

Abstract

A catalyst component for olefin polymerization is disclosed, which comprises a reaction product of the following components: (1) a spheric carrier; (2) a titanium compound; and optionally, (3) an electron donor, wherein the spheric carrier comprises a reaction product of at least the following components: (a) a magnesium halide represented by a general formula of $\text{MgX}_{2-n}\text{R}_n$, wherein X is independently chloride or bromide, R is a $\text{C}_1\text{-C}_{14}$ alkyl, a $\text{C}_6\text{-C}_{14}$ aryl, a $\text{C}_1\text{-C}_{14}$ alkoxy, or a $\text{C}_6\text{-C}_{14}$ aryloxy, and n is 0 or 1; (b) an alcohol compound; and (c) an epoxy compound represented by a general formula (I), wherein R_2 and R_3 are independently hydrogen, a $\text{C}_1\text{-C}_5$ linear or branched alkyl, or a $\text{C}_1\text{-C}_5$ linear or branched haloalkyl. When the catalyst of the invention is used in olefin polymerization, in particular in propylene polymerization, at least one of the following desired effects can be achieved: high polymerization activity of catalyst, high stereospecificity of catalyst, good hydrogen response of catalyst, high stereoregularity of polymer having high melt index, and low content of polymer fines.

