

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

(19) World Intellectual Property
Organization
International Bureau

(43) International Publication Date
27 April 2023 (27.04.2023)



(10) International Publication Number
WO 2023/069868 A1

(51) International Patent Classification:

C10G 31/06 (2006.01) C10G 9/36 (2006.01)
C10G 49/26 (2006.01) C10G 69/06 (2006.01)

SK, SM, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN,
GQ, GW, KM, ML, MR, NE, SN, TD, TG).

(21) International Application Number:

PCT/US2022/078085

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))

(22) International Filing Date:

14 October 2022 (14.10.2022)

(25) Filing Language:

English

(26) Publication Language:

English

Published:

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

(30) Priority Data:

63/262,754 20 October 2021 (20.10.2021) US

(71) Applicant: **EXXONMOBIL CHEMICAL PATENTS INC.** [US/US]; 5200 Bayway Drive, Baytown, TX 77520 (US).

(72) Inventors: **EMANUELE, Krystle, J.**; 1329 Fox Glen Drive, Hummelstown, PA 17036 (US). **XU, Teng**; 5902 Oakland Field Trail, Houston, TX 77059 (US). **PEER, Maryam**; 23 Huntley Way, Bridgewater, NJ 08807 (US).

(74) Agent: **CHEN, Siwen** et al.; ExxonMobil Chemical Company, Law Department, P.O. Box 2149, Baytown, TX 77522-2149 (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, CV, 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,

(54) Title: HYDROCARBON CONVERSION PROCESSES

(57) Abstract: Hydrocarbon conversion processes. The process can include providing a gas oil feed that can include a gas oil and an olefin. A reactivity R(go) of the gas oil feed can be determined. The R(go) can be compared to a predetermined reference reactivity R(ref). If R(go) > R(ref), the gas oil feed can be heated to a temperature in a range of from 200°C to 400°C for a residence time in a range of from 1 minute to 45 minutes to produce a heat-treated gas oil feed having a reactivity R(ht-go), until R(ht-go) ≤ R(ref). A hydroprocessor feed that includes the gas oil feed if R(go) ≤ R(ref) or the heat-treated gas oil feed can be fed to a hydroprocessor. The hydroprocessor feed can be hydroprocessed in the hydroprocessor to produce a hydroprocessor effluent that can include a hydroprocessed gas oil.



WO 2023/069868 A1