A new catalyst useful in the polymerization of at least one olefin is disclosed. The catalyst comprises the product obtained by contacting silica, in random order, with (1) at least one hydrocarbon soluble magnesium-containing compound; and (2) a first modifying compound selected from the group consisting of silicon halides, boron halides, aluminum halides and mixtures thereof followed by a second modifying compound selected from the group consisting of halides having the structural formula SiHrX2s, where X2 is halogen; r is an integer of 1 to 3; and s is an integer of 1 to 3 with the proviso that the sum of r and s is 4, a hydrogen halide and mixtures thereof. The product of this step is contacted with a first titanium-containing compound having the structural formula Ti(OR)mXn, where R is hydrocarbyl or cresyl; X is halogen; m is an integer of 1 to 4; and n is 0 or an integer of 1 to 3, with the proviso that the sum of m and n is 4. Finally, the product of this latter step is, in turn, contacted with a second titanium-containing compound, different from the first titanium-containing compound, having the structural formula TiX1p(OR1)q, where X1 is halogen; R1 is hydrocarbyl; p is an integer of 1 to 4; and q is 0 or an integer of 1 to 3, with the proviso that the sum of p and q is 4. A catalyst system comprising the above catalyst, an aluminum-containing first cocatalyst and at least one silane second cocatalyst is also set forth. Finally, a process for polymerizing at least one olefin utilizing the catalyst system of this disclosure is taught.

5612271

PROCESS FOR THE PREPRATION OF A CATALYTIC SYSTEM, PROCESS FOR THE (CO)POLYMERIZATION OF OLEFINS AND (CO)POLYMERS OF AT LEAST ONE OLEFIN

Zandona Nicola Waterloo, BELGIUM assigned to Solvay (Sociacu etacu e Anonyme)

Process for the preparation of a catalytic system according to which a mixture of a halogenated neutral metallocene derived from a transition metal chosen from groups IIIB, IVB, VB and VIB of the Periodic Table and of an organoaluminium compound is prepared and an ionising agent is added thereto. (Co)polymerization process according to which a mixture of a halogenated neutral metallocene as defined above and of an organoaluminium compound is prepared, the olefin is brought into contact with this mixture and an ionising agent is added thereto.

5612427

CATALYST FOR THE POLYMERIZATION OF DIOLEFINS, METHOD FOR ITS PREPARATION,AND ITS USE FOR THE PREPARATION OF POLYMERS

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A supported solid catalyst which can be used for the polymerization and copolymerization of conjugated dienes having as its basis the reaction product of: A) a solid MgCl2 support, B) an ether, preferably THF, as swelling agent for the support, C) a metal salt selected from among metals having an atomic number of between 57 and 71 or 92 in the periodic table of elements and, if the metal salt is not a halide, D) a halogenation agent selected from the group consisting of a halogenated compound of aluminum and a halogenated compound not containing aluminum, the reaction solid being free from the swelling agent, plus E) an organic derivative of aluminum which is obligatory when the halogenation agent is not a halogenated compound of aluminum and optional when the halogenation agent is a derivative of aluminum. Also, a method of preparing this catalyst.