

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

(19) World Intellectual Property
Organization

International Bureau

(43) International Publication Date
06 July 2023 (06.07.2023)



(10) International Publication Number
WO 2023/130029 A1

(51) International Patent Classification:
C08F 210/16 (2006.01) C08F 4/659 (2006.01)

(21) International Application Number:
PCT/US2022/082562

(22) International Filing Date:
29 December 2022 (29.12.2022)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
63/295,182 30 December 2021 (30.12.2021) US

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(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, 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))
- 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))



WO 2023/130029 A1

(54) Title: MULTIMODAL ETHYLENE-BASED COPOLYMER COMPOSITIONS AND PROCESSES OF PRODUCING

(57) Abstract: Embodiments of this disclosure includes processes of polymerizing a multi-modal polyethylene polymer. The process includes contacting ethylene and optionally one or more α -olefin monomers with at least two catalyst systems in a solution reactor at a reactor temperature of greater than 150°C. The at least two catalyst systems produce a vinyl end group count per 1000 carbon atoms is greater than 0.3. A first catalyst system of the at least two catalyst systems includes a first procatalyst; and a second catalyst system of the at least two catalyst systems comprises a second procatalyst having a reactivity ratio of less than 20, wherein the reactivity ratio of the first procatalyst is measured in a single reactor with only the first catalyst system in the presence of 1250 grams of ISOPAR-E, with a mol fraction of ethylene in solution of 0.709, and at a reactor temperature of at least 150°C.