PCT

WORLD INTELLECTUAL PROPERTY ORGANIZATION International Bureau



INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

US

US

(51) International Patent Classification 6: A61K 7/48, B32B 15/08, B65D 65/40, A61K 7/00

(11) International Publication Number:

WO 97/31620

(43) International Publication Date:

PA 18901 (US).

4 September 1997 (04.09.97)

(21) International Application Number:

PCT/US97/03169

(22) International Filing Date:

28 February 1997 (28.02.97)

(30) Priority Data:

08/609,588 Not furnished 1 March 1996 (01.03.96)

27 February 1997 (27.02.97)

(74) Agents: CIAMPORCERO, Audley, A., Jr. et al.; Johnson & Johnson, One Johnson & Johnson Plaza, New Brunswick, NJ 08933-7003 (US).

A. [US/US]; 29 Mosle Road, Gladstone, NJ 07934 (US).

HAMADA, Sachio [JP/FR]; 35, rue Croix-de-Fer, F-78100 Saint-Germain (FR). COLE, Curtis, A. [US/US]; 215 Hamp-

ton Drive, Langhorne, PA 19047 (US). WISNIEWSKI, Stephen, J. [US/US]; 6280 Point Pleasant Pike, Doylestown,

(71) Applicant (for all designated States except US): JOHNSON & JOHNSON CONSUMER PRODUCTS, INC. [US/US]; Grandview Road, Skillman, NJ 08558 (US).

(72) Inventors; and

(75) Inventors, and
(75) Inventors/Applicants (for US only): LIU, Jue-Chen [US/US];
29 Vanbolton Road, Neshanic, NJ 08853 (US). WANG,
Jonas, C., T. [US/US];
23 Ellsworth Drive, Robbinsville,
NJ 08691 (US). YUSUF, Mohammed [US/US];
10 Sandalwood Drive, Edison, NJ 08820 (US). YAMAMOTO,
Norihiro [IP/IP];
2-3, Kurume 5-chome, Koriyama-shi,
Fukushima-ken 962 (IP). KAZAMA, Satoshi [IP/IP];
1, Meotozaka, Ohkanbara, Sukagawa-shi, Fukushima-ken 962
(IP). STAHL, Christopher, R. [US/US];
5440 Weset 123
Street, Hawthome, CA 90250 (US). MATHER, Kamran [US/US];
29679 Quail Run Drive, Agoura Hills, CA 91301
(US). HOLLAND, Jean, P. [US/US];
2559 Red Gate Drive,
Doylestown, PA 18901-1778 (US). ALELES, Margaret,

(81) Designated States: AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GE, HU, IL, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, TJ, TM, TR, TT, UA, UG, US, UZ, VN, ARIPO patent (GH, KE, LS, MW, SD, SZ, UG), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, 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 the receipt of amendments.

(88) Date of publication of the international search report: 8 January 1998 (08.01.98)

(54) Title: TOPICAL COMPOSITIONS COMPRISING AN OIL-IN-WATER EMULSION AND A RETINOID

(57) Abstract

Skin care compositions comprising an oil-in-water emulsion base containing retinoids and possessing good physical and chemical stability, comprising a stabilizing system selected from the group consisting of: a) at least one oil-soluble antioxydant; b) a chelating agent and at least one oil-soluble antioxydant; c) a chelating agent; and d) a chelating agent and an antioxydant present in each of the oil and water phases of said emulsion.

FOR THE PURPOSES OF INFORMATION ONLY

Codes used to identify States party to the PCT on the front pages of pamphlets publishing international applications under the PCT.

