



(51) International Patent Classification:

C08G 65/00 (2006.01) *C09D 171/00* (2006.01)
C09D 4/00 (2006.01) *C08G 65/336* (2006.01)

(21) International Application Number:

PCT/US2013/049924

(22) International Filing Date:

10 July 2013 (10.07.2013)

(25) Filing Language:

English

(26) Publication Language:

English

(30) Priority Data:

61/670,958 12 July 2012 (12.07.2012) US

(71) Applicant: **DOW CORNING CORPORATION**
[US/US]; 2200 West Salzburg Road, Midland, MI 48686-00551 (US).

(72) Inventors: **BRADFORD, Michael, L.**; 2910 Darby Court, Midland, MI 48642 (US). **HYUN, Daesup**; 4718 Blossom Circle, Midland, MI 48642 (US). **SCHNEIDER, Ryan, F.**; 3208 Whitewood Drive, Midland, MI 48642 (US).

(74) Agents: **LaPrairie, David, M.** et al.; Howard & Howard Attorneys PLLC, 450 West Fourth Street, Royal Oak, MI 48067 (US).

(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, BN, 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, 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, PA, PE, PG, PH, PL, PT, QA, RO, RS, RU, RW, 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, RW, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, 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, KM, ML, MR, NE, SN, TD, TG).

Declarations under Rule 4.17:

— *of inventorship (Rule 4.17(iv))*

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:

26 June 2014



(54) Title: COMPOSITION FOR SURFACE TREATMENT, METHODS OF PREPARING A SURFACE-TREATED ARTICLE, AND SURFACE TREATED ARTICLE

(57) Abstract: A composition for surface treatment comprises a polyfluoropolyether silane, a solvent, and an additive compound for improving appearance and durability of layers formed from the composition. The layers formed from the surface treatment composition have excellent physical properties, including smudge and stain resistance, as well as durability.

INTERNATIONAL SEARCH REPORT

International application No
PCT/US2013/049924

A. CLASSIFICATION OF SUBJECT MATTER
 INV. C08G65/00 C09D4/00 C09D171/00 C08G65/336
 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)
 C08G C09D C08K
 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 practicable, 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 | US 2009/299001 A1 (SATO SHINICHI [JP]) 3 December 2009 (2009-12-03) paragraphs [0031] - [0032], [0046], [0050], [0047]; examples 1-7 ----- | 1,2,5, 7-10,13, 15 |
| X | WO 2012/064653 A1 (3M INNOVATIVE PROPERTIES CO [US]; RAJAGOPAL RAMA V [SG]; IYER SURESH S) 18 May 2012 (2012-05-18) paragraphs [0009] - [0019], [0024] - [0025]; examples 5-6,1-2 ----- | 1-4, 6-12,14, 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 | "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 |
| "E" earlier application or patent but published on or after the international filing date | "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 |
| "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) | "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 |
| "O" document referring to an oral disclosure, use, exhibition or other means | "&" document member of the same patent family |
| "P" document published prior to the international filing date but later than the priority date claimed | |

| | |
|---|--|
| Date of the actual completion of the international search 8 May 2014 | Date of mailing of the international search report 15/05/2014 |
|---|--|

| | |
|--|---|
| 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 Dalet, Pierre |
|--|---|

INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No

PCT/US2013/049924

| Patent document cited in search report | Publication date | Patent family member(s) | Publication date |
|--|------------------|-------------------------|-----------------------------|
| US 2009299001 | A1 | 03-12-2009 | AT 496956 T 15-02-2011 |
| | | | EP 2130850 A1 09-12-2009 |
| | | | JP 4632069 B2 23-02-2011 |
| | | | JP 2009286985 A 10-12-2009 |
| | | | US 2009299001 A1 03-12-2009 |
| ----- | | | |
| WO 2012064653 | A1 | 18-05-2012 | CN 103201349 A 10-07-2013 |
| | | | EP 2638117 A1 18-09-2013 |
| | | | JP 2014501804 A 23-01-2014 |
| | | | US 2013220177 A1 29-08-2013 |
| | | | WO 2012064653 A1 18-05-2012 |
| ----- | | | |