

ABSTRACT

CATALYSTS AND PREPOLYMER USED FOR POLYMERIZING OLEFINS, AND
(CO-)POLYMER OF ETHYLENE OBTAINABLE THEREFROM.

The present invention relates to a solid catalyst suitable for polymerizing olefins in a heterogeneous process, the catalyst consisting of spheroidal particles having a narrow particles size distribution and comprising (i) a support containing a magnesium dichloride and an electron-donor free from labile hydrogen, (ii) a zirconium metallocene, (iii) at least one halide of a transition metal selected amongst titanium or vanadium, and (iv) optionally an organoaluminium compound preferably an aluminoxane. The solid catalyst may be used as such or in the form of a prepolymer comprising a polyethylene or a copolymer of ethylene and an active catalyst essentially consisting of atoms of Mg, Cl, Al, Zr, Ti and/or V, preferably in the form of spheroidal particles. The solid catalyst or the prepolymer may be used for producing polyethylene or copolymer of ethylene having from 0.5 to 20 ppm of Zr and a molecular weight distribution higher than 5 and lower than 15, in the form of a powder having a bulk density from 0.3 to 0.55 g/cm³, preferably consisting of spheroidal particles.

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