRIVALENT CHROMATE TREATING SOLUTION, TRIVALENT CHROMATE TREATING SOLUTION AND METHOD FOR PRODUCTION THEREOF, AND TRIVALENT CHROMATE COATING FILM REDUCED IN OVERALL FRICTION COEFFICIENT AND METHOD FOR PRODUCTION THEREOF

Title (de)  
MITTEL ZUR VERRINGERUNG DES GESAMTREIBUNGSKOEFFIZIENTEN EINES BESCHICHTUNGSFILMS FÜR EINE DREIWERDIGES CHROMAT ENTHALTENDE BEHANDLUNGSLÖSUNG, DREIWERDIGES CHROMAT ENTHALTENDE BEHANDLUNGSLÖSUNG UND HERSTELLUNGSVERFAHREN DAFÜR UND DREIWERDIGES CHROMAT ENTHALTENDER BESCHICHTUNGSFILM MIT VERRINGERTEM GESAMTREIBUNGSKOEFFIZIENTEN UND HERSTELLUNGSVERFAHREN DAFÜR

Title (fr)  
AGENT VISANT A REDUIRE LE COEFFICIENT DE FRICTION GENERAL DU FILM PROTECTEUR POUR UNE SOLUTION DE TRAITEMENT AU CHROMATE TRIVALENT, SOLUTION DE TRAITEMENT AU CHROMATE TRIVALENT ET METHODE DE PRODUCTION DE CELLE-CI ET REDUCTION DU FILM DE PROTECTION EN CHROMATE TRIVALENT DANS LE COEFFICIENT DE FRICTION

Publication  
**EP 1734152 A1 20061220 (EN)**

Application  
**EP 05719901 A 20050303**

Priority  
• JP 2005003597 W 20050303  
• JP 2004058857 A 20040303

Abstract (en)  
It is an object of the present invention to provide a conversion film obtained by contacting a treating solution based on trivalent chromium with zinc or zinc alloy plating layers, which film does not contain hexavalent chromium, which film has corrosion resistance identical to that of the conversion film obtained by the conventional chromate treatment based on hexavalent chromium, and furthermore which has an overall friction coefficient identical to or lower than that of the conventional hexavalent chromate conversion film. The present invention also provides an agent for reducing a conversion film overall friction coefficient for a trivalent chromate treating solution, which agent contains a quinoline based compound or its derivative.

IPC 8 full level  
**C23C 22/47** (2006.01); **C23C 22/13** (2006.01); **C23C 22/17** (2006.01); **C23C 22/18** (2006.01); **C23C 22/20** (2006.01); **C23C 22/42** (2006.01); **C23C 22/46** (2006.01); **C23C 22/53** (2006.01); **C23F 11/14** (2006.01)

CPC (source: EP KR US)  
**C23C 22/17** (2013.01 - EP KR US); **C23C 22/46** (2013.01 - EP KR US); **C23C 22/47** (2013.01 - EP KR US); **C23C 22/53** (2013.01 - EP KR US); **C23F 11/149** (2013.01 - EP KR US); **C23C 2222/10** (2013.01 - EP KR US)

Cited by  
EP2138606A1; EP3896194A1; RU2643759C2; EP2492371A1; EP2385154A4; EP1970470A1; CN102066611A; EP2276873A4; EP2735626A3; EP2940188A1; US8460534B2; WO2008107039A1; WO2011147447A1; WO2009132344A2; US11643732B2

Designated contracting state (EPC)  
AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HU IE IS IT LI LT LU MC NL PL PT RO SE SI SK TR

DOCDB simple family (publication)  
**EP 1734152 A1 20061220**; **EP 1734152 A4 20110302**; CN 1950544 A 20070418; CN 1950544 B 20111221; JP 2005248233 A 20050915; JP 4446233 B2 20100407; KR 100799845 B1 20080131; KR 20060123628 A 20061201; US 2007023104 A1 20070201; WO 2005085497 A1 20050915

DOCDB simple family (application)  
**EP 05719901 A 20050303**; CN 200580014275 A 20050303; JP 2004058857 A 20040303; JP 2005003597 W 20050303; KR 20067018882 A 20060914; US 51450506 A 20060901