

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

(19) World Intellectual Property
Organization
International Bureau

(43) International Publication Date
13 April 2023 (13.04.2023)



(10) International Publication Number
WO 2023/057943 A1

(51) International Patent Classification:

C10L 1/10 (2006.01) C10L 1/198 (2006.01)
C10L 10/02 (2006.01) C10L 1/222 (2006.01)
C10L 10/04 (2006.01) C10L 1/2387 (2006.01)
C10L 1/183 (2006.01)

(21) International Application Number:

PCT/IB2022/059541

(22) International Filing Date:

06 October 2022 (06.10.2022)

(25) Filing Language:

English

(26) Publication Language:

English

(30) Priority Data:

63/252,952 06 October 2021 (06.10.2021) US

(71) Applicants: CHEVRON ORONITE COMPANY LLC

[US/US]; 6001 Bollinger Canyon Road, San Ramon, California 94583 (US). CHEVRON JAPAN LTD. [JP/JP]; Atago Green Hills Mori Tower 18F, 2-5-1 Atago Minato-Ku, Tokyo 105-6218 (JP). CHEVRON U.S.A. INC. [US/US]; 6001 Bollinger Canyon Road, San Ramon, California 94583 (US).

(72) Inventors: KUO, Chung-Hao; 6001 Bollinger Canyon

Road, San Ramon, California 94583 (US). SMOCHA, Ruth; 6001 Bollinger Canyon Road, San Ramon, California 94583 (US). OHTA, Satoshi; Atago Green Hills Mori Tower 18F, 2-5-1 Atago Minato-Ku, Tokyo 105-6218 (JP). SIMPSON-GREEN, Felicia F.; 6001 Bollinger Canyon Road, San Ramon, California 94583 (US). KATO, Yuuki; Atago Green Hills Mori Tower 18F, 2-5-1 Atago Minato-Ku, Tokyo 105-6218 (JP). SHIH, Jiun-Le; 6001 Bollinger Canyon Road, San Ramon, California 94583 (US). LOEPER, Paul; 6001 Bollinger Canyon Road, San Ramon, California 94583 (US).

(74) Agent: PIO, Michael Sungjoon et al.; P.O. 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, 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, 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, ME, 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).

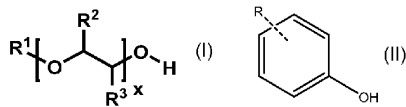
Declarations under Rule 4.17:

- 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))
- in black and white; the international application as filed contained color or greyscale and is available for download from PATENTSCOPE

(54) Title: FUEL ADDITIVES FOR LOWERING DEPOSIT AND PARTICULATE EMISSION



(57) Abstract: A fuel composition is described. The composition contains a hydrocarbon-based fuel boiling in the gasoline or diesel range; a carrier fluid comprising an alkyl polyethoxylate having the following structure (I), where each R² and R³ is independently hydrogen, C₁-C₄ hydrocarbyl group, or C₁-C₃ alcohol, where R¹ is C₄-C₁₀₀ hydrocarbyl group, carboxyl group, ether group, thioether group, or aromatic group, wherein x is from 1 to 20, or a hydrocarbyl phenol having the following structure (II) wherein R is a hydrocarbyl group from C₄-C₁₀₀; an amine-based detergent given by formula 2, R⁴-O-(CH₂)_y-NHR⁵, where the amine-based detergent is present in about 10 ppm to about 750 ppm by weight based on total weight of the fuel composition; where R⁴ is a hydrocarbyl group having 8 to 20 carbons, R⁵ is hydrogen or (CH₂)₂NH₂ moiety, and where y, z are independently integers having a value of 2 or greater; and one or more nitrogen-containing detergent.

WO 2023/057943 A1