

morphology of substantially regular polyhedra having an even number of from 10 to 18 face surfaces, are well suited as support substrate for olefin polymerization catalysts.

5599761

**IONIC METALLOCENE CATALYST
COMPOSITIONS**

Turner Howard W Houston, TX, UNITED STATES assigned to Exxon Chemical Patents Inc

An ionic catalyst system component comprising a water-stable anion having a plurality of lipophilic radicals covalently coordinated to and shielding a central, formal charge bearing metal or metalloid atom, in which the lipophilic radicals of the anion include substituted aromatic radicals useful for polymerizing olefins, diolefins, or acetylenically unsaturated monomers, either alone or in combination with each other or with other polymerizable monomers is disclosed. A method of using the anion to stabilize ionic catalyst systems during polymerization is also disclosed.

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**USE OF GLYCOL ETHER
COMPOUNDS FOR THE
PRODUCTION OF POLYOLEFIN
CATALYSTS AND SUPPORTS**

Denton Dean Baltimore, MD, UNITED STATES assigned to W R Grace & Co-Conn

Glycol ether compounds such as glycol ethers and glycol ether esters are used as azeotropic distillation solvents for conversion of inorganic oxide hydrogels to xerogels by removal of water. These compounds are especially useful to make chromium-containing catalysts for production of high melt index polyolefins at reduced cost

compared to known azeotropic solvents.

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**CHROMIUM CATALYST
COMPOSITIONS AND ETHYLENE
POLYMERIZATION PROCESSES
THEREWITH**

Badley Rickey D; Rollmann Kent W; McDaniel Max P Dewey, OK, UNITED STATES assigned to Phillips Petroleum Company

This invention provides a chromium catalyst system that comprises (a) a support that comprises silica, wherein said support has a surface area to pore volume relationship as follows (*See Patent for Tabular Presentation*) PS wherein said f(SA) is (*See Patent for Tabular Presentation*) PS and (b) a hexavalent chromium compound; wherein the surface concentration of said hexavalent chromium on said support is from 0.25 to 1 hexavalent chromium atoms per square nanometer. Another embodiment of this invention provides a process to homopolymerize ethylene, or copolymerize ethylene with a comonomer, said process comprises polymerizing ethylene with the above chromium catalyst composition.

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**IMMOBILIZED LEWIS ACID
CATALYSTS**

Chung Tze-Chian; Chen Frank J -; Stanat Jon E; Kumar Alok State College, PA, UNITED STATES assigned to Exxon Chemical Patents Inc

Immobilized Lewis Acid catalyst comprising polymer having at least one Lewis Acid immobilized within the structure therein, said polymer having monomer units represented by the structural formula: (*See Patent for Chemical

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.

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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 μm . (B) A specific surface area as measured by the BET method is in the range of 150 to 600 m^2/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 cm^3/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 μm and 75 μm by the sieving method have been subjected to an ultrasonic disintegration treatment at 40 KHz, 35 W, for 20 minutes, the proportion of 50 μm or smaller particles, i.e., degree of ultrasonic disintegration, is not more than 30%.

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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)