

(19) World Intellectual Property Organization
International Bureau



(43) International Publication Date
30 October 2003 (30.10.2003)

PCT

(10) International Publication Number
WO 03/089550 A2

- (51) International Patent Classification⁷: **C10M** Avenue, Branston, Burton on Trent, Staffordshire DE14 3DA (GB).
- (21) International Application Number: PCT/US02/20404
- (22) International Filing Date: 27 June 2002 (27.06.2002)
- (25) Filing Language: English
- (26) Publication Language: English
- (30) Priority Data:
60/302,074 29 June 2001 (29.06.2001) US
60/302,180 29 June 2001 (29.06.2001) US
60/342,734 20 December 2001 (20.12.2001) US
- (71) Applicant (*for all designated States except US*): **THE LUBRIZOL CORPORATION** [US/US]; 29400 Lakeland Blvd., Wickliffe, OH 44092-2298 (US).
- (72) Inventors; and
- (75) Inventors/Applicants (*for US only*): **DI BIASE, Stephen, A.** [US/US]; 504 East 266th Street, Euclid, OH 44132 (US). **COOK, Stephen, J.** [GB/GB]; 3 Ridgeway-on-the-Hill, Ambergate, Belper, Derbyshire DE56 2LA (GB). **MAYHEW, Alexandra** [RO/GB]; 32 Ratcliffe
- (74) Agents: **LAFERTY, Samuel, B.** et al.; The Lubrizol Corporation, Patent Dept.-022B, 29400 Lakeland Blvd., Wickliffe, OH 44092-2298 (US).
- (81) Designated States (*national*): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZM, ZW.
- (84) Designated States (*regional*): European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR).
- Published:**
— *without international search report and to be republished upon receipt of that report*
- For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.*

(54) Title: STABLE DISPERSIONS OF OIL-INSOLUBLE COMPOUNDS IN HYDROCARBONS FOR USE IN LUBRICANTS

(57) Abstract: An additive package including an oil-insoluble additive, a method for forming an additive package with an oil-insoluble additive and a lubricant in the form of a dispersion of an oil-insoluble additive in oil is described where an oil-insoluble solvent, e.g. water, can be used to help create the dispersed phase. These packages, methods and lubricants are beneficial in various applications such as internal combustion engines where the oil benefits from functional additives that are not readily soluble in the oil. In many embodiments the oil-insoluble solvent is partially or fully removed before use.



WO 03/089550 A2