[Document Name] Claims

[Claim 1]

A catalyst for polymerization of an olefin, comprising:

a solid catalyst component for polymerization of an olefin, comprising magnesium, titanium, halogen, and a succinic acid diester compound, wherein a ratio (S/T), represented by a total content of an internal electron-donating compound with the succinic acid diester compound as a main component (S) to a content of the titanium (T), is 0.60 to 1.30 in a molar ratio,

an organoaluminum compound, and

one or more external electron-donating compounds selected from aminosilane compounds represented by the following formula (I):

$R^1_nSi(NR^2R^3)_{4-n}$ (I)

wherein R^1 is an alkyl group having 1 to 20 carbon atoms, a vinyl group, an alkenyl group having 3 to 12 carbon atoms, an alkoxy group having 1 to 20 carbon atoms, an vinyloxy group, an alkenyloxy group having 3 to 20 carbon atoms, a cycloalkyl group having 3 to 20 carbon atoms, a cycloalkyloxy group having 3 to 20 carbon atoms, or an aryl group having 6 to 20 carbon atoms or an aryloxy group having 6 to 20 carbon atoms, wherein when more than one R^1 are present, the more than one R^1 may be the same as or different from each other; R^2 and R^3 are a hydrogen

atom, an alkyl group having 1 to 20 carbon atoms, a vinyl group, an alkenyl group having 3 to 20 carbon atoms, a cycloalkyl group having 3 to 20 carbon atoms, a cycloalkenyl group having 3 to 20 carbon atoms, or an aryl group having 6 to 20 carbon atoms, wherein R^2 and R^3 may be the same as or different from each other and may be bonded to each other to form a ring, and when more than one NR^2R^3 groups are present, the more than one NR^2R^3 groups may be the same as or different from each other; and n satisfies $1 \leq n \leq 3$.

[Claim 2]

The catalyst for polymerization of an olefin according to claim 1, wherein the total content of the internal electron-donating compound with the succinic acid diester compound as the main component (S) in the solid catalyst component for polymerization of an olefin is 10.0% by mass or more.

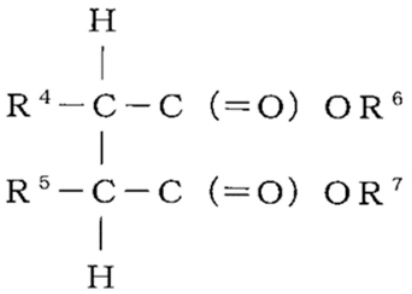
[Claim 3]

The catalyst for polymerization of an olefin according to claim 1, wherein the content of the titanium (T) in the solid catalyst component for polymerization of an olefin is 1.0 to 6.0% by mass.

[Claim 4]

The catalyst for polymerization of an olefin according to claim 1, wherein the succinic acid diester compound is one or more compounds selected from compounds represented by the following formula (II):

[Formula 1]



(II)

wherein R^4 and R^5, the same as or different from each other, are a hydrogen atom or an alkyl group having 1 to 4 carbon atoms, and R^6 and R^7, the same as or different from each other, are a straight chain alkyl group or a branched chain alkyl group having 2 to 4 carbon atoms.

[Claim 5]

The catalyst for polymerization of an olefin according to claim 1, wherein the organoaluminum compound is one or more compounds selected from compounds represented by the following formula (III):

$R^8_pAlQ_{3-p}$ (III)

wherein R^8 is an alkyl group having 1 to 6 carbon atoms, Q is a hydrogen atom or halogen, and p satisfies $0 < p \leq 3$, wherein when more than one R^8 are present, each R^8 may be the same as or different from each other, and when more than one Q are present, each Q may be the same as or different from each other.

[Claim 6]

A method for producing a polymer of an olefin, comprising polymerizing an olefin using the catalyst for

polymerization of an olefin according to any one of claims 1 to 5.