

CATALYST COMPOSITIONS FOR PRODUCING POLYOLEFINS IN THE ABSENCE OF COCATALYSTS

ABSTRACT

This invention relates to the field of olefin polymerization catalyst compositions, and methods for the polymerization and copolymerization of olefins, including polymerization methods using a supported catalyst composition. One aspect of this invention is the preparation and use of a catalyst composition comprising a hydrocarbyl-substituted metallocene compound and a chemically-treated solid oxide for olefin polymerization processes. In another aspect, for example, this invention encompasses the preparation of a catalyst composition comprising $(\eta^5\text{-cycloalkadienyl})_2\text{Zr}(\text{hydrocarbyl})_2$ complexes and sulfated alumina, but containing no organoaluminum or organoboron cocatalysts, and further the use of this catalyst composition for polymerizing olefins.

Fig. 1