CLAIMS

1. A polymer composition comprising an ethylene alpha-olefin copolymer, wherein the polymer composition is characterized as having:

(a) a density in the range of from greater than about 0.910 g/cc to about 0.930 g/cc, as determined according to ASTM D1505;

(b) a melt index in the range of from greater than about 0.5 g/10 min to about 3 g/10 min, as determined according to ASTM D1238, Condition 190 °C/2.16 kg;

(c) a molecular weight distribution of from about 3.4 to about 12, as determined by gel permeation chromatography;

(d) a weight average molecular weight of from greater than about 85 kg/mol to about 160 kg/mol, as determined by gel permeation chromatography; and

(e) a z-average molecular weight of from greater than about 210 kg/mol to about 500 kg/mol, as determined by gel permeation chromatography.

2. The polymer of claim 1 having a number average molecular weight of from about 7 kg/mol to about 50 kg/mol.
3. The polymer of claim 1 having a high load melt index of from about 10 g/10min. to about 27 g/10min.
4. The polymer of claim 1 having a ratio of high load melt index to melt index of from about 16 to about 30.
5. The polymer of claim 1 having a zero shear viscosity of from about 3000 Pa.s to about 25000 Pa.s.
6. The polymer of claim 1 having a CY-a of from about 0.400 to about 0.600.
7. A film formed from the polymer of claim 1.
8. The film of claim 7 having a dart drop strength ranging from about 500 g/mil to about 2000 g/mil.
9. The film of claim 7 having a Elmendorf tear strength in the machine direction of from about 70 g/mil to about 300 g/mil.
10. The film of claim 7 having an Elmendorf tear strength in the transverse direction of from about 250 g/mil to about 650 g/mil.

11. The film of claim 7 having a seal initiation temperature of from about 85 °C to about 105 °C.

12. A fabricated film article comprising a polymer composition which comprises an ethylene alpha-olefin copolymer, wherein the polymer composition is characterized as having:

(a) a density in the range of from greater than about 0.910 g/cc to about 0.930 g/cc, as determined according to ASTM D1505;

(b) a melt index in the range of from greater than about 0.5 g/10 min to about 3 g/10 min, as determined according to ASTM D1238, Condition 190 °C/2.16 kg;

(c) a molecular weight distribution of from about 3.4 to about 12, as determined by gel permeation chromatography;

(d) a weight average molecular weight of from greater than about 85 kg/mol to about 160 kg/mol, as determined by gel permeation chromatography; and

(e) a z-average molecular weight of from greater than about 210 kg/mol to about 500 kg/mol, as determined by gel permeation chromatography;

such that the film article fabricated from the polymer composition is characterized as having a hot tack initiation temperature of less than about 96 °C, as determined according to ASTM F1921-98, method A.

13. The film of claim 12 wherein the polymer composition has a number average molecular weight of from about 7 kg/mol to about 50 kg/mol.

14. The film of claim 12 wherein the polymer composition a high load melt index of from about 10 g/10min. to about 27 g/10min.

15. The film of claim 12 wherein the polymer composition a ratio of high load melt index to melt index of from about 16 to about 30.

16. The film of claim 12 wherein the polymer composition having a zero shear viscosity of from about 3000 Pa.s to about 25000 Pa.s.

17. The film of claim 12 wherein the polymer composition a CY-a of from about 0.400 to about 0.600.

18. A fabricated film article comprising a polymer composition which comprises an ethylene alpha-olefin copolymer, wherein the polymer composition is characterized as having:

(a) a density in the range of from greater than about 0.910 g/cc to about 0.930 g/cc, as determined according to ASTM D1505;

(b) a melt index in the range of from greater than about 0.5 g/10 min to about 3 g/10 min, as determined according to ASTM D1238, Condition 190 °C/2.16 kg;

(c) a molecular weight distribution of from about 3.4 to about 12, as determined by gel permeation chromatography;

(d) a weight average molecular weight of from greater than about 85 kg/mol to about 160 kg/mol, as determined by gel permeation chromatography; and

(e) a z-average molecular weight of from greater than about 210 kg/mol to about 500 kg/mol, as determined by gel permeation chromatography

such that the film article fabricated from the polymer composition is characterized as having:

(i) a hot tack initiation temperature of less than about 96 °C, as determined according to ASTM F1921-98, method A; and

(ii) a hot tack initiation temperature range of greater than about 20 °C, as determined according to ASTM F1921-95, method A.

19. The film of claim 18 having a dart drop strength ranging from about 500 g/mil to about 2000 g/mil.

20. A method comprising forming the film of claim 18 into a package, placing an item into the package, and heat sealing the package to enclose the item placed therein.

