ABSTRACT

An ethylene-based polymer which is an ethylene/C4 to C10 α-olefin copolymer and satisfies the following requirements [k1] to [k3]: [k1] melt flow rate (MFR) under a loading of 2.16 kg at 190°C is in the range of 1.0 to 50 g/10 minutes; [k2] LNR defined as a scale of neck-in upon film molding is in the range of 0.6 to 1.4; and [k3] take-up speed at break [DS (m/min)] at 160°C and melt flow rate (MFR) satisfy the following relationship (Eq-1): $12 \times MFR^{0.577} \leq DS \leq 165 \times MFR^{0.577}$ (Eq-1), and a thermoplastic resin composition containing the ethylene-based polymer, provide a molded product, preferably a film, excellent in moldability and mechanical strength.

The ethylene-based polymer can be efficiently obtained by polymerization in the presence of an olefin polymerization catalyst formed from a solid carrier, (A) a solid transition metal catalyst component obtained by contacting (a) a compound of a transition metal of the group 4 in the periodic table, containing at least one ligand having a cyclopentadienyl skeleton, (b) an organoaluminum oxy compound, (c) a multifunctional organic halide, and if necessary (d) an organoaluminum compound, and if necessary (B) organoaluminum compound.