AM	Armenia	GB	United Kingdom	MW	Malawi
AT	Austria	GE	Georgia	MX	Mexico
AU	Australia	GN	Guinea	NE	Niger
BB	Barbados	GR	Greece	NL	Netherlands
BE	Belgium	HU	Hungary	NO	Norway
BF	Burkina Faso	ΙE	Ireland	NZ	New Zealand
BG	Bulgaria	IT	Italy	PL	Poland
BJ	Benin	JP	Japan	PT	Portugai
BR	Brazil	KE	Kenya	RO	Romania
BY	Belarus	KG	Kyrgystan	RU	Russian Federation
CA	Canada	KP	Democratic People's Republic	SD	Sudan
CF	Central African Republic		of Korea	SE	Sweden
CG	Congo	KR	Republic of Korea	SG	Singapore
CH	Switzerland	KZ	Kazakhstan	SI	Slovenia
CI	Côte d'Ivoire	LI	Liechtenstein	SK	Slovakia
CM	Cameroon	LK	Sri Lanka	SN	Senegal
CN	China	LR	Liberia	SZ	Swaziland
CS	Czechoslovakia	LT	Lithuania	TD	Chad
CZ	Czech Republic	LU	Luxembourg	TG	Togo
DE	Germany	LV	Latvia	TJ	Tajikistan
DK	Denmark	MC	Monaco	TT	Trinidad and Tobago
EE	Estonia	MD	Republic of Moldova	UA	Ukraine
ES	Spain	MG	Madagascar	UG	Uganda
FI	Finland	ML	Mali	US	United States of America
FR	France	MN	Mongolia	UZ	Uzbekistan
GA	Gabon	MR	Mauritania	VN	Viet Nam

Inten Inal Application No PCT/US 97/03169

A. CLASSIFICATION OF SUBJECT MATTER IPC 6 A61K7/48 B32B A61K7/00 B65D65/40 B32B15/08 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) A61K B32B B65D IPC 6 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) C. DOCUMENTS CONSIDERED TO BE RELEVANT Relevant to claim No. Citation of document, with indication, where appropriate, of the relevant passages Category ° WO 95 25507 A (PIERRE FABRE DERMO 1 Χ COSMETIQUE ; COUVAL EMMANUELLE (FR); PEYROT NICO) 28 September 1995 see page 2, line 26 - page 3, line 10 see page 3, line 34 - line 37; tables 1,2 53 Υ EP 0 343 444 A (BAYER AG) 29 November 1989 1 Х cited in the application see page 2, line 32 - line 40 EP 0 330 496 A (BEECHAM GROUP PLC) 30 1,44,53 Х August 1989 cited in the application see column 1, line 33 - column 2, line 6 see column 3, line 2 - line 6 see column 3, line 19 - line 32 -/--Patent family members are listed in annex. lx I Further documents are listed in the continuation of box C. Special categories of cited documents: "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 "A" document defining the general state of the art which is not considered to be of particular relevance invention "E" earlier document but published on or after the international "X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to 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) 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 docu *O* document referring to an oral disclosure, use, exhibition or ments, such combination being obvious to a person skilled in the art. *P* document published prior to the international filing date but later than the priority date claimed "&" document member of the same patent family Date of mailing of the international search report Date of the actual completion of the international search 20.11.97 30 October 1997 Authorized officer Name and mailing address of the ISA European Patent Office, P.B. 5818 Patentiaan 2 NL - 2280 HV Rijswijk Tel. (+31-70) 340-2040, Tx. 31 651 epo nl, McConnell, C Fax: (+31-70) 340-3016

