**Claims:**

1. A method for preparing polybutene, comprising the steps of:

obtaining a raw material of carbon number 4 (C4) compounds having an isobutene amount of 50 to 75 % by weight,

wherein the raw material of C4 compounds is first prepared by a method selected from the group consisting of (a) preparing a C4 compound material in which an isobutene amount is adjusted to 50 to 75% by weight, by adding high amount isobutene mixture having isobutene amount of 80 to 97% by weight, which is generated in an olefin conversion unit (OCU) process that produces propylene by the metathesis of ethylene and 2-butene, to C4 raffinate-1 which is a remainder after extracting 1,3-butadiene from a C4 compound derived during a naphtha degrading process; (b) preparing a C4 compound material in which an isobutene amount is adjusted to 50 to 75% by weight, by adding high amount isobutene mixture having the isobutene amount of 80 to 97% by weight, which is generated in an olefin conversion unit (OCU) process that produces propylene by the metathesis of ethylene and 2-butene, to butane-butene oil (B-B oil) derived from crude oil refining process; (c) preparing a C4 compound material in which an isobutene amount is adjusted to 50 to 75% by weight, by adding a dilute solvent to high amount isobutene mixture having the isobutene amount of 80 to 97% by weight, which is generated in an olefin conversion unit (OCU) process that produces propylene by the metathesis of ethylene and 2-butene; and (d) preparing a C4 compound material in which an isobutene amount is adjusted to 50 to 75% by weight, by adding high amount isobutene mixture having the isobutene amount of 80 to 97% by weight, which is generated in an olefin conversion unit (OCU) process that produces propylene by the metathesis of ethylene and 2-butene to a mixture generated in dehydrogenation reaction that converts isobutane to isobutene, and

polymerizing the raw material of carbon number 4 (C4) compounds,

wherein the polybutene has alpha vinylidene amount of 80% or more and total amount of

alpha vinylidene and beta vinylidene of 92% or more, with respect to amount of total double bond.

2. The method as claimed in claim 1, wherein the raw C4 compound material is obtained by adding a dilute solvent to high amount isobutene mixture having the isobutene amount of 80 to 97% by weight, generated in an olefin conversion unit (OCU) process that produces propylene by the metathesis of ethylene and 2-butene, and wherein the dilute solvent is selected from the group consisting of n-butane, iso-butane, butane mixture, butane-butene mixture, n-pentane, pentane mixture, n-hexane and hexane mixture.

3. The method as claimed in claim 1, wherein the polymerization is carried out in the presence of a complex catalyst formed of a main catalyst and a cocatalyst, the main catalyst being selected from the group consisting of boron trichloride, aluminum trichloride, zinc chloride, and boron trifluoride and the cocatalyst being alcohols, and a molar ratio of the cocatalyst/main catalyst constituting the complex catalyst is 1 to 2.

4. The method as claimed in claim 3, wherein the main catalyst is boron trifluoride, and the amount of boron trifluoride used is 0.02 to 1 part by weight based on 100 parts by weight of the raw material of the C4 compound.

5. The method as claimed in claim 3, wherein the cocatalyst is selected from the group consisting of methanol, ethanol, propanol, isopropyl alcohol, butanol and isobutanol.

6. The method as claimed in claim 3, wherein the polymerization is carried out in the presence of an auxiliary cocatalyst, the auxiliary cocatalyst being selected from the group consisting of dimethyl ether, methyl ethyl ether, diethyl ether, ethyl propyl ether, dipropyl ether,

diisopropyl ether, methyl butyl ether, methyl propyl ether, methyl isopropyl ether, methyl isobutyl ether, methyl butyl ether, isopropyl sec- butyl ether, sec-butyl ether, isoamyl ether, isopropyl isoamyl ether and sec-butyl isoamyl ether.

7. The method as claimed in claim 1, wherein the polymerization step is carried out at a temperature of -40 to 20 ° C, a pressure condition of 3 $kg/cm^2$ or more, for 5 to 120 minutes.

8. The method as claimed in claim 1, wherein the raw material for the carbon number 4 compound includes 50 to 75% by weight of isobutene and 25 to 50% by weight of hydrocarbon compounds having 4 carbon atoms other than isobutene.

9. The method as claimed in claim 1, wherein the isobutene amount in the raw material of the carbon number 4 is 50 to 70% by weight.

10. The method as claimed in claim 1, wherein a conversion rate of isobutene in the raw material of the C4 compound to polybutene is 80% or more.

11. The method as claimed in claim 1, wherein in the polybutene, the alpha vinylidene amount is 85% or more, and the total vinylidene amount, being the sum of the alpha vinylidene amount and the beta vinylidene amount, is 93% or more, with respect to the amount of total double bond.

12. The method as claimed in claim 1, wherein in the polybutene an amount of an internal double bond, excluding the alpha vinylidene and the beta vinylidene is 3 to 8% with respect to the amount of total double bond.