

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

(19) World Intellectual Property Organization
International Bureau



(43) International Publication Date
13 October 2011 (13.10.2011)

(10) International Publication Number
WO 2011/126636 A3

PCT

(51) International Patent Classification:

C10M 129/18 (2006.01) *C10N 30/06* (2006.01)
C10M 129/26 (2006.01) *C10N 40/25* (2006.01)
C10M 169/04 (2006.01)

(21) International Application Number:

PCT/US2011/027137

(22) International Filing Date:

4 March 2011 (04.03.2011)

(25) Filing Language:

English

(26) Publication Language:

English

(30) Priority Data:

12/751,652 31 March 2010 (31.03.2010) US

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

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

(72) Inventor; and

(75) Inventor/Applicant (for US only): **McDOUGALL,
Patrick J.** [US/US]; 1411 1/2 Cypress Street, Berkeley,
California 94703 (US).

(74) Agents: **JONES, Josetta, I.** et al.; Chevron Corporation,

Law Department, Post Office Box 6006, San Ramon, Cal-
ifornia 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:

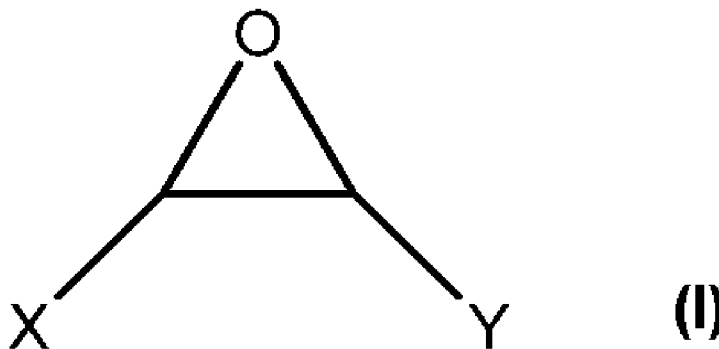
— with international search report (Art. 21(3))

— before the expiration of the time limit for amending the
claims and to be republished in the event of receipt of
amendments (Rule 48.2(h))

(88) Date of publication of the international search report:

5 January 2012

(54) Title: LUBRICATING OIL COMPOSITIONS CONTAINING EPOXIDE ANTIWEAR AGENTS



(57) Abstract: A lubricating oil composition comprising (a) a major amount of an oil of lubricating viscosity; and (b) an oil soluble epoxide compound having the following structure: wherein X is hydrogen or a substituted or unsubstituted C₁ to C₂₀ hydrocarbyl group, wherein the substituted hydrocarbyl group is substituted with one or more substituents selected from hydroxyl, alkoxy, ester or amino groups and Y is -CH₂OR, -C(=O)OR¹ or -C(=O)NHR², wherein R, R¹ and R² are independently hydrogen or C₁ to C₂₀ alkyl or alkenyl groups; and further wherein the oil of lubricating viscosity does not contain a carboxylic acid ester.



WO 2011/126636 A3