

(19) World Intellectual Property Organization
International Bureau



(43) International Publication Date
12 September 2008 (12.09.2008)

PCT

(10) International Publication Number
WO 2008/109212 A1

(51) International Patent Classification:

C08F 10/06 (2006.01) *C08F 4/659* (2006.01)
C08F 2/06 (2006.01)

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(21) International Application Number:

PCT/US2008/052749

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(22) International Filing Date: 1 February 2008 (01.02.2008)

(25) Filing Language:

English

(26) Publication Language:

English

(30) Priority Data:

11/714,546 6 March 2007 (06.03.2007) US
60/933,007 4 June 2007 (04.06.2007) 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, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DO, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT, HN, HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KN, KP, KR, KZ, LA, LC, LK, LR, LS, LT, LU, LY, MA, MD, ME, MG, MK, MN, MW, MX, MY, MZ, NA, NG, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RS, RU, SC, SD, SE, SG, SK, SL, SM, SV, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, ZA, ZM, ZW.

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(84) Designated States (*unless otherwise indicated, for every kind of regional protection available*): ARIPO (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HR, HU, IE, IS, IT, LT, LU, LV, MC, MT, NL, NO, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

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Published:

— with international search report

(54) Title: POLYMER PRODUCTION UNDER SUPERSOLUTION CONDITIONS

(57) Abstract: This invention relates to a process to polymerize olefins comprising contacting propylene, at a temperature of 65° C to 150° C and a pressure of 1.72 to 34.5 MPa, with: 1) a catalyst system comprising one or more activators and one or more non-metallocene metal-centered, heteroaryl ligand catalyst compounds, where the metal is chosen from the Group 4, 5, 6, the lanthanide series, or the actinide series of the Periodic Table of the Elements, 2) optionally one or more comonomers selected from ethylene and C4 to C 12 olefins, 3) diluent or solvent, and 4) optionally scavenger, wherein: a) the olefin monomers and any comonomers are present in the polymerization system at 30 wt% or more, b) the propylene is present in the feed at 80 wt% or more, c) the polymerization occurs at a temperature above the so lid- fluid phase transition temperature of the polymerization system and a pressure greater than 1 MPa below the cloud point pressure of the polymerization system, and d) the polymerization occurs: (1) at a temperature below the critical temperature of the polymerization system, or (preferably and) (2) at a pressure below the critical pressure of the polymerization system.

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