

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

(19) World Intellectual Property
Organization
International Bureau

(43) International Publication Date
26 January 2023 (26.01.2023)



(10) International Publication Number
WO 2023/004265 A1

(51) International Patent Classification:

C10M 157/10 (2006.01) C10N 40/25 (2006.01)
C10N 30/12 (2006.01) C10N 60/14 (2006.01)

(21) International Application Number:

PCT/US2022/073778

(22) International Filing Date:

15 July 2022 (15.07.2022)

(25) Filing Language:

English

(26) Publication Language:

English

(30) Priority Data:

17/381,610 21 July 2021 (21.07.2021) US

(71) Applicant: **AFTON CHEMICAL CORPORATION**
[US/US]; 500 Spring Street, Richmond, Virginia 23219
(US).

(72) Inventor: **FIELD, Samuel Bruce**; Flat 43, Imperial Court,
Imperial Road, Windsor Berkshire SL4 3RE (GB).

(74) Agent: **CHELSTROM, Jeffrey A.** et al.; Honigman Miller
Schwartz and Cohn LLP, 650 Trade Centre Way, Suite 200,
Kalamazoo, Michigan 49002-0402 (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, CV, CZ, DE, DJ, DK, DM, DO, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT, HN, HR, HU, ID, IL, IN, IQ, IR, IS, IT, JM, JO, JP, KE, KG, KH, KN, KP, KR, KW, KZ, LA, LC, LK, LR, LS, 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, ST, SV, SY, TH, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, WS, 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, ST, 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).

(54) Title: METHODS OF REDUCING LEAD CORROSION IN AN INTERNAL COMBUSTION ENGINE

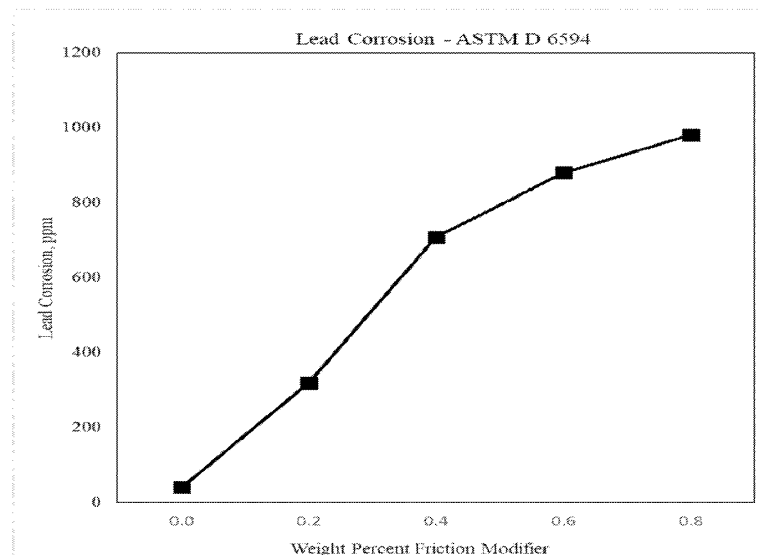


FIG. 1

(57) Abstract: The present disclosure describes lubricant compositions effective to reduce lead corrosion through an admixture of lubricant additives including at least a base oil of lubricating viscosity, a dispersant, a friction modifier, and boron-containing compound.

[Continued on next page]

Published:

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