

(19) World Intellectual Property Organization
International Bureau



(43) International Publication Date
23 October 2003 (23.10.2003)

PCT

(10) International Publication Number
WO 03/087277 A2

(51) International Patent Classification⁷: **C10M**

(21) International Application Number: PCT/US02/32191

(22) International Filing Date: 8 October 2002 (08.10.2002)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
60/328,321 10 October 2001 (10.10.2001) US
Not furnished 8 October 2002 (08.10.2002) US

(71) Applicant: **EXXONMOBIL RESEARCH AND ENGINEERING COMPANY** [US/US]; 1545 Route 22 East, P.O. Box 900, Annandale, NJ 08801-0900 (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, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, UZ, VC, VN, YU, ZA, ZW.

(84) Designated States (*regional*): ARIPO patent (GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, SK, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Published:

— *without international search report and to be republished upon receipt of that report*

(72) Inventors: **CARDIS, Angeline, Baird**; 350 West Front Street, Florence, NJ 08518 (US). **ARDITO, Susan, C.**; 1405 South Wanamassa Drive, Ocean, NJ 07712 (US).

(74) Agents: **FOSS, Norby, L.** et al.; Exxonmobil Research and Engineering Company, 1545 Route 22 East, P. O. Box 900, Annandale, NJ 08801-0900 (US).

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: BIODEGRADABLE NON-TOXIC GEAR OIL

(57) Abstract: A biodegradable lubricating oil composition especially useful as a gear oil employs a synthetic alcohol ester base-stock formed from mono- and dipentaerythritol with certain mono- and dicarboxylic acids or dicarboxylic acid anhydrides and an effective amount of a polyoxyalkylene alcohol demulsifying agent, a combination of alkylated organic acid and ashless succinimide rust inhibitors and an ashless dithiocarbamate antiwear and extreme pressure agent.



WO 03/087277 A2