3

Inters Unal Application No PCT/US 97/03169

ent, with indication, where appropriate, of the relevant passages 6 106 A (JOHNSON & JOHNSON R) 9 March 1994 e 4, line 50 - page 6, line 45; 1 1 772 A (JOHNSON & JOHNSON R) 4 January 1995 e 3, line 5 - page 4, line 46 3 515 A (CLARINS) 5 January 1990 ims 1,10 5 586 A (FLOM MERLYN G) 17 June umn 2, line 60 - column 3, line 3; 1 1217 A (HANDELMAN JOSEPH H ;BOXALL LEFRED (GB); AMERY GEOFFREY WILFR) ember 1994 ie 3, line 20 - page 4, line 32 17396 A (JOHNSON & JOHNSON CONSUMER ON & JOHNSON MEDICAL K K (JP); LI) ich 1996	1 44 45-49 53 2,6-10, 12-16, 37,38 2,3,7, 34,35
R) 9 March 1994 e 4, line 50 - page 6, line 45; 1 1 772 A (JOHNSON & JOHNSON R) 4 January 1995 e 3, line 5 - page 4, line 46 3 515 A (CLARINS) 5 January 1990 ims 1,10 5 586 A (FLOM MERLYN G) 17 June umn 2, line 60 - column 3, line 3; 1 1217 A (HANDELMAN JOSEPH H ;BOXALL LFRED (GB); AMERY GEOFFREY WILFR) ember 1994 e 3, line 20 - page 4, line 32 17396 A (JOHNSON & JOHNSON CONSUMER NN & JOHNSON MEDICAL K K (JP); LI)	44 45-49 53 2,6-10, 12-16, 37,38 2,3,7, 34,35
R) 4 January 1995 e 3, line 5 - page 4, line 46 3 515 A (CLARINS) 5 January 1990 ims 1,10 5 586 A (FLOM MERLYN G) 17 June umn 2, line 60 - column 3, line 3; 1 1217 A (HANDELMAN JOSEPH H ;BOXALL LFRED (GB); AMERY GEOFFREY WILFR) ember 1994 e 3, line 20 - page 4, line 32 17396 A (JOHNSON & JOHNSON CONSUMER on & JOHNSON MEDICAL K K (JP); LI)	45-49 53 2,6-10, 12-16, 37,38 2,3,7, 34,35
ims 1,10 5 586 A (FLOM MERLYN G) 17 June umn 2, line 60 - column 3, line 3; 1 1217 A (HANDELMAN JOSEPH H ;BOXALL LFRED (GB); AMERY GEOFFREY WILFR) ember 1994 12 3, line 20 - page 4, line 32 17396 A (JOHNSON & JOHNSON CONSUMER ON & JOHNSON MEDICAL K K (JP); LI)	53 2,6-10, 12-16, 37,38 2,3,7, 34,35
ims 1,10 5 586 A (FLOM MERLYN G) 17 June umn 2, line 60 - column 3, line 3; 1 1217 A (HANDELMAN JOSEPH H ;BOXALL LFRED (GB); AMERY GEOFFREY WILFR) ember 1994 e 3, line 20 - page 4, line 32 17396 A (JOHNSON & JOHNSON CONSUMER N & JOHNSON MEDICAL K K (JP); LI)	12-16, 37,38 2,3,7, 34,35
5 586 A (FLOM MERLYN G) 17 June umn 2, line 60 - column 3, line 3; 1 1217 A (HANDELMAN JOSEPH H ;BOXALL LEFRED (GB); AMERY GEOFFREY WILFR) ember 1994 e 3, line 20 - page 4, line 32 17396 A (JOHNSON & JOHNSON CONSUMER NN & JOHNSON MEDICAL K K (JP); LI)	2,3,8
umn 2, line 60 - column 3, line 3; 1 1217 A (HANDELMAN JOSEPH H ;BOXALL LIFRED (GB); AMERY GEOFFREY WILFR) ember 1994 ee 3, line 20 - page 4, line 32 17396 A (JOHNSON & JOHNSON CONSUMER ON & JOHNSON MEDICAL K K (JP); LI)	2,3,8
1 1217 A (HANDELMAN JOSEPH H ;BOXALL LFRED (GB); AMERY GEOFFREY WILFR) ember 1994 e 3, line 20 - page 4, line 32 17396 A (JOHNSON & JOHNSON CONSUMER N & JOHNSON MEDICAL K K (JP); LI)	
LEFRED (GB); AMERY GEOFFREY WILFR) ember 1994 e 3, line 20 - page 4, line 32 7396 A (JOHNSON & JOHNSON CONSUMER N & JOHNSON MEDICAL K K (JP); LI)	
N & JOHNSON MEDICAL K K (JP); LI)	1,39
ims 1,42-54	
.4 595 A (L'OREAL) 7 July 1995 lims 1,30,31 ge 9, line 6 - line 11	39
14 April 1994 ge 7, line 9 – line 21 ge 10, line 23 – line 24 ge 11, line 32 – line 35	40,44,45
	46-49
39 in the application lumn 1, line 57 - column 2, line 6	40
	aims 1,30,31 ge 9, line 6 - line 11 07478 A (UPJOHN CO; PENA LORRAINE E 14 April 1994 ge 7, line 9 - line 21 ge 10, line 23 - line 24 ge 11, line 32 - line 35 ge 12, line 6 - line 17; claims 26 828 A (WILMOTT JAMES M ET AL) 2 89 in the application lumn 1, line 57 - column 2, line 6/

