

CLAIMS

1. A polyethylene blend comprising a uniform dispersion of constituents (A) and (B): (A) a Ziegler-Natta catalyst-made linear low density polyethylene (ZN-LLDPE) and (B) a metallocene catalyst-made linear low density polyethylene (MCN-LLDPE); wherein the (A) ZN-LLDPE is from 11 to 79 weight percent (wt%) of the total weight of (A) and (B) and the (B) MCN-LLDPE is from 89 to 21 wt% of the total weight of (A) and (B); wherein by itself (A) is independently characterized by properties (i) to (iii): (i) a melt index ("I₂", 190° C., 2.16 kg) of 0.5 to 2.5 gram per 10 minutes (g/10 min.) measured according to ASTM D1238-04; (ii) a density from 0.905 to 0.930 gram per cubic centimeter (g/cm³), measured according to ASTM D792-13; and (iii) no detectable amount of long chain branching per 1,000 carbon atoms ("LCB Index"), measured according to LCB Test Method (described later); and wherein by itself (B) is independently characterized by properties (i) to (iii): (i) a melt index ("I₂", 190° C., 2.16 kg) of 0.5 to 2.5 g/10 min. measured according to ASTM D1238-04; (ii) a density from 0.905 to 0.930 g/cm³, measured according to ASTM D792-13; and (iii) no detectable amount of long chain branching per 1,000 carbon atoms ("LCB Index"), measured according to LCB Test Method (described later); and with the proviso that the density of constituent (B) is within ± 0.003 g/cm³ of the density of constituent (A).
2. The polyolefin blend of claim 1, further characterized by one of limitations (i) to (vii): (i) each of ZN-LLDPE and MCN-LLDPE is independently characterized by a melt index of ("I₂", 190° C., 2.16 kg) of 0.5 to 1.99 g/10 min.; (ii) the melt index of constituent (B) is within ± 0.4 g/10 min. of the melt index of constituent (A); (iii) both (i) and (ii); (iv) each of the ZN-LLDPE and MCN-LLDPE is independently characterized by a density of 0.918 ± 0.003 g/cm³; (v) the density of constituent (B) is within ± 0.001 g/cm³ of the density of constituent (A); (vi) both (iv) and (v); or (vii) both (iii) and (vi).
3. The polyolefin blend of claim 1 or 2, when formed as a film having a thickness of 0.0127 millimeter (0.500 mil), is further characterized by any one of limitations (i) to (vii): (i) an improvement (increase) in optical clarity (Zebedee), relative to optical clarity (Zebedee) of a film of (A) alone or (B) alone, of from 3% to 35%, when tested according to the Optical Clarity-Zebedee Test Method; (ii) an improvement (increase) in gloss of 15% to 65%, when tested according to the Optical Gloss Test Method; or (iii) an improvement (decrease) in haze of from 15% to 65%, when tested according to the Optical Haze Test Method; or (iv) both (i) and (ii); (v) both (i) and (iii); (vi) both (ii) and (iii); or (vii) each of (i) to (iii).

4. A method of making the polyolefin blend of any one of claims 1 to 3, the method comprising: (a) contacting discrete solid particles and/or a discrete melt of constituent (A) with discrete solid particles and/or a discrete melt of constituent (B) to give an initial mixture of (A) and (B); (b) heating any solid particles of (A) and any solid particles of (B) in the initial mixture above their melting temperature to give a complete melt of constituents (A) and (B); (c) blending the complete melt to an even extent to give the polyolefin blend as a uniform melt blend of constant composition of (A) and (B) throughout.
5. The method of claim 4, further comprising (d) cooling the uniform melt blend to a temperature below its solidification temperature, thereby giving the polyolefin blend as a solid of constant composition of (A) and (B) throughout.
6. A polyolefin composition comprising the polyolefin blend of any one of claims 1 to 3, or the polyolefin blend made by the method of aspect 4 or 5, and at least one additive (constituent) (C) to (M): (C) a lubricant; (D) a polymer processing aid; (E) an antioxidant; (F) a metal deactivator; (G) an ultraviolet light-promoted degradation inhibitor ("UV stabilizer"); (H) a slip agent; (I) a hindered amine stabilizer; (J) an antiblock agent; (K) a colorant; (L) an antifog agent; and (M) an antistatic agent; with the proviso that the total amount of the at least one additive is from > 0 to 5 wt% of the polyolefin composition and the polyolefin blend is from < 100 to 80 wt% of the polyolefin composition.
7. A method of making the polyolefin composition of claim 6, the method comprising contacting the polyolefin blend with the at least one additive (C) to (M) to give the polyolefin composition.
8. A manufactured article comprising a shaped form of the polyolefin blend of any one of claims 1 to 3, the polyolefin blend made by the method of claim 4 or 5, or the polyolefin composition of claim 6.
9. A polyethylene film of the polyolefin blend of any one of claims 1 to 3 or the polyolefin blend made by the method of claim 4 or 5.
10. A method of making a polyethylene film, the method comprising restricting in one dimension the polyethylene blend of any one of claims 1 to 3 or the polyethylene blend made by the method of claim 4 or 5 or the polyolefin composition of claim 6, thereby giving the polyethylene film.