



(43) International Publication Date
4 October 2012 (04.10.2012)

(10) International Publication Number
WO 2012/135281 A3

(51) International Patent Classification:

C08F 283/12 (2006.01) *C08F 2/22* (2006.01)
C08F 30/08 (2006.01) *A61K 8/89* (2006.01)

(21) International Application Number:

PCT/US2012/030843

(22) International Filing Date:

28 March 2012 (28.03.2012)

(25) Filing Language:

English

(26) Publication Language:

English

(30) Priority Data:

61/516,100 29 March 2011 (29.03.2011) US

(71) Applicant (*for all designated States except US*): **ALZO INTERNATIONAL, INC.** [US/US]; 650 Jernee Mill Road, Sayreville, NJ 08872 (US).

(72) Inventors; and

(75) Inventors/Applicants (*for US only*): **ZOFCHAK, Albert, A** [US/US]; 4 Oakwood Court, Holmdel, NJ 07733 (US). **CARSON, John, C.** [US/US]; 2310 West Street, Union City, NJ 07087 (US). **AWAD, Nagi, M.** [US/US]; 322 Freemans Ln., Franklin Lakes, NJ 07417 (US).

(74) Agent: **COLEMAN, Henry, D.**; Coleman Sudol Sapone, P.C., 714 Colorado Avenue, Bridgeport, CT 06605-1601 (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, 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, 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:

3 January 2013

(54) Title: SILICONE CROSSLINKED UNSATURATED HYDROCARBON BASED POLYMERS

(57) Abstract: The invention describes the use of organic compounds that have multiple unsaturations as a substrate for the cross-linking reaction with hydrosilane terminated polydimethylsiloxanes. This reaction results in organic solvent compatible silicone crosslinked unsaturated hydrocarbon based polymers that have excellent lubricity and are clear gels. These compounds have many applications in cosmetic and personal care product formulations.



WO 2012/135281 A3

A. CLASSIFICATION OF SUBJECT MATTER*C08F 283/12(2006.01)i, C08F 30/08(2006.01)i, C08F 2/22(2006.01)i, A61K 8/89(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)

C08F 283/12; A61K 8/37; C08L 53/00; C08F 8/00; C08L 83/10; A61Q 17/04; G03G 9/10

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) & Keywords: silylated elastomer, hydrosilation of elastomer, polybutadiene hydrosilation

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X A	US 6271309 B1 (ROBERTS, G. P. et al.) 07 August 2001 See columns 2-3, 6-8.	1-5, 17-20 31-34
X A	US 4803244 A (UMPLEBY, J. D.) 07 February 1989 See abstract, coulms 2-3.	1-5, 17-20 31-34
A	US 2010-0322877 A1 (ZOFCHAK, A. A. et al.) 23 December 2010 See the whole document.	1-5, 17-20, 31-34
A	US 3928490 A (HERGENROTHER, W. L.) 23 December 1975 See the whole document.	1-5, 17-20, 31-34
A	US 4954408 A (GEORGES, M. K.) 04 September 1990 See the whole document.	1-5, 17-20, 31-34



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

"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 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

23 OCTOBER 2012 (23.10.2012)

Date of mailing of the international search report

23 OCTOBER 2012 (23.10.2012)

Name and mailing address of the ISA/KR

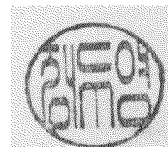
Korean Intellectual Property Office
189 Cheongsa-ro, Seo-gu, Daejeon Metropolitan
City, 302-701, Republic of Korea

Facsimile No. 82-42-472-7140

Authorized officer

Jung Doo Young

Telephone No. 82-42-481-8699



INTERNATIONAL SEARCH REPORT

International application No.

PCT/US2012/030843**Box No. II Observations where certain claims were found unsearchable (Continuation of item 2 of first sheet)**

This international search report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☐ Claims Nos.:
because they relate to subject matter not required to be searched by this Authority, namely:
2. ☒ Claims Nos.: 8,9,13,24-26,28,30
because they relate to parts of the international application that do not comply with the prescribed requirements to such an extent that no meaningful international search can be carried out, specifically:

Claims 8, 9, 13, 24 to 26, 28 and 30 are in reference to multiple dependent claims 7, 12, 23 and 27, which are not subjected to the meaningful search in accordance with the second and the third sentence of Rule 6.4(a).
3. ☒ Claims Nos.: 6,7,10-12,14-16,21-23,27,29
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

Box No. III Observations where unity of invention is lacking (Continuation of item 3 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

1. ☐ As all required additional search fees were timely paid by the applicant, this international search report covers all searchable claims.
2. ☐ As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.
3. ☐ As only some of the required additional search fees were timely paid by the applicant, this international search report covers only those claims for which fees were paid, specifically claims Nos.:
4. ☐ No required additional search fees were timely paid by the applicant. Consequently, this international search report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

Remark on Protest

- ☐ The additional search fees were accompanied by the applicant's protest and, where applicable, the payment of a protest fee.
- ☐ The additional search fees were accompanied by the applicant's protest but the applicable protest fee was not paid within the time limit specified in the invitation.
- ☐ No protest accompanied the payment of additional search fees.

INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No.

PCT/US2012/030843

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
US 6271309 B1	07.08.2001	CA 2379158 A1 DE 60018187 D1 DE 60018187 T2 EP 1200525 A1 EP 1200525 B1 JP 2003-521568 A JP 2003-521568 T KR 10-2002-0035112 A WO 01-09250 A1	08.02.2001 24.03.2005 29.12.2005 02.05.2002 16.02.2005 15.07.2003 15.07.2003 09.05.2002 08.02.2001
US 4803244 A	07.02.1989	None	
US 2010-0322877 A1	23.12.2010	CA 2703114 A1 EP 2211833 A2 WO 2009-054931 A2 WO 2009-054931 A3	30.04.2009 04.08.2010 30.04.2009 02.07.2009
US 3928490 A	23.12.1975	None	
US 4954408 A	04.09.1990	US 5086141 A	04.02.1992