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

(19) World Intellectual Property Organization

International Bureau
(43) International Publication Date





(10) International Publication Number WO 2012/074745 A3

7 June 2012 (07.06.2012)

(51) International Patent Classification:

C09D 179/04 (2006.01) C08F 20/10 (2006.01)

C09D 133/08 (2006.01) C08J 7/04 (2006.01)

C08G 73/18 (2006.01)

(21) International Application Number:

PCT/US2011/060897

(22) International Filing Date:

16 November 2011 (16.11.2011)

(25) Filing Language:

English

(26) Publication Language:

English

(30) Priority Data:

12/957,601 1 December 2010 (01.12.2010)

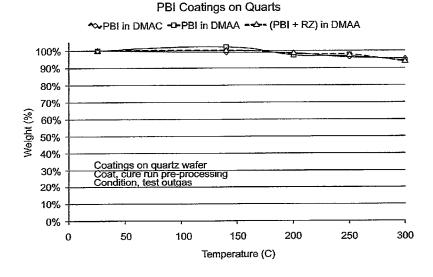
US

- (71) Applicant: PBI PERFORMANCE PRODUCTS, INC. [US/US]; 9800-D Southern Pine Boulevard, Charlotte, NC 28273 (US).
- (72) Inventors: MOORE, John, C.; 5316 Fieldcrest Drive, Camarillo, CA 93012 (US). COPELAND, Gregory, S.; 1218 Whitetail Drive, Tega Cay, SC 29708 (US). GRUENDER, Michael; 206 N. Brackenbury Lane, Charlotte, NC 28270 (US)

- (74) Agents: HAMMER, Robert, H., III. et al.; Hammer & Associates, P.C., 3125 Springbank Lane, Suite G, Charlotte, NC 28226 (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, QA, RO, RS, RU, RW, SC, SD, SE, SG, SK, SL, SM, ST, SV, SY, TH, TJ, TM, TN, TT, TZ, UA, UG, 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, 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).

[Continued on next page]

(54) Title: POLYBENZIMIDAZOLE/POLYACRYLATE MIXTURES



(57) Abstract: PBI compositions include solutions comprising PBI and acrylate monomer and coatings comprising PBI and polyacrylate. The solutions may also include polymerization initiator, solvent, co-polymers. The coatings are thermally resistant, electrically insulating (dielectric), and adhesive. The PBI compositions are used in the manufacture of microelectronics and related products. Methods for applying the PBI compositions are also discussed.





Declarations under Rule 4.17:

- as to applicant's entitlement to apply for and be granted a patent (Rule 4.17(ii))
- the earlier application (Rule 4.17(iii))
- 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))
- as to the applicant's entitlement to claim the priority of (88) Date of publication of the international search report: 4 October 2012

Published:

with international search report (Art. 21(3))

A. CLASSIFICATION OF SUBJECT MATTER

C09D 179/04(2006.01)i, C09D 133/08(2006.01)i, C08G 73/18(2006.01)i, C08F 20/10(2006.01)i, C08J 7/04(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) C09D 179/04; C08L 79/06; C08L 67/02; C08G 18/50; B32B 5/16; C09D 175/04; B32B 5/02

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) eKOMPASS(KIPO internal), Google

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X Y	US 4963628 A (CHEN, P. N. SR. et al.) 16 October 1990 See claims 1, 13.	1,8 2-7,9-13
Y	US 2008-0008838 A1 (ARPAC, E. et al.) 10 January 2008 See claims 19, 21, 31, 35, 41, paragraph [0075].	2-7,9-13
A	US 2010-0323573 A1 (CHU, B. et al.) 23 December 2010 See claims 1-4, 30.	1-13

	Further documents are l	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
- 'L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of citation or other special reason (as specified)
- 'O" document referring to an oral disclosure, use, exhibition or other
- "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

20 JULY 2012 (20.07.2012)

Date of mailing of the international search report

23 JULY 2012 (23.07.2012)

Name and mailing address of the ISA/KR



Korean Intellectual Property Office 189 Cheongsa-ro, Seo-gu, Daejeon Metropolitan City, 302-701, Republic of Korea

Facsimile No. 82-42-472-7140

Authorized officer

LEE, Dong Wook

Telephone No. 82-42-481-8163



INTERNATIONAL SEARCH REPORT

International application No.

Information on p	PCT/U	PCT/US2011/060897	
Patent document cited in search report	Publication date	Patent family member(s)	Publication date
US 4963628 A	16.10.1990	None	
US 2008-0008838 A1	10.01.2008	DE 102004008772 A1 EP 1718690 A1 JP 2007-526366 A KR 10-2007-0021157 A W0 2005-080465 A1	08.09.2005 08.11.2006 13.09.2007 22.02.2007 01.09.2005
US 2010-0323573 A1	23.12.2010	AU 2005-333585 A1 AU 2005-333585 B2 CA 2583469 A1 CN 101039798 A0 EP 1796822 A2 EP 1796822 A4 JP 2008-515668 A JP 2011-183389 A KR 10-2007-0059135 A W0 2007-001405 A2 W0 2007-001405 A3	04.01.2007 16.12.2010 04.01.2007 19.09.2007 20.06.2007 17.09.2008 15.05.2008 22.09.2011 11.06.2007 04.01.2007 18.05.2007