

ABSTRACT

IMPROVED METHOD FOR FORMING HIGHLY REACTIVE OLEFIN FUNCTIONAL POLYMERS

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A process for the preparation of polybutene having an exo-olefin content of at least 50 mol. % from an isobutene or an isobutene-containing monomer feedstock, which process comprises contacting said isobutene or isobutene-containing feedstock, with a Lewis acid catalyst complexed with a Lewis base, in a substantially or
10 completely apolar polymerization medium, and initiating polymerization of said isobutene or isobutene-containing feedstock with an initiator. The Lewis acid catalyst is a Lewis acid of the formula $R'AlCl_2$, wherein R' is a hydrocarbyl group; the Lewis base is a dihydrocarbyl ether wherein each hydrocarbyl group is independently selected from hydrocarbyl groups having 1 to 8 carbon atoms and one or both
15 hydrocarbyl groups of the dihydrocarbyl ether are substituted with an electron withdrawing group; and the initiator is a compound of the formula RX , wherein X is a halide; R is a hydrocarbyl group capable of forming a stable carbocation, and the carbon linking group R to group X is tertiary, benzylic or allylic. The catalyst complex is pre-activated by addition of water, and the pre-activated catalyst complex
20 is subsequently reacted with from about 0.1 to about 2 molar equivalents, per equivalent of Lewis acid, of a trialkyl aluminum compound wherein each alkyl group of the trialkyl aluminum compound has at least 2 carbon atoms.

No Figure