What is claimed is:

1. An ethylene/1-hexene copolymer, wherein the ethylene/1-hexene copolymer has a density from 0.850 to 0.940 g/cm^3, a melt index (I_{21}) from 0.1 to 50 dg/min, a melt index (I_{21}/I_2) ratio less than or equal to 18.5, a $M_{w(Abs)}/M_{n(Abs)}$ from 2.0 to 3.5, a $M_{z(Abs)}/M_{w(Abs)}$ from 1.7 to 4.5, and a cumulative detector fraction (CDF_{LS}) at a molecular weight of $\geq$ 1,000,000 g/mol of greater than 100*(0.0536 - I_{21}*0.00224)%.

2. The ethylene/1-hexene copolymer of claim 1, wherein the density is from 0.870 to 0.930 g/cm^3 and the melt index (I_{21}) is from 1.0 to 10 dg/min and the ethylene/1-hexene copolymer has a $M_{z(Abs)}$ from 350,000 to 900,000 g/mol, a high density fraction (93-119 °C) from 5% to 30%, a short chain branching distribution from 10 to 50, and a composition distribution breadth index from 35 to 80.

3. The ethylene/1-hexene copolymer of claim 1, wherein the ethylene/1-hexene copolymer has an Instrumented Dart Impact (IDI) Peak Force greater than 315 Newtons and a cumulative detector fraction (CDF_{LS}) at a molecular weight of $\geq$ 1,000,000 g/mol of greater than 4%.

4. An ethylene/1-hexene copolymer, wherein the ethylene/1-hexene copolymer has a density from 0.850 to 0.940 g/cm^3, a melt index (I_{21}) from 0.1 to 10 dg/min, an Instrumented Dart Impact (IDI) Peak Force greater than 315 Newtons, and a cumulative detector fraction (CDF_{LS}) at a molecular weight of $\geq$ 1,000,000 g/mol of greater than 4%.

5. The ethylene/1-hexene copolymer of claim 4, wherein the ethylene/1-hexene copolymer has a melt strength from 7 to 15 cN.

6. The ethylene/1-hexene copolymer of claim 4, wherein the ethylene/1-hexene copolymer has a cumulative detector fraction (CDF_{LS}) at a molecular weight of $\geq$ 1,000,000 g/mol of greater than 100*(0.0536 - I_{21}*0.00224)%.

7. A thermoplastic composition comprising from 0.5 wt% to 75.0 wt% of a recycled polyethylene and from 25.0 wt% to 99.5 wt% of the ethylene/1-hexene copolymer of claim 1 or claim 4; wherein at least 90.0 wt% of the thermoplastic composition is comprised of the recycled polyethylene and the ethylene/1-hexene copolymer;

wherein the recycled polyethylene comprises either a first blend of polyethylenes recovered from post-consumer material, a second blend of polyethylenes recovered from pre-consumer material, or a combination of the first and second blends; and

wherein the recycled polyethylene has:

a density of from 0.900 g/cm^3 to 0.940 g/cm^3 when measured according to ASTM D792-08, Method B;

a melt index (I_2) of from 0.30 dg/min to 6.00 dg/min when measured according to ASTM D1238-10, Method B, at 190 °C and a 2.16 kg load.

8. A method for increasing Instrumented Dart Impact (IDI) Peak Force, the method comprising:

contacting a zirconocene catalyst and a hydrogenation catalyst with ethylene and 1-hexene in a gas-phase reactor under polymerizable conditions, wherein the **zirconocene** catalyst and the hydrogenation catalyst have a titanium to zirconium molar ratio from 0.100 to 0.700; and

making an ethylene/1-hexene copolymer having a density from 0.850 to 0.940 g/cm^3 and an Instrumented Dart Impact (IDI) Peak Force greater than 315 Newtons and a cumulative detector fraction (CDF_{LS}) at a molecular weight of $\geq$ 1,000,000 g/mol of greater than 4%.

9. The method of claim 8, wherein the ethylene/1-hexene copolymer has a melt strength from 7 to 15 cN.

10. The method of claim 8 wherein the ethylene/1-hexene copolymer is the ethylene/1-hexene copolymer of claim 1 or the ethylene/1-hexene copolymer of claim 4.