Interi Inal Application No
PCT/US 97/03169

ition) DOCUMENTS CONSIDERED TO BE RELEVANT	
Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
US 5 391 373 A (MAUSNER JACK) 21 February 1995 see column 1, line 23 - line 42 see column 2, line 26 - line 28 see column 2, line 43 see column 3, line 17 - line 22 see column 3, line 34	40,44-49
WO 93 00085 A (JOHNSON & JOHNSON CONSUMER) 7 January 1993 see claims	1
US 4 333 924 A (BOWLEY INEZ ET AL) 8 June 1982 see the whole document	1
EP 0 608 433 A (SHISEIDO CO LTD) 3 August 1994 see page 9, line 25 - line 57	1
EP 0 440 398 A (JOHNSON & JOHNSON CONSUMER) 7 August 1991 see page 2, line 54 - page 4, line 31; example 2	1
DE 29 20 456 A (SCHOLLE CORP) 6 December 1979 see page 8, line 1 - line 12; claims 1-7	39
FR 2 732 595 A (L'OREAL) 11 October 1996 see page 4, line 27 - line 45; claim 20	51,53
GB 2 304 573 A (FERNSOFT) 26 March 1997 see page 23, line 3 - page 4, line 9	2,3,7, 21,34, 35,37,38
	US 5 391 373 A (MAUSNER JACK) 21 February 1995 see column 1, line 23 - line 42 see column 2, line 26 - line 28 see column 3, line 43 see column 3, line 17 - line 22 see column 3, line 34 WO 93 00085 A (JOHNSON & JOHNSON CONSUMER) 7 January 1993 see claims US 4 333 924 A (BOWLEY INEZ ET AL) 8 June 1982 see the whole document EP 0 608 433 A (SHISEIDO CO LTD) 3 August 1994 see page 9, line 25 - line 57 EP 0 440 398 A (JOHNSON & JOHNSON CONSUMER) 7 August 1991 see page 2, line 54 - page 4, line 31; example 2 DE 29 20 456 A (SCHOLLE CORP) 6 December 1979 see page 8, line 1 - line 12; claims 1-7 FR 2 732 595 A (L'OREAL) 11 October 1996 see page 4, line 27 - line 45; claim 20

Inter nal application No.

PCT/US 97/03169

Boxi	Observations where certain claims were found unsearchable (Continuation of item 1 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.: 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:				
3.	Claims Nos.: because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).				
Box II	Observations where unity of invention is lacking (Continuation of Item 2 of first sheet)				
This Inte	ernational Searching Authority found multiple inventions in this international application, as follows:				
2)	CLAIMS 1,51,53 CLAIMS 2-38, 52,54 CLAIM 39 CLAIMS 40-50				
1. X	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.:				
Rema	The additional search fees were accompanied by the applicant's protest. X No protest accompanied the payment of additional search fees.				

