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(54) Title: METHOD FOR DEMULSIFYING

(57) Abstract: The invention relates to a method for separating emulsions of oil and water, the method comprising incorporating a demulsifying-effective amount of a silicone demulsifier into an emulsion comprising an oil phase and an aqueous phase, the silicone demulsifier having a molecular structure comprising a polysiloxane backbone of at least two siloxane units covalently bound to (i) one or more alkylene oxide groups comprising one or more alkylene oxide units independently having one to five carbon atoms, and (ii) one or more oxirane-containing and/or oxetane-containing groups, wherein said oxirane or oxetane is optionally ring-opened by reaction with a chemical or group capable of ring-opening an oxirane or oxetane ring, respectively, and wherein a solid filler is substantially excluded from the silicone demulsifier and emulsion. The invention also relates to compositions containing the above-described demulsifier and the water and oil phases of an emulsion.



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A. CLASSIFICATION OF SUBJECT MATTER

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B. FIELDS SEARCHED

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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)

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C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	DE 10 2004 018926 A1 (GOLDSCHMIDT GMBH [DE]) 17 November 2005 (2005-11-17) paragraphs [0001], [0019], [0020], [0034] - [0036]; claims 1-5 -----	1-34
X	EP 0 141 585 A (BRITISH PETROLEUM CO PLC [GB]) 15 May 1985 (1985-05-15) claims 1-10; example 4 -----	1, 3-18, 20-34
X	WO 97/38067 A (WITCO CORP [US]; GRABOWSKI WOJCIECH [CH]; HAUBRICHS ROLF [CH]) 16 October 1997 (1997-10-16) claims 1,2,5-7,10,11,14-18; table 8 ----- -/--	1-4, 8, 11-13, 17-21, 25, 28-30, 34



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PCT/US2007/014490

C(Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	EP 0 427 263 A (DOW CORNING KK [JP]) 15 May 1991 (1991-05-15) page 5; claims 1-3 -----	1,3-8, 11-17
A	US 5 891 977 A (DIETZ THOMAS [DE] ET AL) 6 April 1999 (1999-04-06) claims 1-5,9,14,15,21; example 1 -----	1,3-8, 11-17
A	US 4 427 815 A (ONA ISAO [JP] ET AL) 24 January 1984 (1984-01-24) claims 1,2,5,6; example 1 -----	1-7, 11-17
A	EP 1 010 748 A (CK WITCO CORP [US]) 21 June 2000 (2000-06-21) claims 1-7,10-12,16 -----	1-6,8, 11-17
A	US 5 463 084 A (CRIVELLO JAMES V [US] ET AL) 31 October 1995 (1995-10-31) claim 7 -----	1,9,16, 17
A	US 3 338 867 A (PLUEDDEMANN EDWIN P) 29 August 1967 (1967-08-29) claim 2 -----	1,9,16, 17
A	US 4 184 004 A (CAMPBELL FANNIE L [US] ET AL) 15 January 1980 (1980-01-15) claims 1,3-5,8,9 -----	1,3-7, 11-17
A	WO 03/085015 A (HANSA TEXTILCHEMIE GMBH [DE]; WILL PETER [DE]; KOCH MATTHIAS [DE]; NIC) 16 October 2003 (2003-10-16) claim 1 -----	1,3-8, 11-17

INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No

PCT/US2007/014490

Patent document cited in search report		Publication date	Patent family member(s)	Publication date
DE 102004018926 A1		17-11-2005	NONE	
EP 0141585	A	15-05-1985	AU 565533 B2	17-09-1987
			AU 3446684 A	26-04-1985
			CA 1221602 A1	12-05-1987
			DE 3483776 D1	31-01-1991
			JP 60106506 A	12-06-1985
			NO 844197 A	22-04-1985
			US 4596653 A	24-06-1986
WO 9738067	A	16-10-1997	AT 274566 T	15-09-2004
			AU 2425797 A	29-10-1997
			BR 9708590 A	03-08-1999
			CA 2258708 A1	16-10-1997
			CN 1219951 A	16-06-1999
			DE 69730417 D1	30-09-2004
			DE 69730417 T2	08-09-2005
			EP 0891406 A1	20-01-1999
			JP 3970328 B2	05-09-2007
			JP 2000510507 T	15-08-2000
			KR 20000005233 A	25-01-2000
			MX PA98008121 A	24-08-2004
EP 0427263	A	15-05-1991	AU 637422 B2	27-05-1993
			AU 6584490 A	16-05-1991
			BR 9005669 A	17-09-1991
			CA 2029517 A1	09-05-1991
			DE 69012277 D1	13-10-1994
			DE 69012277 T2	16-02-1995
			ES 2064587 T3	01-02-1995
			JP 2059828 C	10-06-1996
			JP 3151004 A	27-06-1991
			JP 7090128 B	04-10-1995
			US 5556902 A	17-09-1996
US 5891977	A	06-04-1999	AT 199734 T	15-03-2001
			EP 0879840 A2	25-11-1998
			ES 2157624 T3	16-08-2001
			JP 10330489 A	15-12-1998
US 4427815	A	24-01-1984	NONE	
EP 1010748	A	21-06-2000	BR 9915782 A	24-07-2001
			CN 1473878 A	11-02-2004
			CN 1261620 A	02-08-2000
			JP 2000178571 A	27-06-2000
			KR 20000048119 A	25-07-2000
			NO 996180 A	16-06-2000
			SG 85685 A1	15-01-2002
US 5463084	A	31-10-1995	NONE	
US 3338867	A	29-08-1967	AT 248460 B	25-07-1966
			DE 1493592 A1	22-05-1969
			GB 1036077 A	13-07-1966
US 4184004	A	15-01-1980	CA 1129158 A1	10-08-1982

INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No

PCT/US2007/014490

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
WO 03085015	A	16-10-2003	AT 290029 T 15-03-2005
		AU 2003224039 A1 20-10-2003	
		BR 0304719 A 20-07-2004	
		CA 2449955 A1 16-10-2003	
		DE 10214982 A1 18-12-2003	
		EP 1448648 A2 25-08-2004	
		ES 2239306 T3 16-09-2005	
		MX PA03011159 A 28-10-2004	
		US 2004219371 A1 04-11-2004	
