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(21) International Application Number: PCT/GB98/02181 (22) International Filing Date: 22 July 1998 (22.07.98) (30) Priority Data: 97430020.4 25 July 1997 (25.07.97) EP (71) Applicant: BP CHEMICALS LIMITED [GB/GB]; Britannic House, 1 Finsbury Circus, London EC2M 7BA (GB). (71) Applicant (for FR only): BP CHEMICALS S.N.C. [FR/FR]; Tour Neptune, La Defense 1, 20, place de Seine, F-92400 Courbevoie (FR). (72) Inventors: ASHTON, David, John; 7, impasse du Hameau de la Mer, F-13620 Carry-le-Rouet (FR). KISSIN, Yury, Viktor; 35 Pine Ridge Drive, East Brunswick, NJ 08816 (US). MINK, Robert, Ivan; 30A Gates Avenue, Warren, NJ 07059 (US). (74) Agent: PREECE, Michael; BP International Limited, Group Patents & Agreements, Chertsey Road, Sunbury on Thames, Middlesex TW16 7LN (GB).		(81) Designated States: AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GE, GH, GM, HR, HU, ID, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, UZ, VN, YU, ZW, ARIPO patent (GH, GM, KE, LS, MW, SD, SZ, UG, 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), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG). Published <i>With international search report.</i>
(54) Title: HIGH ACTIVITY POLYETHYLENE CATALYSTS (57) Abstract The present invention relates to a high activity catalyst composition for the (co-)polymerisation of ethylene, optionally with an alpha olefin of 3 to 10 carbon atoms, comprising a catalyst precursor and an organoaluminium cocatalyst, wherein the catalyst precursor consists of: (i) a silica carrier material, having from 0.3 to 1.2 mmoles of OH groups per gram of silica, (ii) a dialkylmagnesium compound of the formula $RMgR^1$, where R and R^1 are the same or different C_2-C_{12} alkyl groups, in an amount comprised between 0.5 to 1.5 mmoles of dialkylmagnesium per gram of silica, (iii) a tetraalkyl orthosilicate, in which the alkyl group contains from 2 to 6 carbon atoms, in an amount comprised between 0.2 to 0.8 mmoles per gram of silica, (iv) a chlorinated compound (X) having the formula R_nSiCl_{4-n}, wherein each R is the same or different and is hydrogen or an alkyl group and n is an integer from 0 to 3, in an amount comprised between 0.2 to 4 mmoles of X per gram of silica, and (v) a titanium compound in an amount comprised between 0.3 to 1.5 mmoles per gram of silica.		