

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property Organization
International Bureau



(43) International Publication Date
16 June 2011 (16.06.2011)

(10) International Publication Number
WO 2011/069663 A3

PCT

(51) International Patent Classification:
C09D 5/38 (2006.01) **B05D 3/02** (2006.01)
C09D 183/04 (2006.01)

(21) International Application Number:
PCT/EP2010/007521

(22) International Filing Date:
10 December 2010 (10.12.2010)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
09015364.4 11 December 2009 (11.12.2009) EP

(71) Applicant (for all designated States except US): **TATA STEEL UK LIMITED** [GB/GB]; 30 Millbank, London SW1 P 4WY (GB).

(72) Inventors; and

(75) Inventors/Applicants (for US only): **GORDON, Douglas Jesus Figueroa** [GB/NL]; Tata Steel - Group Intellectual Property Services, P.O. Box 10000, NL- 19700 CA Ijmuiden (NL). **HARDING, Tim** [GB/NL]; Tata Steel - Group Intellectual Property Services, P.O. Box 10000, NL- 19700 CA Ijmuiden (NL). **BÖHM, Sivasambu** [DE/NL]; Tata Steel - Group Intellectual Property Services, P.O. Box 10000, NL- 19700 CA Ijmuiden (NL). **LI, Wu** [GB/NL]; Tata Steel - Group Intellectual Property Services, P.O. Box 10000, NL- 19700 CA Ijmuiden (NL).

(74) Agent: **HERMAN DE GROOT, Johan Willem**; Tata Steel Nederland Technology B.V., Tata Steel- Group IPS, PO Box 10000, NL-1970 CA Ijmuiden (NL).

(81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AO, AT, AU, AZ, BA, BB, BG, BH, BR, BW, BY, BZ, CA, CH, CL, CN, CO, CR, CU, CZ, DE, DK, DM, DO, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT, HN, HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KN, KP, KR, KZ, LA, LC, LK, LR, LS, LT, LU, LY, MA, MD, ME, MG, MK, MN, MW, MX, MY, MZ, NA, NG, NI, NO, NZ, OM, PE, PG, PH, PL, PT, RO, RS, RU, SC, SD, SE, SG, SK, SL, SM, ST, SV, SY, TH, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, ZA, ZM, ZW.

(84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LR, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AL, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HR, HU, IE, IS, IT, LT, LU, LV, MC, MK, MT, NL, NO, PL, PT, RO, RS, SE, SI, SK, SM, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Published:

- with international search report (Art. 21(3))
- before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments (Rule 48.2(h))

(88) Date of publication of the international search report:
25 August 2011

(54) Title: ENVIRONMENTALLY FRIENDLY PROTECTIVE COATINGS FOR SUBSTRATES

(57) Abstract: A coated cold-rolled steel substrate comprising a water-reducible coating composition, which coating composition comprises water, an organic solvent, a silane as binder, a coating additive and a metal, wherein the metal is a metal particle or a metal alloy particle having an aluminium content greater than 50 weight % and a balance of less than 50 weight % of a non-aluminium metal, and wherein the coating has a wet film thickness in the range of 6 µm to 90 µm.



WO 2011/069663 A3

INTERNATIONAL SEARCH REPORT

International application No
PCT/EP2010/007521

A. CLASSIFICATION OF SUBJECT MATTER
INV. C09D5/38 C09D183/04 B05D3/02
ADD.

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
C09D B05D

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-Internal, WPI Data

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	WO 2004/033116 A (COATINGS FOR IND [US]; KLOTZ BRIAN [US]; KLOTZ KEVIN [US]) 22 April 2004 (2004-04-22) examples 1-6,9,10: alu powder examples 7 and 8: plus aminosialne or glycidoxysilane & US 2006/166014 A1 (KLOTZ BRIAN [US] ET AL) 27 July 2006 (2006-07-27) -----	1-15



Further documents are listed in the continuation of Box C.



See patent family annex.

* Special categories of cited documents :

"A" document defining the general state of the art which is not considered to be of particular relevance

"E" earlier document but published on or after the international filing date

"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)

"O" document referring to an oral disclosure, use, exhibition or other means

"P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.

"&" document member of the same patent family

Date of the actual completion of the international search

5 July 2011

Date of mailing of the international search report

14/07/2011

Name and mailing address of the ISA/

European Patent Office, P.B. 5818 Patentlaan 2
NL - 2280 HV Rijswijk
Tel. (+31-70) 340-2040,
Fax: (+31-70) 340-3016

Authorized officer

Kolitz, Roderich

INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No

PCT/EP2010/007521

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
WO 2004033116 A	22-04-2004	AU 2003277303 A1	04-05-2004
		BR 0306570 A	30-11-2004
		CA 2501349 A1	22-04-2004
