

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property Organization
International Bureau



(43) International Publication Date
7 July 2011 (07.07.2011)

PCT

(10) International Publication Number
WO 2011/081730 A2

(51) International Patent Classification:

C10M 141/12 (2006.01) *C10M 133/16* (2006.01)
C10M 169/04 (2006.01) *C10N 40/25* (2006.01)
C10M 139/00 (2006.01)

(21) International Application Number:

PCT/US2010/056558

(22) International Filing Date:

12 November 2010 (12.11.2010)

(25) Filing Language:

English

(26) Publication Language:

English

(30) Priority Data:

12/653,497 15 December 2009 (15.12.2009) US

(71) Applicant (for all designated States except US):

CHEVRON ORONITE COMPANY LLC; 6001
Bollinger Canyon Road, San Ramon, California 94583
(US).

(72) Inventors; and

(75) Inventors/Applicants (for US only): **BHALLA, Gaurav**;
111 Devonwood, Hercules, California 94547 (US). **YAMA-
MAGUCHI, Elaine S.**; 1741 Wesley Avenue, El Cerrito,
California 94530 (US). **TSANG, Man Hon**; 1140 Sum-
mer Lane, Richmond, California 94806 (US).

(74) Agents: **VIRASSAMMY, Carlton** et al.; Chevron Cor-
poration, Law Department, Post Office Box 6006, San
Ramon, California 94583-0806 (US).

(81) Designated States (unless otherwise indicated, for every
kind of national protection available): AE, AG, AL, AM,

AO, AT, AU, AZ, BA, BB, BG, BH, BR, BW, BY, BZ,
CA, CH, CL, CN, CO, CR, CU, CZ, DE, DK, DM, DO,
DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT,
HN, HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KN, KP,
KR, KZ, LA, LC, LK, LR, LS, LT, LU, LY, MA, MD,
ME, MG, MK, MN, MW, MX, MY, MZ, NA, NG, NI,
NO, NZ, OM, PE, PG, PH, PL, PT, RO, RS, RU, SC, SD,
SE, SG, SK, SL, SM, ST, SV, SY, TH, TJ, TM, TN, TR,
TT, TZ, UA, UG, US, UZ, VC, VN, ZA, ZM, ZW.

(84) Designated States (unless otherwise indicated, for every
kind of regional protection available): ARIPO (BW, GH,
GM, KE, LR, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG,
ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ,
TM), European (AL, AT, BE, BG, CH, CY, CZ, DE, DK,
EE, ES, FI, FR, GB, GR, HR, HU, IE, IS, IT, LT, LU,
LV, MC, MK, MT, NL, NO, PL, PT, RO, RS, SE, SI, SK,
SM, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ,
GW, ML, MR, NE, SN, TD, TG).

Declarations under Rule 4.17:

- as to applicant's entitlement to apply for and be granted
a patent (Rule 4.17(ii))
- as to the applicant's entitlement to claim the priority of
the earlier application (Rule 4.17(iii))

Published:

- without international search report and to be republished
upon receipt of that report (Rule 48.2(g))

(54) Title: LUBRICATING OIL COMPOSITIONS

(57) Abstract: A lubricating oil composition is disclosed which comprises (a) a major amount of an oil of lubricating viscosity;
(b) one or more non-halogen-containing oil-soluble titanium complexes comprising at least one ligand comprising an anion of a
carboxylic acid; (c) one or more dispersants; and (d) one or more detergents, wherein the lubricating oil composition is free of any
zinc dialkyldithiophosphate.



WO 2011/081730 A2