

ABSTRACT

It is an object of the present invention to provide a process for producing a syndiotactic propylene polymer with high polymerization activity and high efficiency by a solution polymerization method without deposition of polymers (excluding a white state), and a production process capable of conducting the above production continuously, provided that these processes could not be attained conventionally.

The present invention is:

a process for producing a syndiotactic propylene polymer having a syndiotactic pentad fraction (rrrr fraction), as measured by ^{13}C -NMR, of at least 85%, a melting point (T_m), as measured by DSC, of from 145°C to 170°C , and an intrinsic viscosity $[\eta]$ of 0.1 to 10 dl/g, which process comprises a step (P_1) of solution polymerizing propylene singly or propylene and at least one monomer selected from ethylene and an α -olefin having 4 to 10 carbon atoms at a polymerization temperature (T_R) of from 30°C to 250°C in an inert hydrocarbon solvent in the presence of an olefin polymerization catalyst which comprises;

(A) a bridged metallocene compound represented by the following formula (I), and

(B) at least one compound selected from

(b-1) an organoaluminum oxy compound,

(b-2) a compound capable of forming an ion pair by reacting

with the metallocene compound (A), and

(b-3) an organoaluminum compound.

[Chem.1]



- 5 in which M is a titanium atom or the like, Q is a halogen atom or the like, j is an integer of 1 to 4, R^a and R^b may be identically or differently a single nuclear or polynuclear hydrocarbon residue capable of forming a sandwich structure together with M, Y is a carbon atom or a silicon atom, and R^c and R^d may be
- 10 the same or different from each other, is selected from hydrogen, a hydrocarbon group and a silicon atom-containing group and further may be bonded each other to form a ring.