

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

(19) World Intellectual Property Organization
International Bureau



(43) International Publication Date
27 July 2000 (27.07.2000)

PCT

(10) International Publication Number
WO 00/043473 A3

- (51) International Patent Classification⁷: C11D 1/22
- (21) International Application Number: PCT/US99/29717
- (22) International Filing Date:
15 December 1999 (15.12.1999)
- (25) Filing Language: English
- (26) Publication Language: English
- (30) Priority Data:
60/116,497 20 January 1999 (20.01.1999) US
- (71) Applicant (for all designated States except US): **THE PROCTER & GAMBLE COMPANY** [US/US]; One Procter & Gamble Plaza, Cincinnati, OH 45202 (US).
- (72) Inventors; and
- (75) Inventors/Applicants (for US only): **KOTT, Kevin, Lee** [US/US]; 2920 Bentbrook Drive, Cincinnati, OH 45251 (US). **SCHEIBEL, Jeffrey, John** [US/US]; 6651 Miami Trails Drive, Loveland, OH 45140 (US). **SEVERSON, Roland, George** [US/US]; 10184 Amberwood Court, Cincinnati, OH 45241 (US). **CRIFE, Thomas, Anthony** [US/US]; 599 Three Chimneys Lane, Loveland, OH 45140 (US). **BURCKETT-ST.LAURENT, James, C., T., R.** [GB/US]; 11477 Gideon Lane, Cincinnati, OH 45249 (US). **WATSON, Randall, Alan** [US/BE]; Snijdersdreef 3, B-3090 Overijse (BE). **GARCIA, Raquel, Lopez** [ES/ES]; San Pelayo 38, 4, E-36680 A Estrada (Pontevedra) (ES).
- (74) Agents: **REED, T., David** et al.; The Procter & Gamble Company, 5299 Spring Grove Avenue, Cincinnati, OH 45217-1087 (US).
- (81) Designated States (national): AE, AL, AM, AT, AT (utility model), AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CR, CU, CZ, CZ (utility model), DE, DE (utility model), DK, DK (utility model), DM, EE, EE (utility model), ES, FI, FI (utility model), 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, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SK (utility model), SL, TJ, TM, TR, TT, UA, UG, US, UZ, VN, YU, ZA, ZW.
- (84) Designated States (regional): ARIPO patent (GH, GM, KE, LS, MW, SD, SL, SZ, TZ, UG, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG).
- Published:
— with international search report
- (88) Date of publication of the international search report:
3 October 2002
- 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.

(54) Title: AQUEOUS HEAVY DUTY LIQUID DETERGENT COMPOSITIONS COMPRISING MODIFIED ALKYLBENZENE SULFONATES

(57) Abstract: The present invention relates to aqueous based heavy-duty liquid detergent compositions containing a modified alkylbenzene sulfonate surfactant (MABS), a co-surfactant (alkyl polyhydroxy fatty acid amide and/or alkyl amidopropyldimethyl amine) and an aqueous liquid carrier. The MABS comprise a mixture of specific branched and non-branched alkylbenzene sulfonate compounds, which are further characterised by a 2/3-phenyl index of 275-10000.



WO 00/043473 A3

INTERNATIONAL SEARCH REPORT

International Application No
PCT/US 99/29717

A. CLASSIFICATION OF SUBJECT MATTER
IPC 7 C11D1/22

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 C11D

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, WPI Data, PAJ

| C. DOCUMENTS CONSIDERED TO BE RELEVANT | | |
|--|---|--------------------------------------|
| Category ° | Citation of document, with indication, where appropriate, of the relevant passages | Relevant to claim No. |
| E | WO 00 12451 A (PROCTER & GAMBLE) 9 March 2000 (2000-03-09) page 26, paragraphs 2,3 examples 1,3,5,8 --- | 1-12, 16-22, 24-27 |
| P,X | WO 99 07656 A (PROCTER & GAMBLE) 18 February 1999 (1999-02-18) page 19, paragraph 4 -page 20, paragraph 5 page 22, paragraph 4 -page 23, paragraph 1 page 34, paragraph 3 -page 45, paragraph 4 examples 1-5,8 claims 1-21 --- | 1-12,16, 19-22, 24-27 17,18 |
| A | --- | -/-- |

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

11 April 2000

Date of mailing of the international search report

04.05.00

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) 340-3016

Authorized officer

Bertran Nadal, J

INTERNATIONAL SEARCH REPORT

International Application No
PCT/US 99/29717

| C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT | | |
|--|--|--------------------------|
| Category ° | Citation of document, with indication, where appropriate, of the relevant passages | Relevant to claim No. |
| P,X | WO 99 05244 A (PROCTER & GAMBLE) 4 February 1999 (1999-02-04) page 8, paragraph 6 -page 19, paragraph 2 example 11 claims 1-9 --- | 1-12, 16-22, 24-27 |
| A | EP 0 615 968 A (UOP INC) 21 September 1994 (1994-09-21) page 6, line 12 -page 7, line 39 claim 6 ----- | 1-12, 16-19 |

INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No

PCT/US 99/29717

| Patent document cited in search report | Publication date | Patent family member(s) | Publication date |
|--|------------------|-------------------------|------------------|
| WO 0012451 A | 09-03-2000 | AU 5907099 A | 21-03-2000 |
| WO 9907656 A | 18-02-1999 | AU 8771998 A | 01-03-1999 |
| | | BR 9811870 A | 15-08-2000 |
| | | CN 1272838 T | 08-11-2000 |
| | | EP 1027312 A | 16-08-2000 |
| WO 9905244 A | 04-02-1999 | AU 8124998 A | 16-02-1999 |
| | | CN 1270622 T | 18-10-2000 |
| | | EP 1002031 A | 24-05-2000 |
| | | ZA 9806447 A | 21-01-1999 |
| EP 0615968 A | 21-09-1994 | AU 658272 B | 06-04-1995 |
| | | CA 2091855 A | 18-09-1994 |
| | | JP 2055238 C | 23-05-1996 |
| | | JP 6271485 A | 27-09-1994 |
| | | JP 7084396 B | 13-09-1995 |
| | | US 5196574 A | 23-03-1993 |
| | | US 5344997 A | 06-09-1994 |
| | | ZA 9301946 A | 06-10-1993 |
| | | AT 165804 T | 15-05-1998 |
| | | AU 3529893 A | 29-09-1994 |
| | | DE 69318393 D | 10-06-1998 |
| | | DE 69318393 T | 03-09-1998 |
| | | ES 2115015 T | 16-06-1998 |
| | | DK 653179 T | 09-02-1998 |