

(19) World Intellectual Property
Organization
International Bureau



WIPO | PCT



(10) International Publication Number
WO 2024/205807 A9

(43) International Publication Date
03 October 2024 (03.10.2024)

(51) International Patent Classification:

C08F 210/16 (2006.01) C08F 210/14 (2006.01)
C08F 4/64 (2006.01) C08F 4/659 (2006.01)
C08F 2/00 (2006.01)

GH, GM, KE, LR, LS, MW, MZ, NA, RW, SC, 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).

(21) International Application Number:

PCT/US2024/017675

(22) International Filing Date:

28 February 2024 (28.02.2024)

Published:

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

(25) Filing Language:

English

(26) Publication Language:

English

(48) Date of publication of this corrected version:

12 December 2024 (12.12.2024)

(30) Priority Data:

63/492,587 28 March 2023 (28.03.2023) US

(15) Information about Correction:

see Notice of 12 December 2024 (12.12.2024)

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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, MU, 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,

(54) Title: PROCESS FOR PRODUCING BRANCHED POLYOLEFIN

(57) Abstract: The present disclosure provides a process. In an embodiment, the process includes contacting, under first polymerization conditions in a first polymerization reactor at a temperature less than 150°C, a first polymerization catalyst and a first cocatalyst with (i) an ethylene monomer and an optional α -olefin comonomer, and (ii) a dual-headed aluminum-alkyl chain transfer agent. The process includes first forming one or more telechelic aluminum-terminated polymer chains and feeding the one or more telechelic aluminum-terminated polymer chains to a second polymerization reactor. The second polymerization reactor has second polymerization conditions, a second polymerization catalyst, a second cocatalyst, and a temperature from 160°C to 250°C. The process includes contacting, in the second polymerization reactor, (iii) an ethylene monomer and an optional olefin comonomer, and (iv) the one or more telechelic aluminum-terminated polymer chains. The process includes forming an ethylene-based polymer having an I_{10}/I_2 greater than 8.0 and a vinyl content greater than 20/1,000,000C.



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