CLAIMS

1. A film prepared from an ethylene alpha-olefin copolymer having:

(a) a density in the range of from greater than about 0.910 g/cc to about 0.930 g/cc, as determined according to ASTM D1505;

(b) a melt index in the range of from greater than about 0.5 g/10 min to about 3 g/10 min, as determined according to ASTM D1238, Condition 190 °C/2.16 kg;

(c) a molecular weight distribution of from about 3.4 to about 12, as determined by gel permeation chromatography;

(d) a weight average molecular weight of from greater than about 85 kg/mol to about 160 kg/mol, as determined by gel permeation chromatography;

(e) a z-average molecular weight of from greater than about 210 kg/mol to about 500 kg/mol, as determined by gel permeation chromatography;

(f) a ratio of high load melt index to melt index of from about 16 to about 30;

(g) less than 22 branches per 1000 carbon atoms; and

(h) a number average molecular weight of from about 7 kg/mol to about 50 kg/mol.

2. The film of claim 1 wherein the copolymer has a high load melt index of from about 10 g/10 min. to about 27 g/10 min.

3. The film of claim 1 wherein the copolymer has a zero shear viscosity of from about about 3000 Pa.s to about 25000 Pa.s.

4. The film of claim 1 wherein the copolymer has a CY-a of from about 0.400 to about 0.600.

5. The film of claim 1 having a Elmendorf tear strength in the machine direction of from about 70 g/mil to about 300 g/mil.

6. The film of claim 7 having an Elmendorf tear strength in the transverse direction of from about 250 g/mil to about 650 g/mil.

7. The film of claim 7 having a seal initiation temperature of from about 85 °C to about 105 °C.

8. A fabricated film article comprising an ethylene alpha-olefin copolymer having:

(a) a density in the range of from greater than about 0.910 g/cc to about 0.930 g/cc, as determined according to ASTM D1505;

(b) a melt index in the range of from greater than about 0.5 g/10 min to about 3 g/10 min, as determined according to ASTM D1238, Condition 190 °C./2.16 kg;

(c) a molecular weight distribution of from about 3.4 to about 12, as determined by gel permeation chromatography;

(d) a weight average molecular weight of from greater than about 85 kg/mol to about 160 kg/mol, as determined by gel permeation chromatography; and

(e) a z-average molecular weight of from greater than about 210 kg/mol to about 500 kg/mol, as determined by gel permeation chromatography;

(f) a ratio of high load melt index to melt index of from about 16 to about 30 such that the film article fabricated from the copolymer is characterized as having a hot tack initiation temperature of less than about 96 °C, as determined according to ASTM F 1921-98, method A; and

(g) less than 22 branches per 1000 carbon atoms; wherein the film at 1 mil thickness has a dart drop strength of from 700 g to about 2000 g.

9. The film of claim 8 wherein the copolymer has a number average molecular weight of from about 7 kg/mol to about 50 kg/mol.

10. The film of claim 8 wherein the copolymer has a high load melt index of from about 10 g/10 min. to about 27 g/10 min.

11. The film of claim 8 wherein the copolymer has a zero shear viscosity of from about 3000 Pa.s to about 25000 Pa.s.

12. The film of claim 8 wherein the copolymer has a CY-a of from about 0.400 to about 0.600.

13. A fabricated film article comprising an ethylene alpha-olefin copolymer having:

(a) a density in the range of from greater than about 0.910 g/cc to about 0.930 g/cc, as determined according to ASTM D1505;

(b) a melt index in the range of from greater than about 0.5 g/10 min to about 3 g/10 min, as determined according to ASTM D1238, Condition 190 °C/2.16 kg;

(c) a molecular weight distribution of from about 3.4 to about 12, as determined by gel permeation chromatography;

(d) a weight average molecular weight of from greater than about 85 kg/mol to about 160 kg/mol, as determined by gel permeation chromatography;

(e) a z-average molecular weight of from greater than about 210 kg/mol to about 500 kg/mol, as determined by gel permeation chromatography;

(f) a ratio of high load melt index to melt index of from about 16 to about 30 such that the film article fabricated from the copolymer is characterized as having:

(i) a hot tack initiation temperature of less than about 96 °C, as determined according to ASTM F 1921-98, method A; and

(ii) a hot tack initiation temperature range of greater than about 20 °C, as determined according to ASTM F 1921-95, method A; and

(g) less than 22 branches per 1000 carbon atoms; wherein the film at 1 mil thickness has a dart drop strength of from 700 g to about 2000 g.

14. A method comprising forming the film of claim 13 into a package, placing an item into the package, and heat sealing the package to enclose the item placed therein.

15. The film of claim 1 wherein the copolymer melt index value lies within a range that spans less than 2.5 g/10 min, and wherein the copolymer ratio of high load melt index to melt index value lies within a range that spans 14 values.

16. The film of claim 13 wherein the copolymer has a number average molecular weight of from about 7 kg/mol to about 50 kg/mol.