

Structure\*) wherein a represents about 1 to about 99 mole % b represents about 0 to about 50 mole % c represents about 1 to about 99 mole % a+b+c is preferably about 100%; (\*See Patent for Chemical Structure\*) B is R2OHCHCH2 C is selected from the group consisting of: (\*See Patent for Chemical Structure\*) (I) R2OECHCH2; and, (II) (III) combinations thereof. D is OH, halide, OR4, NH2, NHR3, OM', or OM"; E is the residue of the reaction of at least one Lewis Acid with the D substituent of monomer unit B; R1 represents proton, C1-C24 alkyl group, or C3-C24 cycloalkyl; R2 represents C1-C24 alkyl group, C3-C24 cycloalkyl, C6-C18 aryl, or C7-C30 alkylaryl; R3 represents C1-C24 alkyl, C3-C24 cycloalkyl, C1-C24 aryl, or C7-C30 alkylaryl; R4 represents C1-C24 alkyl, C3-C24 cycloalkyl, C1-C24 aryl, or C7-C30 alkylaryl; M' represents alkali metal; M" represents alkaline-earth metal. Also disclosed are polymerization and alkylation processes utilizing the immobilized Lewis Acid catalysts. Another aspect of the present invention is a method of manufacturing immobilized Lewis Acid catalysts.

**5602067**

### **PROCESS AND A CATALYST FOR PREVENTING REACTOR FOULING**

Nowlin Thomas; Lo Frederick; Shinomoto Ronald; Shirodkar Pradeep P West Windsor, NJ, UNITED STATES assigned to Mobil Oil Corporation

A support containing methylalumoxane and derivatives thereof is described which is formed by an incipient impregnation technique. The most preferred support is silica. Incipient impregnation in accordance with the invention provides a supported alumoxane, methylalumoxane, which substantially eliminates the problem of fluidized bed reactor fouling when methylalumoxane is introduced into the reactor during its operation. In accordance with the invention, the process comprises providing methylalumoxane activated

metallocene compound in particulate form as catalysts in fluidized bed gas phase operation.

**5604170**

### **SOLID CATALYST COMPONENTS FOR OLEFIN POLEMERIZATION AND USE THEREOF**

Sano Akira; Kubo Kunimichi; Matsuura Kazuo; Tajima Yoshio Tokyo, JAPAN assigned to Nippon Oil Company Limited

An effective catalyst carrier for use in the polymerization of olefins is provided. Said carrier comprises particles of silicon oxide or aluminum oxide satisfying the following characteristics (A) to (E): (A) An average particle diameter as measured by the sieving method is in the range of 20 to 150  $\mu\text{m}$ . (B) A specific surface area as measured by the BET method is in the range of 150 to 600  $\text{m}^2/\text{g}$ . (C) The volume of pores ranging in pore radius from 18 to 1,000 Angstroms as measured by the mercury penetration method is in the range of 0.3 to 2.0  $\text{cm}^3/\text{g}$ . (D) An apparent specific gravity as measured according to JIS K6220-6.8 is not lower than 0.32. (E) After the particles classified in the range of between 53  $\mu\text{m}$  and 75  $\mu\text{m}$  by the sieving method have been subjected to an ultrasonic disintegration treatment at 40 KHz, 35 W, for 20 minutes, the proportion of 50  $\mu\text{m}$  or smaller particles, i.e., degree of ultrasonic disintegration, is not more than 30%.

**5604171**

### **CATALYTIC SYSTEM WHICH MAY BE USED FOR THE POLYMERIZATION OF ALPHA-OLEFINS AND PROCESS FOR THIS POLYMERIZATION**

Collette Hervacu Pamart Sabine Namur, BELGIUM assigned to Solvay (Sociacu etacu e Anonyme)

Catalytic composition which may be used for the polymerization of alpha-olefins, comprising: (a) a solid catalyst comprising on titanium trichloride (TiCl<sub>3</sub>), (b) a non-halogen-containing cocatalyst comprising at least one non-halogen-containing organoaluminium compound, characterized in that the non-halogen-containing cocatalyst additionally contains at least one aminoalane containing no active hydrogen. Such a catalytic system may additionally contain a tertiary constituent chosen from oxygenated organosilicon compounds.

**5605989**

**PROCESS FOR THE  
POLYMERISATION OF OLEFINS IN  
THE PRESENCE OF AN ACTIVATED  
CATALYST**

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A process for the polymerization of at least one olefin in the presence of an activated catalyst, includes (a) providing an activated catalyst by a method including (1) mixing, in the absence of a solvent, at least one chromium salt with a support composition comprised of at least one compound (A) which is an inorganic, oxygen containing compound of at least one element selected from the group consisting of Group IVb, IIIa and IVa, and at least one compound (B) which is an inorganic compound containing at least one element selected from the group consisting of Group IVb and IIIa, the at least one compound (B) being different from the at least one compound (A), to provide a mixture; (2) preactivating the mixture by heating for a period ranging from 0.5 to 18 hours without calcining in an oxidizing atmosphere to a temperature ranging from at least 30°C above room temperature to a temperature which is lower than the decomposition temperature of the at least one chromium salt and which is 5°C below the melting temperature of the at least one chromium salt to

obtain a catalyst precursor; and (3) activating the catalyst precursor by calcining in an oxidizing atmosphere and under conditions such that part of the chromium is converted to hexavalent chromium; and (b) polymerizing the at least one olefin in the presence of the activated catalyst under conditions effective therefor.

**5607655**

**OLEFIN POLYMERIZATION  
CATALYST AND PRECURSOR  
THEREFOR**

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A generally dipyramidal-shaped catalyst precursor is prepared by dissolving magnesium dichloride and a suitable alcohol in a suitable solvent and then cooling to obtain a precipitate of the desired shape. The use of the precursor to prepare catalysts and the use of the catalysts to prepare polymers is also disclosed.

**5608018**

**ALPHA-OLEFIN POLYMERIZATION  
CATALYST SYSTEM AND PROCESS  
FOR PRODUCING ALPHA-OLEFIN  
CATALYST**

Ebara Takeshi; Kiyota Teruyosi; Imai Akio Ichihara, JAPAN assigned to Sumitomo Chemical Company Limited

An alpha-olefin polymerization catalyst system having so high a catalytic activity and stereoregularity that the catalyst residue and amorphous polymer need not be removed and a process for producing an alpha-olefin polymer using the catalyst system, said catalyst system