

(19) World Intellectual Property Organization  
International Bureau



(43) International Publication Date  
21 February 2008 (21.02.2008)

PCT

(10) International Publication Number  
**WO 2008/022052 A3**

(51) International Patent Classification:

**C09J 4/00** (2006.01)

(21) International Application Number:

PCT/US2007/075752

(22) International Filing Date: 10 August 2007 (10.08.2007)

(25) Filing Language:

English

(26) Publication Language:

English

(30) Priority Data:

60/836,768

10 August 2006 (10.08.2006)

US

(71) Applicant (for all designated States except US): **ADCO PRODUCTS, INC.** [US/US]; 4401 Page Avenue, Michigan Center, MI 49254 (US).

(72) Inventors; and

(75) Inventors/Applicants (for US only): **KENDRA, Eli** [US/US]; Ann Arbor, MI. **BOOTH, Dennis** [US/US]; Grass Lake, MI. **SNOWWHITE, Paul** [US/US]; Dexter, MI.

(74) Agent: **VIVACQUA, Raymond, J.**; 455 East Eisenhower Parkway, Suite 11, Ann Arbor, MI 48108 (US).

(81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BH, BR, BW, BY, BZ, CA, CH, 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, PG, PH, PL, PT, RO, RS, RU, SC, SD, SE, SG, SK, SL, SM, SV, SY, 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, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, LV, MC, MT, NL, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Published:

— with international search report

(88) Date of publication of the international search report:

15 January 2009

(54) Title: CURABLE SEALING METHOD AND FOAMABLE COMPOSITION

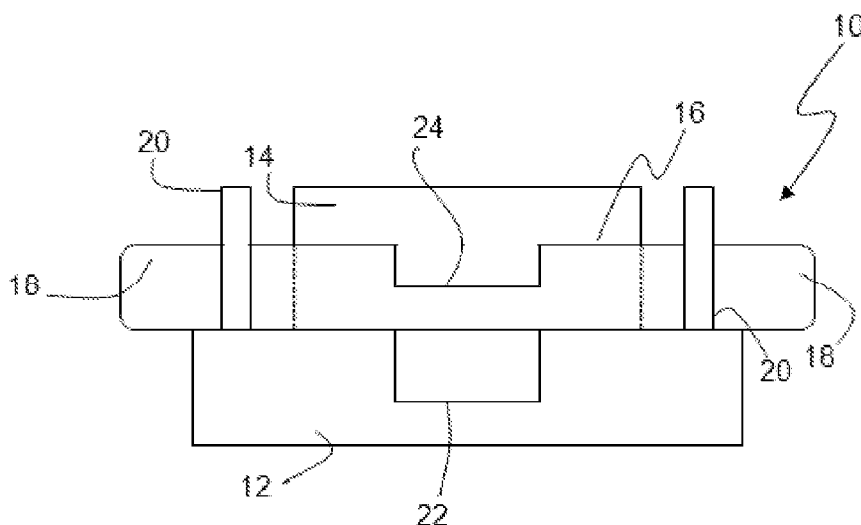


FIGURE 2

(57) Abstract: A foamable composition adapted to seal to a substrate is provided. The foamable composition includes a radiation curable rubber, a photoinitiator, a blowing agent, a styrene-ethylene/butylene block copolymer, a light mineral oil, a tackifier, and one of a radiation curable monomer and radiation curable oligomer. The uncured portions of the composition foam upon heating.

WO 2008/022052 A3

## INTERNATIONAL SEARCH REPORT

International application No.

PCT/US 07/75752

## A. CLASSIFICATION OF SUBJECT MATTER

IPC(8) - C09J 4/00 (2008.04)

USPC - 156/331.1

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)

USPC - 156/331.1

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched  
USPC - 156/60,325,326,327,330.9,331.1 (text search - search terms below)

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

PubWEST (PGPB,USPT,OC,EPAB,JPAB); DialogPro (General Research); Google Patents

seal, radiation, cure, photoinitiator, blowing agent, foam, styrene, ethylene, butylene, oil, tackifier, monomer, oligomer, expand, heat, butadiene, UV, microsphere, azodicarbonamide, diacrylate, filler, %, motor vehicle, hot melt

## 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 6,586,483 B2 (KOLB et al.) 01 July 2003 (01.07.2003), abstract, col 1, ln 23-33, col 2, ln 5-34, col 3, ln 5-6, col 9, ln 43 - col 10, ln 9, col 10, ln 31-57, col 11, ln 17-41, col 11, ln 56 - col 12, ln 51, col 12, ln 66 - col 13, ln 11, col 13, ln 35-55, col 13, ln 66 - col 14, ln 4, col 14, ln 30-39, col 18, ln 5-15, col 18, ln 26-30 and col 20, ln 55 - col 21, ln 2.	1-6, 8, 9 and 11 ----- 10
Y	US US 6,277,916 B1 (TERBRUEGGEN et al.) 21 August 2001 (21.08.2001), abstract, col 1, ln 8-27, col 3, ln 18-34, col 10, ln 39-48, col 1, ln 64 - col 12, ln 2, col 12, ln 40-45, col 13, ln 21-35, col 13, ln 65-67, col 15, ln 62 - col 16, ln 11, col 20, ln 61 - col 21, ln 20, col 22, ln 58-67, col 23, ln 17-24, col 23, ln 46 - col 24, ln 6 and col 24, ln 20 - col 25, ln 5.	7
Y	US 2003/0035917 A1 (HYMAN) 20 February 2003 (20.02.2003), para [0164], [0167]-[0170], [0199], [0309], [0405], [0417], [0434], [0435], [0441], [0519] and [0537].	7
Y	US 7,022,400 B2 (BOLLING et al.) 04 April 2006 (04.04.2006), abstract, col 1, ln 14-46, col 2, ln 20-39 and col 3, ln 4-58.	10
A	US 2005/0165164 A1 (MOELLER et al.) 28 July 2005 (28.07.2005), entire document	1-6 and 8-11
A	US 2002/0007014 A1 (HYDE et al.) 17 January 2002 (17.01.2002), entire document.	1-6 and 8-11
A	US 5,618,883 A (PLAMTHOTTAM et al.) 08 April 1997 (08.04.1997), entire document.	7

☐ Further documents are listed in the continuation of Box C.

\* 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

"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

"&amp;" document member of the same patent family

Date of the actual completion of the international search

24 September 2008 (24.09.2008)

Date of mailing of the international search report

01 OCT 2008

Name and mailing address of the ISA/US

Mail Stop PCT, Attn: ISA/US, Commissioner for Patents  
P.O. Box 1450, Alexandria, Virginia 22313-1450

Facsimile No. 571-273-3201

Authorized officer:

Lee W. Young

PCT Helpdesk: 571-272-4300  
PCT OSP: 571-272-7774