

A vanadium-containing catalyst system particularly suited to the polymerization of blow moldable olefin polymers. The catalyst system includes a supported, first catalyst component prepared by contacting preheated silica, with (1) a compound or complex which includes at least one carbon to magnesium covalent bond and (2) a compound which includes at least one carbon to Group III metal covalent bond. The sequence of contact of the silica with compound or complex (1) and compound (2) is optional. However, unless the compound or complex (1) and the compound (2) contact the silica simultaneously, the product of this contact is next contacted with whichever of compound (1) or (2) does not initially contact the silica. The product of the step of contacting with compounds (1) and (2) is contacted with a vanadium compound which includes at least one halogen atom. Finally, the product of the vanadium compound contacting step is contacted with an alcohol. A second component of the catalyst system is an organoaluminum compound cocatalyst. The catalyst system also includes a halocarbon compound promoter as a third catalyst component.

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**CATALYST SYSTEMS FOR
PRODUCING BROAD MOLECULAR
WEIGHT POLYOLEFIN**

Welch M Bruce; Geerts Rolf; Palackal Syriac J; Pettijohn Ted Bartlesville, OK, UNITED STATES assigned to Phillips Petroleum Company

A catalyst system comprising a bridged fluorenyl-containing metallocene, an unbridged metallocene, and a suitable cocatalyst and the use of such catalyst systems to produce olefin polymers. Also novel olefin polymers produced by those processes.

5536690

POLYMERIZATION CATALYSTS

Cloke Frederick G N Brighton, UNITED KINGDOM assigned to BP Chemicals Limited

Novel Group IV or V metal complexes comprise cyclooctatetraene ligands. The complexes are suitable for use as catalysts for the polymerization of olefins and may be supported for use in the gas phase. A preferred complex has the formula: (*See Patent for Chemical Structure*).

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**POLYMERIZATION CATALYSTS,
THEIR PRODUCTION AND USE**

Jejelowo Moses O; Bamberger Robert L Kingwood, TX, UNITED STATES assigned to Exxon Chemical Company

The invention generally relates to a catalyst, particularly a metallocene catalyst and catalyst system useful in the polymerization of olefins into a polymer product. The polymer product has a broad molecular weight distribution, a high molecular weight and a narrow composition distribution and is easily processable.

5536859

**ALPHA-OLEFIN CATALYST AND
PROCESS**

Lin Kaung-Far; Lanier Carroll; Waites William Baton Rouge, LA, UNITED STATES assigned to Amoco Corporation

This invention provides an improved process for the preparation of an aluminum alkyl chain growth

product by the chain growth reaction of alpha-olefins on aluminum alkyl, the improvement comprising catalyzing the chain growth reaction that is a partially oxidized aluminum alkyl.

5536883

**HIGHLY ACTIVE DOUBLE METAL
CYANIDE CATALYSTS AND EPOXIDE
POLYMERIZATION**

Le-Khac Bi West Chester, PA, UNITED STATES assigned to ARCO Chemical Technology LP

Highly active double metal cyanide (DMC) catalysts are disclosed. The catalysts comprise a DMC complex, and organic complexing agent, and from about 5 to about 80 wt. %, based on the amount of catalyst, of a polyether having a number average molecular weight greater than about 500. A method of preparing the catalysts is also disclosed. The catalysts are easy to prepare, have exceptional activity, and are readily removed, if desired, from polymer products. The catalysts are used for polymerizing epoxides.

5539007

**CATALYST COMPOSITIONS FOR
MAKING POLYURETHANE BASED
ON IMIDAZOLES AND BORON
COMPOUNDS**

Listemann Mark; Mercado Lisa; Savoca Ann C Whitehall, PA, UNITED STATES assigned to Air Products and Chemicals Inc

A method for catalyzing the blowing reaction and making polyurethane foams employing a catalyst composition consisting essentially of a hydroxy-functional imidazole of the following

formula I (*See Patent for Chemical Structure*) I where R1 is a C1-C10 alkyl; R2 is hydrogen, methyl or ethyl and R3 is hydrogen or a C1-C20 organic group optionally having an ether functionality, provided that when R1 is methyl, R2 and R3 are not both hydrogen or a hydrogen and a methyl, in combination with a boron compound of the formula (*See Patent for Tabular Presentation*) PS where n=0 or 1, and R=C1-C8 alkyl, C5-C8 cycloalkyl, or C6-C10 aryl.

5539067

**COMPONENTS AND CATALYSTS
FOR THE POLYMERIZATION OF
OLEFINS**

Parodi Sandro; Nocchi Roberto; Giannini Umberto; Barbe'Pier C; Scata'Umert Oleggio, ITALY assigned to Montedison SpA

Disclosed are catalysts for the polymerization of alpha-olefins which comprise the reaction product of: (a) an Al alkyl compound; (b) a silicon compound containing at least a Si-OR or Si-OCOR or Si-NR2 bond, R being a hydrocarbyl radical; (c) a solid comprising, as essential support, a Mg dihalide in active form and, supported thereon, a Ti halide or a halo-Ti-alcoholate and a particular, selected type of electron-donor compound.

5539068

**GROUP 4, METAL-CONJUGATED
DIENE METALLOCYCLOPENTENE
COMPLEXES, AND ADDITION
POLYMERIZATION CATALYSTS
THEREFROM**

Devore David D; Stevens James; Timmers Francis J; Rosen Robert K Midland, MI, UNITED STATES assigned to The Dow Chemical Company