



(43) International Publication Date
23 May 2013 (23.05.2013)

(10) International Publication Number
WO 2013/074498 A1

(51) International Patent Classification:
C10M 167/00 (2006.01)

(21) International Application Number:
PCT/US2012/064781

(22) International Filing Date:
13 November 2012 (13.11.2012)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
61/559,294 14 November 2011 (14.11.2011) US

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(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, BN, 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, PA, PE, PG, PH, PL, PT, QA, RO, RS, RU, RW, 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, RW, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, 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).

Published:

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

(54) Title: METHOD FOR IMPROVING ENGINE FUEL EFFICIENCY

(57) Abstract: A method for improving fuel efficiency, while maintaining or improving wear protection, in an engine lubricated with a lubricating oil by using as the lubricating oil a formulated oil having a HTHS viscosity of less than 2.6 cP at 150°C. The formulated oil has a composition that comprises a lubricating oil base stock as a major component, and zinc dialkyl dithio phosphate, a mixture of (i) at least two alkali metal detergents, (ii) at least two alkaline earth metal detergents, or (iii) one or more alkali metal detergents and one or more alkaline earth metal detergents; and a viscosity index improver, as minor components. A lubricating engine oil having a composition comprising a lubricating oil base stock as a major component, and a zinc dialkyl dithio phosphate, a mixture of (i) at least two alkali metal detergents, (ii) at least two alkaline earth metal detergents, or (iii) one or more alkali metal detergents and one or more alkaline earth metal detergents, e.g., magnesium sulfonate and calcium salicylate; and a viscosity index improver, as minor components. The lubricating oil has a HTHS viscosity of less than 2.6 cP at 150°C. The composition contains less than 2 weight percent of the viscosity index improver, based on the total weight of the formulated oil or lubricating engine oil. The composition is sufficient for the formulated oil or lubricating engine oil to pass wear protection requirements of one or more engine tests selected from TU3M, Sequence IIIG, Sequence IVA and OM646LA.



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