

(19) World Intellectual Property Organization
International Bureau



(43) International Publication Date
23 November 2006 (23.11.2006)

PCT

(10) International Publication Number
WO 2006/124367 A1

(51) International Patent Classification:
C10M 125/00 (2006.01) **C10M 159/18** (2006.01)

(21) International Application Number:
PCT/US2006/017717

(22) International Filing Date: 9 May 2006 (09.05.2006)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
60/680,683 13 May 2005 (13.05.2005) US
11/418,953 5 May 2006 (05.05.2006) US

(71) Applicant (for all designated States except US): **EXXON-MOBIL RESEARCH AND ENGINEERING COMPANY** [US/US]; 1545 Route 22 East, P.O. Box 900, Annandale, New Jersey 08801-0900 (US).

(72) Inventors; and

(75) Inventors/Applicants (for US only): **HABEEB, Jacob, Joseph** [CA/US]; 102 East Dudley Avenue, Westfield, New Jersey 07090 (US). **RUCKER, Steven, Paul** [US/US]; 5 Lawn Lane, Warren, New Jersey 07059 (US).

(74) Agents: **KATZ, Gary, P.** et al.; EXXONMOBIL RESEARCH AND ENGINEERING COMPANY, 1545 Route 22 East, P.O. box 900, Annandale, New Jersey 08801-0900 (US).

(81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KN, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, LY, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NG, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SM, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

(84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, LV, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Published:

- with international search report
- before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments

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: CATALYTIC ANTIOXIDANTS

(57) Abstract: The present invention is directed to lubricating oils of improved antioxidancy comprising a base oil selected from the group consisting of mineral oils, synthetic oils and mixtures thereof containing an effective amount of one or more organometallic compound and/or coordination complex selected from the group consisting of (a) a metal or metal cation with more than one oxidation state, above the ground state, and two or more anions, (b) a metal or metal cation with more than one oxidation state above the ground state and one or more bidentate or tridentate ligands, (c) a metal or metal cation with more than one oxidation state above the ground slate, and one or more amines and one or more ligands, and (d) mixtures thereof, to a method for improving the antioxidancy of formulated lubricating oil compositions by the addition thereto of an effective amount of the aforementioned organometallic compound, and/or coordination complex, and to an additive concentrate containing the aforementioned organometallic compound and/or coordination complex.



WO 2006/124367 A1