

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

(19) World Intellectual Property Organization  
International Bureau



(43) International Publication Date  
21 October 2004 (21.10.2004)

PCT

(10) International Publication Number  
**WO 2004/089319 A3**

(51) International Patent Classification<sup>7</sup>: **A61K 7/34, 7/38**

(21) International Application Number:  
PCT/US2004/009864

(22) International Filing Date: 31 March 2004 (31.03.2004)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:  
60/459,307 1 April 2003 (01.04.2003) US

(71) Applicant (for all designated States except US): **THE PROCTER & GAMBLE COMPANY [US/US]**; One Procter & Gamble Plaza, Cincinnati, Ohio 45202 (US).

(72) Inventors; and

(75) Inventors/Applicants (for US only): **WALLING, David, William [US/US]**; 11044 Woodlands Way, Cincinnati, Ohio 45241 (US). **CHU, Phi, Van [US/US]**; 2857 W. North Bend Road, Cincinnati, Ohio 45239 (US).

(74) Common Representative: **THE PROCTER & GAMBLE COMPANY**; c/o T. David Reed, 6110 Center Hill Road, Cincinnati, Ohio 45224 (US).

(81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM,

AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

(84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LS, MW, MZ, 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, IT, LU, MC, 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
- before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments

(88) Date of publication of the international search report:  
2 December 2004

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

WO 2004/089319 A3

(54) Title: HIGH EFFICACY ANTIPERSPIRANT STICK CONTAINING LOW LEVELS OF NON-VOLATILE ORGANIC FLUIDS

(57) Abstract: An antiperspirant stick product comprising from about 5% to about 35% by weight of an antiperspirant active; from about 5% to about 35% by weight of a structurant, from about 20% to about 80% by weight of a volatile fluid; 10% or less by weight of a non-volatile organic fluid; free of non-volatile silicone fluids, wherein, the stick has a hardness of at least about 600 gramforce and an adhesion value of at least 33%.

# INTERNATIONAL SEARCH REPORT

International Application No

/US2004/009864

**A. CLASSIFICATION OF SUBJECT MATTER**  
 IPC 7 A61K7/34 A61K7/38

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)  
 IPC 7 A61K

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 practical, search terms used)

EPO-Internal, CHEM ABS Data, PAJ, WPI Data

**C. DOCUMENTS CONSIDERED TO BE RELEVANT**

Category	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	<p>ERNEST W. FLICK: "Cosmetic and toiletry formulations" 'Online! 1999, WILLIAM ANDREW PUBLISHING/NOYES , NORWICH, NEW YORK, USA , XP002297278 ISBN: 0-8155-1430-1 Retrieved from the Internet:  <a href="http://www.knovel.com/knovel2/Toc.jsp?BookID=597">URL: http://www.knovel.com/knovel2/Toc.jsp?BookID=597</a>          'retrieved on 2004-09-21!          Section I, Antiperspirants and Deodorants,          Enhanced Antiperspirant stick          page 4, paragraph 1</p> <p style="text-align: center;">-----          -/-</p>	1-7, 9, 10

Further documents are listed in the continuation of box C.

Patent family members are listed in 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 document 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.

\*&\* document member of the same patent family

Date of the actual completion of the international search

22 September 2004

Date of mailing of the international search report

06/10/2004

Name and mailing address of the ISA

European Patent Office, P.B. 5818 Patentlaan 2  
 NL - 2280 HV Rijswijk  
 Tel. (+31-70) 340-2040, Tx. 31 651 epo nl,  
 Fax: (+31-70) 340-3015

