

Europäisches Patentamt European Patent Office Office européen des brevets

(11) **EP 1 160 308 A3**

(12)

EUROPEAN PATENT APPLICATION

- (88) Date of publication A3: **04.12.2002 Bulletin 2002/49**
- (43) Date of publication A2: **05.12.2001 Bulletin 2001/49**
- (21) Application number: 01304807.9
- (22) Date of filing: 31.05.2001

(51) Int Cl.7: **C10M 135/18**, C10M 169/00 // (C10M169/00, 105:18, 105:38, 115:08, 119:24, 135:18), C10N10:02, C10N10:04, C10N10:08, C10N10:10, C10N10:12, C10N10:16, C10N30:00, C10N40:02, C10N40:08

(84) Designated Contracting States:

AT BE CH CY DE DK ES FI FR GB GR IE IT LI LU
MC NL PT SE TR
Designated Extension States:
AL LT LV MK RO SI

(30) Priority: 02.06.2000 JP 2000166152

(71) Applicant: Nippon Mitsubishi Oil Corporation Tokyo (JP)

- (72) Inventors:
 - Kinoshita, Hirotugu Yokohama-shi, Kanagawa (JP)
 - Sakamato, Kiyomi Yokohama-shi, Kanagawa (JP)
- (74) Representative: Hallybone, Huw George et al Carpmaels and Ransford,
 43 Bloomsbury Square London WC1A 2RA (GB)
- (54) Grease composition preventing flaking
- (57) A grease composition comprising a lubricant base oil and a metal dithiocarbamate represented by the formula (1):

wherein R¹ to R⁴ may be the same or different and each stands for a hydrocarbon group having 10 to 20 carbon atoms, and X stands for a metal or a metal-containing group. The composition has long life even when used at a high temperature, is not harmful to humans and the environment, and can give an extended anti-flaking life to the rolling bearing.

EP 1 160 308 A3



EUROPEAN SEARCH REPORT

Application Number EP 01 30 4807

	DOCUMENTS CONSID	ERED TO BE RELEVAN	T		
Category	Citation of document with i of relevant pas	ndication, where appropriate, sages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int.CI.7)	
X	EP 0 911 382 A (NIF 28 April 1999 (1999 * page 2, line 28 -	9-04-28)	1-3	C10M135/18 C10M169/00 //(C10M169/00, 105:18,105:38,	
X	US 5 207 936 A (ANZ 4 May 1993 (1993-05 * column 2, line 9 * column 5, line 2 * column 3, line 12	- line 52 * - line 30 *	1-3	115:08,119:24, 135:18), C10N10:02, C10N10:04, C10N10:08, C10N10:10,	
X	EP 0 869 166 A (NIP 7 October 1998 (199 * page 1, line 30 -	8-10-07)	1-3	C10N10:10, C10N10:12, C10N10:16, C10N30:00, C10N40:02, C10N40:08	
				TECHNICAL FIELDS SEARCHED (Int.Cl.7)	
				C10M	
	The present search report has I	been drawn up for all claims Date of completion of the search		Examiner	
	THE HAGUE	·	11 October 2002 Rots		
X : parti Y : parti docu A : tech O : non-	ATEGORY OF CITED DOCUMENTS cularly relevant if taken alone cularly relevant if combined with anot ment of the same category nological background written disclosure mediate document	T : theory or prir E : earlier paten after the filing b: document cit L : document cit	lciple underlying the it document, but public gate led in the application ed for other reasons	nvention shed on, or	

EPO FORM 1503 03.82 (P04C01)

ANNEX TO THE EUROPEAN SEARCH REPORT ON EUROPEAN PATENT APPLICATION NO.

EP 01 30 4807

This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report. The members are as contained in the European Patent Office EDP file on The European Patent Office is in no way liable for these particulars which are merely given for the purpose of information.

11-10-2002

Patent document cited in search report		Publication date		Patent family member(s)		Publication date	
EP 0	911382	Α	28-04-1999	JP	11116981	Α	27-04-1999
				EP	0911382	A1	28-04-1999
				US	6063740	Α	16-05-2000
US 5	207936	Α	04-05-1993	JP	2915611	B2	05-07-1999
				JP	4304300	Α	27-10-1992
				ΑU	640857	B2	02-09-1993
				ΑU	1100792	Α	17-12-1992
				DE	4204855	A1	08-10-1992
				FR	2674534	A1	02-10-1992
				GB	2255103	A,B	28-10-1992
				KR	147803	B1	01-08-1998
EP 0	 869166	 А	07-10-1998	JP	10273690	 А	13-10-1998
				EP	0869166	A1	07-10-1998
				US	6020290	Α	01-02-2000

FORM P0459

For more details about this annex : see Official Journal of the European Patent Office, No. 12/82