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- (71) **Applicant** (*for all designated States except US*):
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(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, 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.

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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:**

11 April 2013

(54) **Title:** HYBRID SEALANT COMPOSITION

(57) **Abstract:** An acrylic-polyurethane hybrid sealant composition is provided with desirable physical and mechanical properties such as superior adhesion, tensile strength, rheology and bond strength. In particular, the sealant composition of the invention is formulated with isocyanate modified acrylic polymer. The composition includes an acrylic pre-polymer, an isocyanate functional monomer, a triacrylate as a cross-linker, and a catalyst. A process for preparing the composition is also provided. The hybrid sealant composition is well suited for sealing and bonding requirements in fabrication of articles such as window glazing, back bedding, construction, aerospace and appliances industries. A hybrid sealant composition is provided that develops adequate adhesion and bond strength equivalent to commercially available sealants when used in sealing and bonding applications and is readily formulated to be self-leveling. Articles so fabricated using the hybrid sealant composition are also provided.



INTERNATIONAL SEARCH REPORT

International application No.
PCT/US2012/042842**A. CLASSIFICATION OF SUBJECT MATTER*****C09K 3/12(2006.01)i, C08L 75/06(2006.01)i***

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)

C09K, C08G, C08L

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

Korean utility models and applications for utility models

Japanese utility models and applications for utility models

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

eKOMPASS(KIPO internal) & Keywords: acryl*, isocyanate, (triacrylate, trimethacrylate), (catalyst, tin), sealant

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	WO 2009-049173 A1 (ILLINOIS TOOL WORKS INC.) 16 April 2009 Cited in the application as US 2009/0098388 A1, see [0003]-[0027]; claims 1-17	1-28
A	US 04778831 A (KEMPER) 18 October 1988 See claim 6	1-28
A	US 7507443 B2 (TRABESINGER) 24 March 2009 See claims 1-24	1-28
A	US 2007-0043198 A1 (MADAJ) 22 February 2007 See [0028]-[0043]; claims 1-20	1-28

☐ 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 application or patent but published on or after the international filing date

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"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

30 JANUARY 2013 (30.01.2013)

Date of mailing of the international search report

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INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No.

PCT/US2012/042842

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
WO 2009-049173 A1	16.04.2009	CA 2702309 A1 EP 2203493 A1 US 2009-0098388 A1 US 8216682 B2	16.04.2009 07.07.2010 16.04.2009 10.07.2012
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US 2007-0043198 A1	22.02.2007	None	