Authorized officer

Loloiu, C

## INTERNATIONAL SEARCH REPORT

International Application No  
PCT/US2004/009864

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT		
Category	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	PERSONAL CARE POLYMERS, 'Online! 15 May 2001 (2001-05-15), XP002297277 Retrieved from the Internet: URL: <a href="http://www.personalcarepolymers.com/Doc/EN/FORMULATION/7528127A.pdf">http://www.personalcarepolymers.com/Doc/EN/FORMULATION/7528127A.pdf</a> > 'retrieved on 2004-09-21! Silky smooth antiperspirant stick -----	1-7,9,10
X	CHANG I B ET AL: "ANTIPERSPIRANT STICKS MODIFIED WITH LOW MOLECULAR WEIGHT POLYETHYLENES AND ETHYLENE COPOLYMERS" COSMETICS & TOILETRIES, WHEATON, IL, US, vol. 11, no. 104, November 1989 (1989-11), pages 115-124, XP001084865 ISSN: 0361-4387 Ref.no. 56-0,56-2,61-3,71-0,72-1 page 123; table II -----	1-8
X	US 6 361 765 B1 (EMSLIE BRUCE STEVEN ET AL) 26 March 2002 (2002-03-26) column 4, line 49 – line 58; examples 1-6,10,13-15; table 1 column 8, line 28 – column 9, line 8 column 12, line 21 – column 13, line 35 -----	1-10
X	US 5 942 215 A (EDWARDS CHRISTOPHER JOHN CARRU ET AL) 24 August 1999 (1999-08-24) column 2, line 7 – line 46; claims; examples 1-3 column 3, line 50 – column 4, line 17 -----	1-10
X	EP 0 117 070 A (PROCTER & GAMBLE) 29 August 1984 (1984-08-29) examples 1,2 -----	1-10
A	US 6 352 688 B1 (SCAVONE TIMOTHY ALAN ET AL) 5 March 2002 (2002-03-05) cited in the application column 2, line 21 – line 35 column 3, line 45 – column 4, line 11 -----	1-10

**INTERNATIONAL SEARCH REPORT**

Information on patent family members

national Application No

PCT/US2004/009864

Patent document cited in search report		Publication date	Patent family member(s)		Publication date
US 6361765	B1	26-03-2002	AU	770263 B2	19-02-2004
			AU	5677600 A	28-12-2000
			BR	0011256 A	05-03-2002
			CN	1365271 T	21-08-2002
			WO	0074640 A1	14-12-2000
			EP	1180010 A1	20-02-2002
			JP	2003501368 T	14-01-2003
			PL	352963 A1	22-09-2003
			ZA	200109935 A	03-12-2002
			AU	6591901 A	20-11-2001
			BR	0110663 A	25-03-2003
			WO	0185119 A1	15-11-2001
			EP	1280502 A1	05-02-2003
			US	2002022010 A1	21-02-2002
US 5942215	A	24-08-1999	AU	735995 B2	26-07-2001
			AU	6907798 A	22-05-1998
			BR	9712403 A	31-08-1999
			CA	2269837 A1	07-05-1998
			DE	69718508 D1	20-02-2003
			DE	69718508 T2	02-10-2003
			WO	9818438 A1	07-05-1998
			EP	0942707 A1	22-09-1999
			ES	2189985 T3	16-07-2003
			HU	9904260 A2	28-04-2000
			ID	21980 A	19-08-1999
			JP	2001503043 T	06-03-2001
			NZ	335390 A	29-09-2000
			PL	333103 A1	08-11-1999
			RU	2187997 C2	27-08-2002
			ZA	9709713 A	29-04-1999
EP 0117070	A	29-08-1984	AT	55898 T	15-09-1990
			CA	1218311 A1	24-02-1987
			DE	3483051 D1	04-10-1990
			EP	0117070 A2	29-08-1984
			MX	159578 A	06-07-1989
			US	4725432 A	16-02-1988
US 6352688	B1	05-03-2002	AU	5746901 A	26-11-2001
			BR	0110898 A	11-03-2003
			CA	2407621 A1	22-11-2001
			CN	1429096 T	09-07-2003
			EP	1283695 A2	19-02-2003
			JP	2003533457 T	11-11-2003
			WO	0187252 A2	22-11-2001