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11/152,802 14 June 2005 (14.06.2005) US(71) Applicant (for all designated States except US): **EXXON-MOBIL RESEARCH AND ENGINEERING COMPANY** [US/US]; 1545 Route 22 East, P.O. Box 900, Annandale, NJ 08801-0900 (US).

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(54) Title: CHROMIUM COMPLEXES AND THEIR USE IN OLEFIN POLYMERIZATION

(57) Abstract: A composition having the formula (I) where R^1 and R^2 are independently hydrogen, C_1 to C_{12} linear and branched alkyl, C_3 to C_{12} cycloalkyl, aryl, C_1 to C_{12} alkoxy, F, Cl, SO_3 , C_1 to C_{12} perfluoroalkyl, and $N(CH_3)_2$, R^3 is independently selected from the group consisting of hydrogen, C_1 to C_{12} linear and branched alkyl, C_3 to C_{12} cycloalkyl, aryl, and 2,2,2-trifluoroethyl, A is $-C(R^4)-$, $-(CH_2)_x-$, $-(CH_2)XNH(CH_2)_x-$, or $-CY_2CY_2-$, where R^4 is a hydrocarbyl, halosubstituted hydrocarbyl, or alkoxy group of from (1 to 12) carbon atoms, x is an integer from (1 to 12), and Y is halogen, and X is halogen, triflate, acetate, trifluoroacetate, hydride, or tetrafluoroborate. Such composition, when combined with an activating co-catalyst, is useful in polymerizing olefinic monomers.