CLAIMS

[Claim 1]

An expanded propylene resin bead comprising a core layer being in a foamed state and constituted of a propylene-based resin composition (a) and a cover layer covering the core layer and constituted of an olefin-based resin (b),

the propylene-based resin composition (a) satisfying the following (i) and (ii), and the olefin-based resin (b) satisfying the following (iii) or (iv):

(i) the propylene-based resin composition (a) is a mixture of 65% by weight to 98% by weight of a propylene-based resin (a1) having a melting point of 145°C or more and less than 165°C and a flexural modulus of 1,200 MPa or more and 35% by weight to 2% by weight of a propylene-based resin (a2) having a melting point of 135°C to 145°C and a flexural modulus of 1000 MPa to 1,200 MPa, provided that a sum total weight of the propylene-based resin (a1) and the propylene-based resin (a2) is 100% by weight, wherein the propylene-based resin (a2) is obtained through polymerization in the presence of a metallocene-based polymerization catalyst;

(ii) a difference between the melting point of the propylene-based resin (a1) and the melting point of the propylene-based resin (a2) [(melting point of a1) - (melting point of a2)] is 5°C to 25°C;

(iii) the olefin-based resin (b) is a crystalline olefin-based resin having a melting point (TmB) that is lower than a melting point (TmA) of the propylene-based resin composition (a), with a difference between the melting point (TmA) and the melting point (TmB) [TmA - TmB] being more than 0°C and 80°C or less; and

(iv) the olefin-based resin (b) is a non-crystalline olefin-based resin having a softening point (TsB) that is lower than the melting point (TmA) of the propylene-based resin composition (a), with a difference between the melting point (TmA) and the softening point (TsB) [TmA - TsB] being more than 0°C and 100°C or less.

[Claim 2]

The expanded propylene resin bead according to claim 1, wherein in a first time DSC curve obtained by the heat flux differential scanning calorimetry when heated from ambient temperature to 200°C at a heating rate of 10°C/min, the expanded propylene resin bead has a ratio of a partial endothermic peak calorific value in a range of from 80°C to 145°C to a total endothermic peak calorific value of 0.30 to 0.45.

[Claim 3]

The expanded propylene resin bead according to claim 1 or 2, wherein in the item (ii), the difference in melting point between the propylene-based resin (a1) and the propylene-based resin (a2) [(melting point of a1) - (melting point of a2)] is 10 to 25°C.

[Claim 4]

The expanded propylene resin bead according to any one of claims 1 to 3,

wherein the propylene-based resin (a2) and the propylene-based resin (a1) are a propylene-based resin obtained through polymerization in the presence of a metallocene-based polymerization catalyst.

[Claim 5]

The expanded propylene resin bead according to any one of claims 1 to 3, wherein the propylene-based resin (a2) is a propylene-based random copolymer obtained through polymerization in the presence of a metallocene-based polymerization catalyst, and the propylene-based resin (a1) is a propylene-based copolymer.

[Claim 6]

The expanded propylene resin bead according to any one of claims 1 to 5, wherein the propylene-based resin composition (a) has a content of the propylene-based resin (a1) of 70% by weight to 90% by weight and a content of the propylene-based resin (a2) of 10% by weight to 30% by weight.

[Claim 7]

The expanded propylene resin bead according to any one of claims 1 to 6, wherein the olefin-based resin (b) is a propylene-based resin obtained through polymerization in the presence of a metallocene-based polymerization catalyst.

[Claim 8]

The expanded propylene resin bead according to any one of claims 1 to 6, wherein the olefin-based resin (b) is an ethylene-based resin obtained through polymerization in the presence of a metallocene-based polymerization catalyst.

[Claim 9]

An expanded propylene resin beads molded article obtained through in-mold molding of the expanded propylene resin beads according to any one of claims 1 to 8.

[Claim 10]

The expanded propylene resin beads molded article according to claim 9, wherein the article is prepared using in-mold molding with a pressure of molding steam of 0.32 MPa to 0.34MPa.