INTERNATIONAL SEARCH REPORT Information on patent family members

Inter. anal Application No PCT/US 97/03169

			
Patent document cited in search repor	Publication t date	Patent family member(s)	Publication date
WO 9525507	A 28-09-95	FR 2717686 A AU 2140895 A CA 2186133 A EP 0751764 A	29-09-95 09-10-95 28-09-95 08-01-97
EP 0343444	A 29-11-89	DE 3817623 A	30-11-89
EP 0330496	A 30-08-89	AU 3072989 A DE 68909970 D DE 68909970 T DK 90089 A ES 2059721 T JP 2059518 A	31-08-89 25-11-93 10-02-94 26-08-89 16-11-94 28-02-90
EP 0586106	A 09-03-94	AT 147965 T AU 4444893 A BR 9303269 A CA 2101101 A DE 69307634 D DE 69307634 T GR 93100292 A JP 7291847 A MX 9304777 A US 5583136 A	15-02-97 10-02-94 08-03-94 07-02-94 06-03-97 05-06-97 29-04-94 07-11-95 31-05-94 10-12-96
EP 0631772	A 04-01-95	US 5646186 A AU 6333794 A BR 9402089 A CA 2124531 A JP 7048243 A ZA 9403700 A	08-07-97 01-12-94 13-12-94 28-11-94 21-02-95 27-11-95
FR 2633515	A 05-01-90	NONE	
US 4595586	A 17-06-86	AU 579458 B AU 5499686 A JP 62051608 A	24-11-88 12-03-87 06-03-87
WO 9421217	A 29-09-94	WO 9421216 A AU 3931093 A	29-09-94 11-10-94

INTERNATIONAL SEARCH REPORT Information on patent family members

Inter. unal Application No PCT/US 97/03169

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
WO 9421217 A		AU 4524393 A CA 2158041 A EP 0689416 A JP 8507785 T NO 953580 A PL 310679 A	11-10-94 29-09-94 03-01-96 20-08-96 11-09-95 27-12-95
WO 9607396 A	14-03-96	AU 3633295 A JP 8193019 A	27-03-96 30-07-96
FR 2714595 A	07-07-95	BR 9405480 A CA 2138112 A EP 0666076 A HU 73060 A JP 8000986 A PL 306580 A US 5656672 A	19-09-95 01-07-95 09-08-95 28-06-96 09-01-96 10-07-95 12-08-97
WO 9407478 A	14-04-94	AU 5294393 A	26-04-94
US 4826828 A	02-05-89	AU 5772686 A CA 1277241 A DE 3684417 A EP 0224504 A JP 62502546 T WO 8606275 A	18-11-86 04-12-90 23-04-92 10-06-87 01-10-87 06-11-86
US 5391373 A	21-02-95	NONE	
WO 9300085 A	07-01-93	AU 664973 B AU 8299791 A BR 9106891 A CA 2090104 A EG 19852 A EP 0549592 A JP 6500079 T MX 9100278 A NZ 239051 A US 5559149 A US 5583136 A	14-12-95 25-01-93 14-06-94 28-12-92 31-03-96 07-07-93 06-01-94 01-01-93 27-02-96 24-09-96 10-12-96

Information on patent family members

Inters and Application No
PCT/US 97/03169

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
WO 9300085 A		US 5652263 A	29-07-97
US 4333924 A	08-06-82	NONE	
EP 0608433 A	03-08-94	JP 6024958 A JP 6032729 A JP 6032710 A JP 6032711 A JP 6032712 A JP 6032713 A JP 6032715 A JP 6032716 A JP 6032717 A JP 6032718 A JP 6032719 A JP 6032720 A JP 6032721 A US 5484816 A WO 9401074 A	01-02-94 08-02-94 08-02-94 08-02-94 08-02-94 08-02-94 08-02-94 08-02-94 08-02-94 08-02-94 08-02-94 08-02-94 08-02-94 08-02-94 08-02-94 08-02-94
EP 0440398 A	07-08-91	AU 639063 B AU 6997291 A CA 2035086 A DE 69100848 D DE 69100848 T ES 2048557 T HK 94994 A JP 4210902 A SG 77794 A US 5559149 A US 5583136 A US 5652263 A	15-07-93 01-08-91 30-07-91 10-02-94 11-05-94 16-03-94 16-09-94 03-08-92 14-10-94 24-09-96 10-12-96 29-07-97
DE 2920456 A	06-12-79	US 4224367 A JP 54159096 A	23-09-80 15-12-79
FR 2732595 A	11-10-96	NONE	
GB 2304573 A	26-03-97	NONE	