

Claims

1. Heterophasic propylene copolymer (HECO) composition comprising
- 5 a) a matrix being a propylene polymer (M), which is optionally at least bimodal, and
- b) an elastomeric ethylene-propylene copolymer (E) being dispersed in said matrix, the elastomeric ethylene-propylene copolymer (E) has an intrinsic viscosity (IV) in the range from 3.3 to 5.0 dl/g and an ethylene content in the range from 34 to 60 wt.% based on the total weight of the elastomeric ethylene-propylene copolymer (E),
- 10 wherein the xylene cold soluble fraction (XCS) is in the range from 25.0 to 50.0 wt.-%, based on the total weight of the composition.
2. The heterophasic propylene copolymer (HECO) composition according to claim 1, wherein the heterophasic propylene copolymer (HECO) composition has
- 15 i) a melt flow rate MFR_2 (230°C, 2.16 kg) determined according to ISO 1133 in the range of 10 to 30 g/10min, preferably 12 to 18 g/10 min, and/or
- ii) a flexural modulus measured according to ISO 178 on injection molded specimen of 1000 to 1400 MPa, preferably from 1050 to 1250 MPa, and/or
- 20 iii) a Charpy notched impact strength measured according to ISO 179-1eA:2000 at 23°C in the range from 14.0 to 25.0 kJ/m², preferably 15.0 to 20.0 kJ/m², and/or
- iv) Charpy notched impact strength measured according to ISO 179-1eA:2000 at -20°C in the range from 6.0 to 10.0 kJ/m², more preferably in the range from
- 25 6.2 to 9.0 kJ/m².
3. Heterophasic propylene copolymer (HECO) composition according to claim 1 or 2, wherein the propylene polymer (M) is a propylene homopolymer, preferably the propylene polymer (M) is bimodal or trimodal.
- 30 4. Heterophasic propylene copolymer (HECO) composition according to any one of the previous claims 1 to 3, wherein the propylene polymer (M) comprises at least two propylene polymer fractions (M-A) and (M-B), preferably the at least two propylene polymer fractions (M-A) and (M-B) differ from each other by the melt flow rate MFR_2 (230 °C / 2.16 kg) measured according to ISO 1133 and/or the melt flow rate MFR_2 (230 °C / 2.16 kg) measured according to ISO 1133 of the propylene polymer fraction (M-B) is lower than the melt flow rate MFR_2 (230 °C / 2.16 kg) measured according to ISO 1133 of the propylene polymer fraction (M-A).
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5. Heterophasic propylene copolymer (HECO) composition according to claim 4, wherein the propylene polymer (M) comprises two propylene polymer fractions (M-A) and (M-B), wherein
- (a) the first propylene polymer fraction (M-A) has a melt flow rate MFR_2 (230 °C / 2.16 kg) measured according to ISO 1133 in the range from 80.0 to 120.0 g/10min, preferably in the range from 85.0 to 110.0 g/10min, more preferably in the range from 90.0 to 105.0 g/10min; and/or
- (b) the second propylene polymer fraction (M-B) has a lower melt flow rate MFR_2 (230 °C / 2.16 kg) measured according to ISO 1133 than the first propylene polymer fraction (M-A) so that the melt flow rate MFR_2 (230 °C / 2.16 kg) measured according to ISO 1133 of the propylene polymer (M) is in the range from 60.0 to 90.0 g/10min, preferably in the range from 65.0 to 85.0 g/10min, more preferably in the range from 70.0 to 80.0 g/10min.
6. Heterophasic propylene copolymer (HECO) composition according to claim 4, wherein the propylene polymer (M) comprises three propylene polymer fractions (M-A), (M-B) and (M-C), wherein
- (a) the first propylene polymer fraction (M-A) has a melt flow rate MFR_2 (230 °C / 2.16 kg) measured according to ISO 1133 in the range from 200.0 to 250.0 g/10min, preferably in the range from 204.0 to 240.0 g/10min, more preferably in the range from > 204.0 to 235.0 g/10min; and/or
- (b) the second propylene polymer fraction (M-B) has a melt flow rate MFR_2 (230 °C / 2.16 kg) measured according to ISO 1133 being lower than the melt flow rate MFR_2 (230 °C / 2.16 kg) measured according to ISO 1133 of the first propylene polymer fraction (M-A) so that the mixture of (a) and (b) has a melt flow rate MFR_2 (230 °C / 2.16 kg) measured according to ISO 1133 in the range from 150.0 to 210.0 g/10min, preferably in the range from 155.0 to < 204.0 g/10min, more preferably in the range from 165.0 to < 204.0 g/10min, and/or
- (c) the third propylene polymer fraction (M-C) has a melt flow rate MFR_2 (230 °C / 2.16 kg) measured according to ISO 1133 of the mixture of (a) and (b) so that the melt flow rate MFR_2 (230 °C / 2.16 kg) measured according to ISO 1133 of the propylene polymer (M) is in the range from 50.0 to 80.0 g/10min, preferably in the range from 60.0 to 70.0 g/10min, more preferably in the range from 62.0 to 68.0 g/10min.

7. Heterophasic propylene copolymer (HECO) composition according to claims 5 or 6, wherein one of the propylene polymer fractions (M-A) and (M-B) and optional (M-C) is a propylene homopolymer, preferably each of the propylene polymer fractions (M-A), (M-B) and optional (M-C) is a propylene homopolymer, and/or each of the propylene polymer fractions (M-A), (M-B) and optional (M-C) has a xylene cold soluble (XCS) content in the range from 0 to 5 wt.-%.
8. Heterophasic propylene copolymer (HECO) composition according to any one of the previous claims 1 to 7, wherein the elastomeric ethylene-propylene copolymer (E) has a comonomer content in the range from 33 to 39 wt.-%, preferably from 33.5 to 38.5 wt.-%, determined as the comonomer content of the xylene cold soluble (XCS) fraction of the heterophasic propylene copolymer (HECO).
9. Heterophasic propylene copolymer (HECO) composition according to any one of the previous claims 1 to 8, wherein the elastomeric ethylene-propylene copolymer (E) comprises one or two elastomeric ethylene-propylene copolymer fractions (E-A) and optionally (E-B).
10. Article comprising the heterophasic propylene copolymer (HECO) composition according to any one of claims 1 to 9.
11. Article according to claim 11, being a molded article like an injection molded article or a compression molded article, such as parts of car seats, paint pails, strollers, baby walkers, toys, heavy duty pails or transport packagings.
12. Use of the heterophasic propylene copolymer (HECO) composition according to any one of the previous claims 1 to 9 for the preparation of an article according to claim 10 or 11.