Claims

1. A process for preparing isobutene homopolymers or copolymers having a number average molecular weight of from 500 to 5 000 000 by polymerization of isobutene or an isobutene-comprising monomer mixture in the presence of a Lewis acid or a complex comprising a Lewis acid as polymerization catalyst, wherein the polymerization is carried out in the presence of at least one hemiacetal or full acetal which can be obtained by protic acid-catalyzed reaction of at least one C_1-C_{12}-hydrocarbyl alcohol with at least one aldehyde or ketone having from 1 to 12 carbon atoms.

2. The process according to claim 1, wherein the at least one hemiacetal or full acetal is used in an amount of from 10 to 5000 ppm by weight, based on the isobutene used in the polymerization.

3. The process according to claim 1 or 2, wherein the polymerization is carried out in the presence of at least one hemiacetal or full acetal which can be obtained by protic acid-catalyzed reaction of at least one linear C_1-C_6-alkanol with at least one aldehyde having from 1 to 4 carbon atoms.

4. The use of hemiacetals or full acetals which can be obtained by protic-acid catalyzed reaction of at least one C_1-C_{12}-hydrocarbyl alcohol with at least one aldehyde or ketone having from 1 to 6 carbon atoms in the polymerization of isobutene or an isobutene-comprising monomer mixture in the presence of a Lewis acid or a complex comprising a Lewis acid as polymerization catalyst in order to improve the product quality of the resulting isobutene homopolymers or copolymers having a number average molecular weight of from 500 to 5 000 000.

5. The use according to claim 4 for reducing the tendency of the isobutene homopolymers or copolymers obtained to discolor.

Claims

1. An invention not claimed in any divisional application.