

07/07/03
2003041571

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

(19) World Intellectual Property Organization
International Bureau



(43) International Publication Date
8 August 2002 (08.08.2002)

PCT

(10) International Publication Number
WO 02/060957 A3

- (51) International Patent Classification⁷: **B01J 31/00**, 37/00, C08F 4/02, 4/06, 4/60, 4/72
- (21) International Application Number: PCT/US01/43540
- (22) International Filing Date:
16 November 2001 (16.11.2001)
- (25) Filing Language: English
- (26) Publication Language: English
- (30) Priority Data:
60/261,896 16 January 2001 (16.01.2001) US
- (63) Related by continuation (CON) or continuation-in-part (CIP) to earlier application:
US 60/261,896 (CON)
Filed on 16 January 2001 (16.01.2001)
- (71) Applicant (*for all designated States except US*): **EXXON-MOBIL CHEMICAL PATENTS INC.** [US/US]; 5200 Bayway Drive, Baytown, TX 77520-2101 (US).
- (72) Inventors; and
- (75) Inventors/Applicants (*for US only*): **BRINEN, Jeffrey, L.** [US/US]; 2109 Olympic Drive, League City, TX 77573 (US). **COZEWITH, Charles** [US/US]; 4810 Wellford Drive, Bellaire, TX 77401 (US).
- (74) Agents: **FAULKNER, Kevin, M.** et al.; ExxonMobil Chemical Company, P.O. Box 2149, Baytown, TX 77522-2149 (US).
- (81) Designated States (*national*): AE, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CR, CU, CZ, DE, DK, DM, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW.
- (84) Designated States (*regional*): ARIPO patent (GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).
- Published:
— with international search report
- (88) Date of publication of the international search report:
13 February 2003
- For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.*



162162



ACTION

WO 02/060957 A3

(54) Title: CATALYSTS WITH AT LEAST TWO TRANSITION METAL COMPOUNDS AND POLYMERIZATION PROCESSES USING THEM

(57) Abstract: The application describes a mixed olefin polymerization catalyst composition comprising a support, a reaction product of at least one first organometallic compound and a first activator capable of rendering the first organometallic compound active for insertion polymerization, and at least one second organometallic compound, the activator incapable of rendering the second organometallic compound active for polymerization of the monomers. The mixed catalyst composition can be used to prepare a first polymer component in a first polymerization reactor stage and then, when an effective activator is added for the second organometallic compound, the catalyst composition can be used to prepare a second polymer composition that is homogeneously blended with the first polymer component.