CLAIMS

1. A polymer composition comprising:

at least one low density polyethylene (LDPE) having a density of 0.916 to 0.940 g/cc measured according to ASTM D792 and a melt index (I_2) from 0.1 to 10.0 g/10 min when measured according to ASTM D1238 at a load of 2.16 kg and temperature of 190 °C;

at least one multimodal ethylene-based polymer having a density from 0.900 to 0.940 g/cc and a melt index (I_2) from 0.1 to 10 g/10 min, the multimodal ethylene-based polymer comprising a first ethylene-based component, a second ethylene-based component, and a third ethylene-based component, wherein each of the first ethylene-based component, the second ethylene-based component, and the third ethylene-based component are polymerized reaction products of ethylene monomer and at least one C_3–C_{12} α-olefin comonomer, wherein:

the first ethylene-based component has a density of 0.870 to 0.915 g/cc, and a weight-average molecular weight ($M_{w(GPC)}$) from 163,000 g/mol to 363,000 g/mol as measured according to gel permeation chromatography (GPC), the multimodal ethylene-based polymer comprising at least 20% by weight of the first ethylene-based component;

the second ethylene-based component has a density greater than the density of the first ethylene-based component and less than 0.940 g/cc, and a weight-average molecular weight ($M_{w(GPC)}$) from 88,500 g/mol to 363,000 g/mol as measured according to GPC; and

the third ethylene-based component has a density greater than the density of the second ethylene-based component.

2. The polymer composition of claim 1, wherein the first ethylene-based component and the second ethylene-based component each have a molecular weight distribution (MWD, $M_{w(GPC)}/M_{n(GPC)}$) less than 3, where $M_{w(GPC)}$ is a weight average molecular weight and $M_{n(GPC)}$ is a number average molecular weight as measured by GPC, and wherein the first ethylene-based component has a C_3–C_{12} α-olefin comonomer incorporation of at least 0.5 mol%, and

the second ethylene-based component has a C_3–C_{12} α-olefin comonomer incorporation of at least 0.5 mol~~.~~%.

3. The polymer composition of ~~any preceding~~ claim 1, wherein the multimodal ethylene-based polymer has a molecular weight distribution ($M_{w(GPC)}/M_{n(GPC)}$) of at least 5~~, or preferably from 5 to 12~~.

4. The polymer composition of ~~any preceding~~ claim 1, wherein the multimodal ethylene-based polymer comprises from 20 to 50 % by weight of the first ethylene-based component, from 10 to 30 % by weight of the second ethylene-based component, 25 to 60 % by weight of the third ethylene-based component.

5. The polymer composition of ~~any preceding~~ claim 1, wherein the melt index (I_2) of the multimodal ethylene-based polymer is from 0.1 to 5.0 g/10 min, where I_2 is measured according to ASTM D1238 at a load of 2.16 kg and temperature of 190 °C.

6. The polymer composition of ~~any preceding~~ claim 1, wherein the multimodal ethylene-based polymer has an I_{10}/I_2 value from 9 to 15, where I_{10} is measured according to ASTM D1238 at a load of 10 kg and temperature of 190 °C.

7. The polymer composition of ~~any preceding~~ claim 1, wherein the polymer composition comprises from 60 to 95% by weight of multimodal ethylene-based polymer and from 5 to 40% by weight of LDPE.

8. The polymer composition of ~~any preceding~~ claim 1, wherein the LDPE has a molecular weight distribution (MWD) from 3.5 to 10 as measured by GPC.

9. The polymer composition of ~~any preceding~~ claim 1, wherein the density of the first ethylene-based component is from 0.880 to 0.910 g/cc, and the melt index (I_2) of the first ethylene-based component is from 0.02 to 0.2 g/10 min.

10. The polymer composition of ~~any preceding~~ claim 1, wherein the density of the second ethylene-based component is from 0.890 to 0.930 g/cc, and the melt index (I_2) of the second ethylene-based component is from 0.05 to 1.0 g/10 min.

11. The polymer composition of ~~any preceding~~ claim 1, wherein the density of the third ethylene-based component is from 0.930 to 0.980 g/cc, and a weight-average molecular weight ($M_{w(GPC)}$) of less than 55,000 g/mol.

12. The polymer composition of ~~any preceding~~ claim 1, wherein the C_3–C_{12} α-olefin comonomer is 1-octene or 1-hexene.

13. The polymer composition of ~~any preceding~~ claim 1, wherein the third ethylene-based component has a melt index (I_2) greater than 50 g/10 mins.

14. The polymer composition of ~~any preceding~~ claim 1, wherein the multimodal ethylene-based polymer has a ~~Crystallization~~ crystallization ~~Elution~~ elution ~~Fractionation~~ fractionation (CEF) weight fraction greater than 23 % and a weight-average molecular weight ($M_{w(CEF)}$) greater than 130,000 g/mol at a temperature range from 20 °C to $T_{critical}$ (T_c).

15. An article comprising the polymer composition of ~~any preceding~~ claim 1, wherein the article is a blown film or a cast film.