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INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(51) International Patent Classification ⁶ : B01J 31/00, 37/00, C08F 4/02, 4/60, 4/44, 2/00, C08G 85/00	A1	(11) International Publication Number: WO 98/52686 (43) International Publication Date: 26 November 1998 (26.11.98)
(21) International Application Number: PCT/US97/08862 (22) International Filing Date: 22 May 1997 (22.05.97) (71) Applicant (for all designated States except US): PHILLIPS PETROLEUM COMPANY [US/US]; P.O. Box 2443, Bartlesville, OK 74005 (US). (72) Inventors; and (75) Inventors/Applicants (for US only): PALACKAL, Syriac, Joseph [IN/US]; 2501 Dorchester, Bartlesville, OK 74006 (US). WELCH, Melvin, Bruce [US/US]; 4750 Lewis Drive, Bartlesville, OK 74006 (US). STOUFFER, Carlton, E. [US/US]; 1406 Quiet Green Court, Houston, TX 77062 (US). NORWOOD, Donald, Dwight [US/US]; 3011 Sheri- dan Road, Bartlesville, OK 74006 (US). (74) Agents: DOLLAR, Beverly, M. et al.; Richmond, Hitchcock, Fish & Dollar, P.O. Box 2443, Bartlesville, OK 74005 (US).		(81) Designated States: AU, BR, CA, CN, CZ, HU, IL, JP, KR, MX, NO, PL, SG, TR, US, VN, Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, ML, MR, NE, SN, TD, TG). Published With international search report. With amended claims.

(54) Title: METHOD FOR MAKING AND USING A PREPOLYMERIZED OLEFIN POLYMERIZATION CATALYST

(57) Abstract

A catalyst is prepared by creating a catalyst solution by combining an aluminoxane with a group 4-6 metallocene having a substituent which has olefinic unsaturation in a suitable ligand to form a liquid catalyst, conducting prepolymerization of an olefin on the liquid catalyst, and separating the resulting solid metallocene-containing catalyst from the reaction mixture, wherein the prepolymerization is conducted below 15 °C at a constant temperature and/or the resulting solid metallocene-containing catalyst is combined with a particulate polyethylene. Polymerization of olefins using the inventive solid catalyst is also disclosed.