

Title (en)
Surface treatment by hydroxysulphate

Title (de)
Hydroxysulfat-Oberflächenbehandlung

Title (fr)
Traitement de surface par hydroxysulfate

Publication
EP 2450470 A1 20120509 (FR)

Application
EP 12000368 A 20041214

Priority
• EP 04816380 A 20041214
• FR 0315381 A 20031224

Abstract (en)
Aqueous treatment solution contains sulphate ions (SO₄²⁻) at a concentration of greater than or equal to 0.02 mol/l, for the treating the surface of a steel sheet with a zinc or zinc alloy based coating on at least one of its surfaces. The treatment is aimed at reducing the formation of powder or metal particles generated by the degradation of the coating during the shaping of the sheet. Independent claims are also included for: (a) lubrication of a coated steel sheet using the aqueous treatment solution; (b) utilisation of the aqueous treatment solution for treating coated steel sheet to improve temporary protection against corrosion.

Abstract (fr)
L'invention a pour objet l'utilisation d'une solution de traitement contenant des ions sulfates, pour traiter la surface d'une tôle d'acier galvanisée en vue de réduire la dégradation du revêtement lors de la mise en forme de ladite tôle, et en vue d'améliorer la protection temporaire contre la corrosion de ladite tôle. Elle concerne également un procédé de lubrification d'une telle tôle revêtue.

IPC 8 full level
C23C 22/68 (2006.01); **B21D 22/20** (2006.01); **C23C 2/26** (2006.01); **C23C 22/53** (2006.01); **C25D 9/06** (2006.01); **C25D 11/34** (2006.01)

CPC (source: EP KR US)
B21D 22/20 (2013.01 - KR); **C23C 2/06** (2013.01 - KR); **C23C 2/26** (2013.01 - EP KR US); **C23C 22/53** (2013.01 - EP KR US); **C23C 22/68** (2013.01 - EP KR US); **C25D 9/06** (2013.01 - EP KR US); **C25D 11/34** (2013.01 - KR)

Citation (search report)
• [XA] WO 0015878 A1 20000323 - LORRAINE LAMINAGE [FR], et al
• [E] WO 2005021823 A1 20050310 - JFE STEEL CORP [JP], et al
• [A] WO 02097151 A1 20021205 - KAWASAKI STEEL CO [JP], et al & EP 1391530 A1 20040225 - JFE STEEL CORP [JP]
• [A] WO 0151682 A1 20010719 - USINOR [FR], et al
• [A] KUNDE N D ET AL: "Correlation of prephosphate treatment, surface friction and powdering of galvanized during forming", SAE SPEC PUBL; SAE SPECIAL PUBLICATIONS; DEVELOPMENTS IN SHEET METAL STAMPING FEB 1998 SAE, WARRENDALE, PA, USA, vol. 1322, February 1998 (1998-02-01), pages 17 - 22, XP002290602

Cited by
US10287665B2; WO2017121826A1; US10738226B2

Designated contracting state (EPC)
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FR 2864552 A1 20050701; **FR 2864552 B1 20060721**; BR PI0418188 A 20070427; BR PI0418188 B1 20150818; CA 2551492 A1 20050804; CN 1914354 A 20070214; EP 1699947 A1 20060913; EP 2450470 A1 20120509; JP 2007517135 A 20070628; KR 101022683 B1 20110317; KR 20060129306 A 20061215; MX PA06007253 A 20060818; RU 2006126698 A 20080127; RU 2371516 C2 20091027; UA 89368 C2 20100125; US 2008308192 A1 20081218; WO 2005071140 A1 20050804; ZA 200605133 B 20070926

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