PCT

WORLD INTELLECTUAL PROPERTY ORGANIZATION International Bureau



INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(51) International Patent Classification ⁶ :		(11) International Publication Number:	WO 98/18892
C11D 3/37, 1/83	A3	(43) International Publication Date:	7 May 1998 (07.05.98)
 (21) International Application Number: PCT/US (22) International Filing Date: 29 September 1997 ((30) Priority Data: 08/738,154 25 October 1996 (25.10.96) (71) Applicant: E.I. DU PONT DE NEMOURS AND CO [US/US]; 1007 Market Street, Wilmington, DE 1980 (72) Inventor: DEL PESCO, Thomas, Wayne; 344 Skyling Drive, Hockessin, DE 19707 (US). (74) Agent: MEDWICK, George, M.; E.I. du Pont de Nem Company, Legal Patent Records Center, 1007 Mark Wilmington, DE 19898 (US). 	29.09.9 U DMPAN 898 (US e Orcha	(81) Designated States: AU, BR, CA, JI (AT, BE, CH, DE, DK, ES, FI, F MC, NL, PT, SE). Published With international search report. Before the expiration of the time limit and to be republished in the event of the control of the internation and to be an accordance of the internation of the internation and the control of the internation of the internation and the control of the internation of the internation and the control of the internation of the internation and the control of the internation of the internation and the control of the internation of the internation and the control of the internation of the internation and the control of the internation of the internation and the control of the internation of the internation and the control of the internation of the internation and the control of the internation of the internation of the internation and the control of the internation of the internation and the control of the internation of the int	P, MX, European patent FR, GB, GR, IE, IT, LU, t for amending the claims the receipt of amendments.
(54) Title: CLEANING FORMULATION FOR FABRIC	ATED	YARN PRODUCTS	

(57) Abstract

A cleaning formulation for a fabricated yarn product such as a carpet comprises: a styrene maleic anhydride polymer stain resist agent; an anionic surfactant; a mixed alkyl ethoxylated (C10–C16) nonionic surfactant having a hydrophile lipophile balance in the range of about 10.5 to about fifteen; and a fluorosurfactant. A fluorochemical soil resist agent may be optionally included. The cleaning formulation may be made in dilute or concentrate form.

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.

AL	Albania	ES	Spain	LS	Lesotho	SI	Slovenia
AM	Armenia	FI	Finland	LT	Lithuania	SK	Slovakia
AT	Austria	FR	France	LU	Luxembourg	SN	Senegal
ΑU	Australia	GA	Gabon	LV	Latvia	SZ	Swaziland
ΑZ	Azerbaijan	GB	United Kingdom	MC	Monaco	TD	Chad
BA	Bosnia and Herzegovina	GE	Georgia	MD	Republic of Moldova	TG	Togo
BB	Barbados	GH	Ghana	MG	Madagascar	ТJ	Tajikistan
BE	Belgium	GN	Guinea	MK	The former Yugoslav	TM	Turkmenistan
BF	Burkina Faso	GR	Greece		Republic of Macedonia	TR	Turkey
BG	Bulgaria	HU	Hungary	ML	Mali	TT	Trinidad and Tobago
ВJ	Benin	IE	Ireland	MN	Mongolia	UA	Ukraine
BR	Brazil	IL	Israel	MR	Mauritania	UG	Uganda
BY	Belarus	IS	Iceland	MW	Malawi	US	United States of America
CA	Canada	IT	Italy	MX	Mexico	$\mathbf{U}\mathbf{Z}$	Uzbekistan
CF	Central African Republic	JP	Japan	NE	Niger	VN	Viet Nam
CG	Congo	KE	Kenya	NL	Netherlands	YU	Yugoslavia
CH	Switzerland	KG	Kyrgyzstan	NO	Norway	$\mathbf{z}\mathbf{w}$	Zimbabwe
CI	Côte d'Ivoire	KP	Democratic People's	NZ	New Zealand		
CM	Cameroon		Republic of Korea	\mathbf{PL}	Poland		
CN	China	KR	Republic of Korea	PT	Portugal		
CU	Cuba	KZ	Kazakstan	RO	Romania		
CZ	Czech Republic	LC	Saint Lucia	RU	Russian Federation		
DE	Germany	LI	Liechtenstein	SD	Sudan		
DK	Denmark	LK	Sri Lanka	SE	Sweden		
EE	Estonia	LR	Liberia	$\mathbf{s}\mathbf{G}$	Singapore		

