

5612428**PROCESS FOR PREPARING OLEFIN
POLYMER WITH CATALYST
CONTAINING METALLOCENE**

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The invention relates to a metallocene compound of the formula I (*See Patent for Chemical Structure*) (I) where the two indenyl ligands have substitution patterns different from one another. The metallocene compound can be used as catalyst component for olefin polymerization.

5614455**OLEFIN POLYMERIZATION
CATALYST, PROCESS FOR ITS
PREPARATION, AND ITS USE**

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Olefin polymerization catalyst, process for its preparation, and its use. A supported polymerization catalyst which is applicable in all polymerization processes is comprised of the reaction product of (A) a supported organoaluminum compound and (B) a metallocene catalyst component.

5614456**CATALYST FOR BIMODAL
MOLECULAR WEIGHT
DISTRIBUTION ETHYLENE
POLYMERS AND COPOLYMERS**

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The interaction of silica, previously calcined at 600°C, with dibutylmagnesium (DBM), 1-butanol and titanium tetrachloride and a solution of methylalumoxane (MAO) and (BuCp)₂ZrCl₂ provides a catalyst that, in the absence of a trialkylaluminum (AlR₃) cocatalyst, produces polyethylene with a bimodal MWD.

5614457**CATALYST SYSTEM USING
ALUMINUM ALKYL WITH ION-PAIR
METALLOCENE CATALYSTS**

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This invention is for a catalyst system for polymerization of olefins using an ionic metallocene catalyst with aluminum alkyl. The metallocene catalyst is an ion pair formed from a neutral metallocene compound and an ionizing compound. The invention can be used in any method of producing ionic metallocene catalysts. Use of aluminum alkyl with an ionic metallocene catalyst eliminates the need for using methylaluminoxane (MAO). Catalysts produced by the method of this invention have high activity. The invention reduces catalyst poisons which cause low activity, no activity or uncontrolled polymerizations. Polymerization using this catalyst system are reproducible and controllable.