

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

(19) World Intellectual Property
Organization
International Bureau

(43) International Publication Date
28 October 2021 (28.10.2021)



(10) International Publication Number
WO 2021/217124 A1

(51) International Patent Classification:

C09K 8/584 (2006.01) *B82Y 30/00* (2011.01)
C09K 8/60 (2006.01)

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))

(21) International Application Number:

PCT/US2021/029127

(22) International Filing Date:

26 April 2021 (26.04.2021)

(25) Filing Language:

English

(26) Publication Language:

English

(30) Priority Data:

63/015,393 24 April 2020 (24.04.2020) US

(71) Applicant: **CHEVRON U.S.A. INC.** [US/US]; 6001 Bollinger Canyon Road, San Ramon, California 94583 (US).

(72) Inventors: **PINNAWALA, Gayani W.**; CHEVRON CORPORATION, P.O. Box 6006, San Ramon, California 94583 (US). **PALAYANGODA, Sujeewa S.**; CHEVRON CORPORATION, P.O. Box 6006, San Ramon, California 94583 (US). **WINSLOW, Gregory A.**; CHEVRON CORPORATION, P.O. Box 6006, San Ramon, California 94583 (US). **DWARAKANATH, Varadarajan**; CHEVRON CORPORATION, P.O. Box 6006, San Ramon, California 94583 (US).

(74) Agent: **ZUCCHERO, Anthony J.** et al.; Meunier Carlin & Curfman LLC, 999 Peachtree St. NE, Suite 1300, Atlanta, Georgia 30309 (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, DJ, DK, DM, DO, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT, HN, HR, HU, ID, IL, IN, IR, IS, IT, 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: POLYANIONIC SURFACTANTS AND METHODS OF MAKING AND USING THEREOF

(57) Abstract: The present disclosure is directed to polyanionic surfactants, surfactant mixtures, compositions derived thereof, and uses thereof such as in oil and gas operations. Methods of making polyanionic surfactants are also described.

WO 2021/217124 A1