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(54) Title: SOIL RELEASE AGENT

(57) Abstract: The invention relates to a soil release agent comprising a multi-branched soil release/wetting agent having an oxygen-containing polyfunctional base compound and at least two surfactant branches attached thereto, wherein each surfactant branch includes at least one hydrophilic and at least one hydrophobic constituent and a polyester release agent in an aqueous solution.



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INTERNATIONAL SEARCH REPORT

International application No
PCT/US2006/046872

A. CLASSIFICATION OF SUBJECT MATTER
 INV. C11D3/00 C11D3/16 C11D3/37 C11D1/82

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)
 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

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	WO 01/88075 A (UNILEVER PLC [GB]; UNILEVER NV [NL]; LEVER HINDUSTAN LTD [IN]) 22 November 2001 (2001-11-22) claims 1-27; table 1	1-9, 20
Y	GB 2 322 137 A (UNILEVER PLC [GB]) 19 August 1998 (1998-08-19) claims 1-6	1-9, 20
Y	US 4 785 060 A (NAGLER MESHULAM [US]) 15 November 1988 (1988-11-15) cited in the application claims 1-5	1-9, 20
Y	US 6 579 837 B1 (FLEURY ETIENNE [FR] ET AL) 17 June 2003 (2003-06-17) cited in the application claims 1-17	1-9, 20
	-/--	

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 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 6 July 2007	Date of mailing of the international search report 12/07/2007
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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 Richards, Michael
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International application No

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C(Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	US 4 116 885 A (DERSTADT DONNA M ET AL) 26 September 1978 (1978-09-26) cited in the application claims 1-23	1-9, 20
X	EP 1 095 959 A (SHINETSU CHEMICAL CO [JP]) 2 May 2001 (2001-05-02) claim 1	10
A	FR 2 824 841 A1 (RHONE POULENC CHIMIE [FR]) 22 November 2002 (2002-11-22) claims 1-18	10-19
A	US 2003/144169 A1 (DUPONT JEFFREY SCOTT [US] ET AL) 31 July 2003 (2003-07-31) claims 1-23	10-19
A	WO 03/020770 A (UNILEVER PLC [GB]; UNILEVER NV [NL]; LEVER HINDUSTAN LTD [IN]) 13 March 2003 (2003-03-13) claims 1-21	10-19
A	WO 03/020819 A (UNILEVER PLC [GB]; UNILEVER NV [NL]; LEVER HINDUSTAN LTD [IN]) 13 March 2003 (2003-03-13) claims 1-30	10-19
A	US 6 398 911 B1 (SCHROEDER WEN ZYO [US] ET AL) 4 June 2002 (2002-06-04) claims 1-5	10-19

INTERNATIONAL SEARCH REPORT

International application No.
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Box 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.:
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 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:

see additional sheet

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.

No protest accompanied the payment of additional search fees.

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

This International Searching Authority found multiple (groups of) inventions in this international application, as follows:

1. claims: 1-9,20

A soil release agent according to claim 1, process of applying a soil release fabric conditioner according to claim 6 or 7, method of making a soil and wrinkle resistant fabric according to claim 8, a fabric treated with the soil release agent according to claim 9 and a process of applying a soil release agent according to claim 20.

2. claims: 10-19

A soil release agent comprising a polypodand according to claim 10, process of applying soil release agent according to claim 13 or 14, a fabric treated with the soil release agent according to claim 15 or 16.

INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No

PCT/US2006/046872

Patent document cited in search report	Publication date	Patent family member(s)	Publication date	
WO 0188075	A	22-11-2001	AR 028088 A1	23-04-2003
			AT 300598 T	15-08-2005
			AU 6388201 A	26-11-2001
			BR 0110718 A	18-03-2003
			CN 1440450 A	03-09-2003
			DE 60112275 D1	01-09-2005
			DE 60112275 T2	12-01-2006
			EP 1280879 A1	05-02-2003
			ES 2244624 T3	16-12-2005
			US 2002016282 A1	07-02-2002
			GB 2322137	A
US 4785060	A	15-11-1988	AR 242229 A1	31-03-1993
			AU 604736 B2	03-01-1991
			AU 7663687 A	03-03-1988
			BE 1000840 A3	18-04-1989
			BR 8704399 A	19-04-1988
			CA 1317186 C	04-05-1993
			DE 3727727 A1	03-03-1988
			DK 408287 A	01-03-1988
			FR 2603298 A1	04-03-1988
			GB 2196013 A	20-04-1988
			GR 871296 A1	11-01-1988
			HK 101093 A	08-10-1993
			IT 1211741 B	03-11-1989
			JP 63068696 A	28-03-1988
			NZ 221339 A	29-08-1989
SE 8703299 A	01-03-1988			
ZA 8705792 A	29-03-1989			
US 6579837	B1	17-06-2003	AU 4627499 A	07-02-2000
			BR 9912100 A	02-05-2001
			CA 2337815 A1	27-01-2000
			CN 1309688 A	22-08-2001
			EP 1097190 A1	09-05-2001
			FR 2781233 A1	21-01-2000
			WO 0004120 A1	27-01-2000
			JP 2002520477 T	09-07-2002
			US 4116885	A
CA 1113338 A1	01-12-1981			
DE 2857292 A1	28-02-1980			
EP 0001305 A1	04-04-1979			
FR 2426083 A1	14-12-1979			
GB 2041393 A	10-09-1980			
IT 1106027 B	11-11-1985			
JP 54090208 A	17-07-1979			
NL 7815036 A	28-12-1979			
EP 1095959	A	02-05-2001	JP 2001122727 A	08-05-2001
FR 2824841	A1	22-11-2002	NONE	
US 2003144169	A1	31-07-2003	NONE	
WO 03020770	A	13-03-2003	BR 0210991 A	08-06-2004
			CA 2446376 A1	13-03-2003

INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No

PCT/US2006/046872

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
WO 03020770	A	CN 1549827 A	24-11-2004
		EP 1425307 A1	09-06-2004
		US 2003162688 A1	28-08-2003
		ZA 200308597 A	04-11-2004
		ZA 200308702 A	08-11-2004
WO 03020819	A	13-03-2003	
		AT 362959 T	15-06-2007
		AU 2002333460 B2	21-10-2004
		BR 0210309 A	13-07-2004
		CA 2450912 A1	13-03-2003
		CN 1549844 A	24-11-2004
		EP 1432759 A1	30-06-2004
		US 2003119708 A1	26-06-2003
US 6398911	B1	04-06-2002	NONE