CLAIMS:

1. A copolymer comprising at least one block comprising C8-C12 olefin-derived units and at least one block comprising C4-C6 olefin-derived units and/or C5/C10 cyclic olefin derived units, wherein each block has a number average molecular weight (Mn) of at least 300 g/mole, and the copolymer has two glass transition temperatures (Tg), a number average molecular weight (Mn) of 500 g/mol to 40,000 g/mole, and an Mw/Mn value of at least 1.5; and wherein the C8-C12 olefin-derived units comprise at least one aromatic moiety, wherein the C4-C6 olefin-derved units comprise piperylene and other C4-C6 aliphatic olefins, and wherein the C5/C10 cyclic olefin derived units comprise dicyclopentadiene and other derivatives of cyclopentadiene.

2. The copolymer of claim 1, having a first Tg_1 and a second Tg_2, wherein Tg_2 is greater than Tg_1 by at least 5°C.

3. The copolymer of claim 2, wherein Tg_1 is within a range from -30°C to 60°C, and Tg_2 is within a range from -10°C to 120°C.

4. The copolymer of claim 1, wherein the at least one C8-C12 olefin block has a weight average molecular weight (Mw) within the range from 600 g/mole to 40,000 g/mole.

5. The copolymer of claim 1, wherein the at least one C4-C6 olefin block has a weight average molecular weight (Mw) within the range from 600 g/mole to 40,000 g/mole.

6. The copolymer of claim 1, wherein the at least one C5/C10 olefin block has a weight average molecular weight (Mw) within the range from 600 g/mole to 40,000 g/mole.

7. The copolymer of claim 1, having an Mw within the range from 1,000 g/mole to 80,000 g/mole.

8. The copolymer of claim 1, having an Mz/Mw of at least 2.0.

9. The copolymer of claim 1, having discontinuous domains of at least 0.5 μm in size.

10. The copolymer of claim 1, wherein the at least one block comprising C4-C6 olefin-derived units and/or C5/C10 cyclic olefin derived units comprises units derived from linear and cyclic C5/C10 olefins and/or diolefins.

11. The copolymer of claim 1, wherein the C4-C6 olefin block comprises units derived from piperylene.

12. The copolymer of claim 1, wherein the C5/C10 cyclic olefin block comprises units derived from cyclopentadiene, dicyclopentadiene, and derivatives thereof.

13. The copolymer of claim 1, wherein the C8-C12 olefin block comprises units derived from indene, styrene and combinations thereof.

14. The copolymer of claim 1, wherein at least 80 wt%, by weight of all units in the C4-C6 olefin block are C4 to C6 olefin- and/or diolefin-derived units.

15. The copolymer of claim 1, wherein at least 80 wt%, by weight of all units in the C5/C10 cyclic olefin block are C5 or C10 cyclopentadiene or dicyclopentadiene-derived units.

16. The copolymer of claim 1, wherein at least 80 wt%, by weight of all units in the C8-C12 olefin block are C8 to C12 aromatic-containing olefin-derived units.

17. A composition comprising the copolymer of claim 1 and a C4-C6 homopolymer, a C8-C12 homopolymer, C5/C10 cyclic homopolymer, or combination thereof.

18. A method of forming the copolymer of claim 1 comprising combining a first olefin with a catalyst in at least a first stage to form a first olefin block, and combining a second olefin with the same or different catalyst in at least a second stage to form a second olefin block; wherein the first olefin is selected from the group of C4-C6, C5/C10, and C8-C12 olefins and the second olefin is selected from the group of C4-C6, C5/C10, and C8-C12 olefins, wherein the first olefin is not the same as the second olefin.

19. The method of claim 17, wherein the catalyst is a Lewis Acid catalyst and the components are combined at a temperature within the range from -10°C to 50°C.

20. An adhesive composition or multi-layered film or a polymer composition comprising the copolymer of claim 1.