CLAIMS:

1. A roofing material comprising:

a substrate comprising at least one of a fiberglass, a polyester, or any combination thereof; and

a coating on the substrate,

wherein the coating comprises:

(a) 5% to 70% by weight of a polymer, based on a total weight of the coating;

(b) 10% to 70% by weight of a filler, based on the total weight of the coating,

wherein the filler comprises at least one of an organic filler, an inorganic mineral filler, and combinations thereof;

wherein the coating is free of asphalt;

wherein a thickness of the coating on the substrate is 20 mils to 200 mils.

2. The roofing material according to claim 1, wherein the roofing material is a roofing shingle or a roofing membrane.

3. The roofing material according to any one of claims 1 to 2, wherein the polymer comprises at least one of a polypropylene, a polyethylene, a copolymer of propylene and ethylene, low density polyethylene (LDPE), linear low density polyethylene (LLDPE), high density polyethylene (HDPE), thermoplastic polyurethane, or any combination thereof.

4. The roofing material according to any one of claims 1 to 3, wherein the roofing material further comprises granules on or in the coating.

5. The roofing material according to any one of claims 1 to 4, wherein the polymer comprises at least one of a copolymer of ethylene and octene, a copolymer of ethylene and hexene, a copolymer of ethylene and butene, isotactic polypropylene (IPP), atactic polypropylene (APP), polyurea, styrene-ethylene/butylene-styrene (SEBS) copolymer, styrene-ethylene/propylene-styrene (SEPS) copolymer, styrene-isoprene-styrene block (SIS) copolymer, styrene-butadiene-styrene (SBS) copolymer, polyisobutylene, polybutadiene, oxidized polyethylene, or any combination thereof.

6. The roofing material according to any one of claims 1 to 5, wherein the polymer comprises at least one of ethylene vinyl acetate (EVA), polyvinyl butyral (PVB), recycled polyvinyl butyral (rPVB), polyvinyl acetate (PVAC), poly(vinyl butyrate), poly(vinyl propionate), poly(vinyl formate), copolymers of PVAC, or any combination thereof.

7. The roofing material according to any one of claims 1 to 6, wherein the filler is at least one of calcium carbonate, barium sulfate, calcium sulfate, talc, limestone, perlite, silica, fumed silica, precipitated silica, quartz, aluminum trihydrate, magnesium hydroxide, colemanite, titanium dioxide, snow white, fly ash, graphene nanoparticles, carbon black, recycled rubber tires, recycled shingles, recycled thermoplastic resins, basalt, roofing granules, clay, and combinations thereof.

8. The roofing material according to any one of claims 1 to 7, further comprising 30% to 80% by weight of an oil, a resin, a wax, or any combination thereof, based on a total weight of the coating.

9. The roofing material according to claim 2, wherein the roofing shingle possesses a Tear CD property of at least 1450 g, as measured according to ASTM D 1922, as modified by ASTM D 228.

10. The roofing material according to claim 2, wherein the roofing shingle has an Accelerated Weather Test property greater than an Accelerated Weather Test property of an asphalt control, as measured according to modified ASTM G0155-05A, ASTM D 6878-08.

11. The roofing material according to any one of claims 1 to 10, wherein the roofing material further comprises 5% to 80% by weight of at least one of post-consumer asphalt shingles (PCRAS), post-manufacture shingle waste, recycled asphaltic membranes, polytransoctenamer rubber (TOR), ground tire rubber (GTR), acrylonitrile rubber (NBR), acrylonitrile butadiene styrene rubber (ABS), wood plastic, polypropylene (PP), atactic polypropylene (APP), or any combination thereof, based on the total weight of the coating.

12. The roofing material according to any one of claims 1 to 11, wherein the roofing material further comprises 2% to 10% by weight of a polytransoctenamer rubber (TOR) , based on a total weight of the coating.

13. The roofing material according to claim 8, wherein the oil in the roofing material comprises an oxidized hydrocarbon oil.

14. The roofing material according to any one of claims 1 to 13, wherein the roofing material further comprises at least one of a dye, a pigment, a fire retardant, a UV stabilizer, or any combination thereof.

15. The roofing material according to claim 1, wherein the polymer comprises polyvinyl butyral (PVB).

16. The roofing material according to claim 1 or claim 15, further comprising at least one of a tall oil, a resin, a recycled engine oil, a process oil, a heavy oil, or any combination thereof.

17. A method of producing a roofing membrane comprising:

obtaining a substrate;

obtaining a coating,

wherein the coating comprises:

(a) 5% to 70% by weight of a thermoplastic polymer, based on a total weight of the coating; and

(b) 10% to 70% by weight of a filler, based on a total weight of the coating; and

applying the coating to the substrate on a substantially standard manufacturing line for asphalt shingles at a standard speed of 110 feet per minute (FPM) to 1000 FPM, to form the roofing membrane.