Interminational Application No PCT/US 97/17583

CLASSIFICATION OF SUBJECT MATTER PC 6 C11D3/37 C11D C11D1/83 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 6 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) C. DOCUMENTS CONSIDERED TO BE RELEVANT Relevant to claim No. Citation of document, with indication, where appropriate, of the relevant passages EP 0 648 834 A (EASTMAN KODAK COMPANY) 19 1 - 15Α April 1995 see page 4 - page 6 1-3,7,8,WO 95 34631 A (S. C. JHONSON & SON, INC.) Α 13 - 1521 December 1995 see abstract see examples see claims 1-3,7,8,US 5 534 167 A (F. L. BILLMAN) 9 July 1996 Α 13 - 15see column 3, line 38 - line 54 see column 4, line 52 - column 7, line 34 see examples -/--Patent family members are listed in annex. Further documents are listed in the continuation of box C. X 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 involve an inventive step when the document is taken alone filing date "L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another "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 docucitation or other special reason (as specified) "O" document referring to an oral disclosure, use, exhibition or ments, such combination being obvious to a person skilled 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 theinternational search 11 May 1998 25/05/1998 Authorized officer 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, Ketterer, M Fax: (+31-70) 340-3016

1

Inte Tonal Application No
PCT/US 97/17583

C (Continu	ation) DOCUMENTS CONSIDERED TO BE RELEVANT	/05 9//1/503
Category	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	US 4 145 303 A (B. L. LOUDAS) 20 March 1979 see abstract see tables	1-15
Α	US 5 338 475 A (COREY ET. AL.) 16 August 1994 see abstract see column 1, line 45 - column 2, line 66	1,4,8,14
A	NL 6 900 307 A (THE PROCTER & GAMBLE COMPANY) 27 October 1969 see examples I,II	1,8,14
А	US 5 073 442 A (B. R. KNOWLTON ET. AL.) 17 December 1991 see column 1	1,2,15

Information on patent family members

Inte ional Application No
PCT/US 97/17583

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
EP 648834 A	19-04-95	US 5439610 A AU 675350 B AU 7586594 A CA 2132894 A	08-08-95 30-01-97 11-05-95 20-04-95
WO 9534631 A	21-12-95	AU 2772995 A EP 0766728 A JP 10501845 T NZ 288489 A US 5534167 A ZA 9504889 A	05-01-96 09-04-97 17-02-98 22-08-97 09-07-96 30-01-96
US 5534167 A	09-07-96	AU 2772995 A EP 0766728 A JP 10501845 T NZ 288489 A WO 9534631 A ZA 9504889 A	05-01-96 09-04-97 17-02-98 22-08-97 21-12-95 30-01-96
US 4145303 A	20-03-79	US 3901727 A BE 780315 A CA 995411 A CH 540382 A DE 2211623 A DK 143763 B FR 2128692 A GB 1388871 A GB 1388872 A NL 7202574 A,B, SE 411361 B ZA 7201516 A	26-08-75 07-09-72 24-08-76 28-09-73 28-09-72 05-10-81 20-10-72 26-03-75 26-03-75 12-09-72 17-12-79 29-11-72
US 5338475 A	16-08-94	NONE	
NL 6900307 A	27-10-69	NONE	
US 5073442 A	17-12-91	CA 1327856 A BE 1007018 A DE 4138382 A FR 2683836 A	15-03-94 21-02-95 27-05-93 21-05-93

information on patent family members

Inter onal Application No PCT/US 97/17583

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
US 5073442 A		GB 2260994 A,B GB 2260995 A,B	05-05-93 05-05-93