CLAIMS

1. A thermoplastic composition comprising: from 0.5 wt% to 75.0 wt.% of a PCR comprising a blend of polyethylene recovered from post-consumer material, pre-consumer material, or combinations thereof; and from 25.0 wt.% to 99.5 wt% of virgin bimodal polyethylene, wherein:

the PCR has:

a density of from 0.900 g/cm^3 to 0.975 g/cm^3 when measured according to ASTM D792-08, Method B; and

a melt index (I_2) of from 0.1 dg/min to 3.0 dg/min when measured according to ASTM D1238-10, Method B, at 190 °C and a 2.16 kg load; and

the virgin bimodal polyethylene has:

a density of from 0.905 g/cm^3 to 0.935 g/cm^3 when measured according to ASTM D792-08, Method B;

a melt index (I_2) of from 0.1 dg/min to 1.0 dg/min when measured according to ASTM D1238-10, Method B, at 190 °C and a 2.16 kg load;

a melt flow ratio (MFR_{21}) greater than or equal to 30 but less than 70, wherein the melt flow ratio (MFR_{21}) is a ratio of a high load melt index (I_{21}) of the virgin bimodal polyethylene to the melt index (I_2) of the virgin bimodal polyethylene, and the high load melt index (I_{21}) is measured according to ASTM D1238-10, Method B, at 190 °C and a 21.6 kg load;

a molecular weight distribution ($M_{w(Abs)}/M_{n(Abs)}$) from 7 to 15, wherein the molecular weight distribution ($M_{w(Abs)}/M_{n(Abs)}$) is a ratio of a weight average molecular weight ($M_{w(Abs)}$) of the virgin bimodal polyethylene to a number average molecular weight ($M_{n(Abs)}$) of the virgin bimodal polyethylene, and the weight

average molecular weight ($M_{w(Abs)}$) and the number average molecular weight ($M_{n(Abs)}$) are measured using gel permeation chromatography (GPC); and

an improved comonomer content distribution (iCCD) wt. fraction greater than 30 wt.% at a temperature range of 35 to 90 °C, the iCCD wt. fraction being defined as a ratio of the mass eluted at temperatures from 35 °C to 90 °C for the virgin bimodal polyethylene resin to the total mass eluted for the virgin bimodal polyethylene resin when measured using an iCCD curve of mass eluted versus temperature, and

an iCCD wt. fraction greater than 8% at temperature range of 95-115 °C; and

wherein at least 90.0 wt.% of the thermoplastic composition is comprised of the PCR and the virgin bimodal polyethylene.

2. The thermoplastic composition of claim 1, wherein the virgin bimodal polyethylene is defined by a fraction less than or equal to 61% for the log(MW)=5, wherein MW is measured by GPC(Abs).

3. The thermoplastic composition of claim 1 wherein the I_2 of the virgin bimodal polyethylene is from 0.1 to 0.5.

4. The thermoplastic composition of claim 1, wherein the density of the virgin bimodal polyethylene is from 0.910 to 0.925 g/cm^3.

5. The thermoplastic composition of claim 1, wherein the PCR comprises a differential scanning calorimeter (DSC) second heat of fusion of 120 J/g to 230 J/g.

6. The thermoplastic composition of claim 1, wherein the PCR has a density of 0.900 to 0.940 g/cc and a melt index I_2 from 0.5 to 6 g/10 min when measured at 190 °C and 2.16 kg.

7. The thermoplastic composition of claim 1, wherein the PCR has a count of defect with an equivalent circular diameter in the range of 200-400 μm (per 24.6 cm^3 of film) greater than 500, and

a count of defect with an equivalent circular diameter in the range of 400-800 μm (per 24.6 cm^3 of film) greater than 250.

8. The thermoplastic composition of claim 1, further comprising up to 10 wt.% of one or more additives.

9. The thermoplastic composition of claim 1, wherein the thermoplastic composition comprises 5.0 wt.% to 55.0 wt.% of the PCR and from 45.0 wt.% to 95.0 wt.% of the virgin bimodal polyethylene.

10. The thermoplastic composition of claim 1, wherein the virgin bimodal polyethylene is defined by a Short Chain Branches/1000 Carbon value (SCB)/1000 C at $M_{n(Abs)}$ of greater than 8, preferably greater than 10, and more preferably greater than 12 as measured using GPC.

11. A method of making the thermoplastic composition of claim 1, the method comprising melt-blending the PCR, the virgin bimodal polyethylene, and any optional additives, thereby making the thermoplastic composition.

12. A manufactured article comprising the thermoplastic composition of claim 1.