as the external haze is higher due to the small unevenness of the film surface. However, from the viewpoint of visibility of the contents and defect inspection in the film, a film having well-balanced transparency and blocking resistance is required. Further, in the cases where ethylene polymers are used in, for example, bottles, the improvement in transparency is desired.

Citation List

Patent Literature

[0007]

Patent Literature 1: JPH07-026079A

Patent Literature 2: JPH02-276807A

Patent Literature 3: JPH04-213309A

Patent Literature 4: WO93/08221

Patent Literature 5: JPH08-311260A

Patent Literature 6: JP2006-233207A

Patent Literature 7: JP2008-31380A

Patent Literature 8: JP2009-197225A

Summary

[0007a]

In a first aspect of the present disclosure, there is provided an ethylene-α-olefin copolymer which is a copolymer

of ethylene and one or more α-olefins having 4 to 10 carbon atoms, and which satisfies the following requirements (1) to (6):

(1) the density is in a range of 890 kg/m^3 or more and 925 kg/m^3 or less;

(2) the melt flow rate (MFR) at 190°C and 2.16 kg load is in a range of 0.1 g/10 minutes or more and less than 3.0 g/10 minutes;

(3) the ratio [MT/η^* (g/P)] of the melt tension [MT (g)] at 190°C to the shear viscosity [η^* (P)] at 200°C and the angular velocity of 1.0 rad/s is in a range of 1.20×10^{-4} or more and 2.90×10^{-4} or less;

(4) the zero shear viscosity [η_0 (P)] at 200°C and the weight-average molecular weight (Mw) measured by GPC-viscometry (GPC-VISCO) satisfy the following equation (Eq-1):

$$0.01 \times 10^{-13} \times Mw^{3.4} \leq \eta_0 \leq 3.5 \times 10^{-13} \times Mw^{3.4} \quad \text{(Eq-1)};$$

(5) the number-average molecular weight (Mn), the weight-average molecular weight (Mw), and the Z-average molecular weight (Mz), which are measured by GPC-viscometry (GPC-VISCO), satisfy the following equation (Eq-2):

$$-7.0 \leq Mz/Mw - Mw/Mn \leq 2.0 \quad \text{(Eq-2)};$$

(6) the melting curve obtained by differential scanning calorimetry (DSC) has multiple peaks.

[0007b]

In another aspect of the present disclosure, there is provided a thermoplastic resin composition comprising: the ethylene-α-olefin copolymer as disclosed herein; and a thermoplastic resin other than the ethylene-α-olefin copolymer.

[0007c]

In yet another aspect of the present disclosure, there is provided a film comprising the ethylene-α-olefin copolymer as disclosed herein.

[0007d]

In a further aspect of the present disclosure, there is provided a multilayer film comprising a layer comprising the ethylene-α-olefin copolymer as disclosed herein.

Technical Problem

[0008]