

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

(19) World Intellectual Property Organization
International Bureau



(43) International Publication Date
14 April 2011 (14.04.2011)

(10) International Publication Number
WO 2011/044093 A3

PCT

(51) International Patent Classification:

C08G 65/32 (2006.01) **C08L 71/00** (2006.01)
C08G 65/323 (2006.01) **C08J 5/00** (2006.01)
C08G 65/333 (2006.01)

(21) International Application Number:

PCT/US2010/051422

(22) International Filing Date:

5 October 2010 (05.10.2010)

(25) Filing Language:

English

(26) Publication Language:

English

(30) Priority Data:

0917450.9 6 October 2009 (06.10.2009) GB

(71) Applicant (for all designated States except US): **3M INNOVATIVE PROPERTIES COMPANY** [US/US]; 3M Center, Post Office Box 33427, Saint Paul, Minnesota 55133-3427 (US).

(72) Inventors; and

(75) Inventors/Applicants (for US only): **CORVELEYN, Steven, G.** [BE/BE]; Hermeslaan 7, B-1831 Deigem (BE). **DAMS, Rudolf, J.** [BE/BE]; Hermeslaan 7, B-1831 Deigem (BE). **GROOTAERT, Werner, M., A.** [US/US]; 3M Center, Post Office Box 33427, Saint Paul, Minnesota 55133-3427 (US). **DAHLKE, Gregg, D.** [US/US]; 3M Center, Post Office Box 33427, Saint Paul, Minnesota 55133-3427 (US). **GUERRA, Miguel, A.** [US/US]; 3M Center, Post Office Box 33427, Saint Paul, Minnesota 55133-3427 (US).

(74) Agents: **EHRICH, Dena, M.** et al.; 3M Center, Office of Intellectual Property Counsel, Post Office Box 33427, Saint Paul, Minnesota 55133-3427 (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, 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:

18 August 2011

(54) Title: TRIAZINE CONTAINING FLUOROPOLYETHER ELASTOMERS HAVING VERY LOW GLASS TRANSITION TEMPERATURES, COMPOSITIONS CONTAINING THEM AND METHODS OF MAKING THEM

(57) Abstract: A method of making a fluoropolyether elastomer containing triazine groups and having a glass transition temperature of less than -40 °C, including providing (i) one or more saturated fluoropolyethers containing repeating moieties selected from (-C₃F₈O-), (-C₃F₆O-), (-C₂F₄O-), (-CF₂O-) and combinations thereof and further containing at least one functional group at a terminal carbon atom of the backbone chain, or of a side chain if present, wherein the terminal carbon atom may be a primary or secondary carbon atom and wherein the functional group is capable of reacting with a functional group of the fluorinated compound according to (ii) below to form a triazine ring, (ii) one or more fluorinated compound containing at least one perfluorinated alkyl or perfluorinated alkylene moiety wherein the carbon atoms of the perfluorinated alkyl or alkylene moiety may be interrupted by one or more oxygen atoms and wherein the fluorinated compound further contains at least one functional group capable of reacting with the functional group of the one or more fluoropolyethers to form a triazine; curing the components according to (i) and (ii) to form triazines. Further provided are cured compositions, articles comprising the cured compositions and methods of making articles.



WO 2011/044093 A3