



(51) International Patent Classification:

C07C 37/20 (2006.01) *C07C 39/16* (2006.01)
C07C 39/15 (2006.01) *C10M 105/16* (2006.01)

(21) International Application Number:

PCT/US2014/015181

(22) International Filing Date:

7 February 2014 (07.02.2014)

(25) Filing Language:

English

(26) Publication Language:

English

(30) Priority Data:

61/763,037 11 February 2013 (11.02.2013) US

(71) Applicant: **THE LUBRIZOL CORPORATION**
[US/US]; 29400 Lakeland Blvd., Wickliffe, Ohio 44092-2298 (US).

(72) Inventors: **PERERA, Jayasooriya Sujith**; 29400 Lakeland Blvd., Wickliffe, Ohio 44092-2298 (US). **WALKER, Gary M.**; P.O. Box 88, Belper Derby DE56 1QN (GB). **CIOLLI, Christopher J.**; 29400 Lakeland Blvd., Wickliffe, Ohio 44092-2298 (US). **FRIEND, Christopher L.**; 29400 Lakeland Blvd., Wickliffe, Ohio 44092-2298 (US).

(74) Agents: **SHOLD, David M.** et al.; 29400 Lakeland Blvd., Wickliffe, Ohio 44092-2298 (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, 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, IR, IS, JP, KE, KG, 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, SA, 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, KM, ML, MR, NE, SN, TD, TG).

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))

(54) Title: BRIDGED ALKALINE EARTH METAL ALKYLPHENATES

(57) Abstract: A bridged alkaline earth metal alkylphenate having reduced monomeric alkylphenol is prepared by reacting (a) a 4-alkylphenol, unsubstituted at the ortho positions, (b) an alkaline earth metal oxide or hydroxide, (c) a bridging agent comprising sulfur or a carbonyl compound of 1 to about 6, or to 4 or to 2, carbon atoms, and (d) a 2,6-dialkylphenol. The amount of the 2,6-dialkylphenol is 0.05 to 3 moles per 1 mole of the 4-alkylphenol; if there is a molar excess of the 2,6-dialkylphenol, then the excess is added after initial reaction.

