WHAT IS CLAIMED IS:

1. A thermoplastic pelletizable polymer composition comprising:

(a) a polyamide; and

(b) a polymer polymerized from maleic anhydride and an olefin selected from the group consisting of ethylene, propylene, isobutylene, butene-1, octene, butadiene, isoprene, hexene, dodecene, dodecene-1, and tetradecene; wherein the polyamide and the polymer are compounded.

2. The thermoplastic pelletizable polymer composition of claim 1 wherein the polyamide is selected from the group consisting of nylon-6, nylon 6-6, a copolymer of nylon-6 and nylon 6-6, nylon-9, nylon-10, nylon-11, nylon-12, nylon 6-10, aromatic polyamides, elastomeric polyamides, and mixtures thereof.

3. The thermoplastic pelletizable polymer composition of claim 2 wherein the polyamide is selected from the group consisting of nylon-6, nylon 6-6, a copolymer of nylon-6 and nylon 6-6, and mixtures thereof.

4. The thermoplastic pelletizable polymer composition of claim 1 wherein the olefin is selected from the group consisting of ethylene, propylene, and isobutylene~~, butene-1, octene, butadiene, styrene, isoprene, hexene, dodecene, dodecene-1, and tetradecene~~.

5. The thermoplastic pelletizable polymer composition of claim 1 wherein the olefin is ethylene.

6. A cross-linked polymer composition comprising:

(a) a polyamide, and

(b) a polymer polymerized from maleic anhydride and an olefin selected from the group consisting of ethylene, propylene, isobutylene, butene-1, octene, butadiene, isoprene, hexene, dodecene, dodecene-1, and tetradecene; wherein the polyamide and the polymer are compounded at a processing temperature wherein the processing temperature is sufficient to promote cross-linking.

7. The cross-linked polymer composition of claim 6 wherein the polyamide is selected from the group consisting of nylon-6, nylon 6-6, a copolymer of nylon-6 and nylon 6-6, nylon-9, nylon-10, nylon-11, nylon-12, nylon 6-10, aromatic polyamides, elastomeric polyamides, and mixtures thereof.

8. The cross-linked polymer composition of claim 6 wherein the polyamide is selected from the group consisting of nylon-6, nylon 6-6, a copolymer of nylon-6 and nylon 6-6, nylon-11, and mixtures thereof.

9. The cross-linked polymer composition of claim 6 wherein the olefin is selected from the group consisting of ethylene, propylene, and isobutylene~~, butene-1, octene, butadiene, styrene, isoprene, hexene, dodecene, dodecene-1, and tetradecene~~.

10. The cross-linked polymer composition of claim 6 wherein the olefin is ethylene.

11. A method of preparing a compounded polyamide comprising:

compounding a polyamide mixture comprising a polyamide and an olefin-maleic anhydride copolymer, wherein the olefin is selected from the group consisting of ethylene, propylene, isobutylene, butene-1, octene, butadiene, isoprene, hexene, dodecene, dodecene-1, and tetradecene, at a processing temperature.

12. The method of claim 11, wherein the olefin is selected from the group consisting of ethylene, propylene, and isobutylene~~, butene-1, octene, butadiene, styrene, isoprene, hexene, dodecene, dodecene-1, and tetradecene~~.

13. The method of claim 11 wherein the olefin is ethylene.

14. The method of claim 11, wherein the polyamide is a nylon.

15. The method of claim 11 wherein the polyamide is selected from the group consisting of nylon-6, nylon 6-6, a copolymer of nylon-6 and nylon 6-6, nylon-9, nylon-10, nylon-11, nylon-12, nylon 6-10, aromatic polyamides, elastomeric polyamides, and mixtures thereof.

16. The method of claim 11 wherein the polyamide is selected from the group consisting of nylon-6, nylon 6-6, a copolymer of nylon-6 and nylon 6-6, and mixtures thereof.

17. The method of claim 13, wherein the olefin-maleic anhydride copolymer has a ratio of ethylene to maleic anhydride of 1:1.

18. The method of claim 17, wherein the olefin-maleic anhydride copolymer has a molecular weight of about 300 to 1,000,000.

19. The method of claim 17, wherein the olefin-maleic anhydride copolymer has a concentration of about 0.01% to about 0.5%, about 0.5% to about 1.0%, about 1.0% to about 1.5%, or 1.5% to about 3.0% w/w.

20. The method of claim 11, wherein the processing temperature is about 230°C to about 300°C.

21. The method of claim 11, wherein the polyamide mixture further comprises a glass fiber.

22. The method of claim 21, wherein the glass fiber has a concentration of about 0.1% to about 30%

23. The method of claim 11, wherein the polyamide mixture further comprises one or more stabilizing agents.

24. The method of claim 23, wherein each of the one or more stabilizing agents is independently selected from a group consisting of cuprous iodide, potassium iodide, tris (2,4-di-tert-butylphenyl)phosphite, and N,N'-hexane-1,6-diylbis(3-(3,5-di-tert-buty1-4-hydroxyphenylpropionamide)).

25. The method of claim 23, wherein each of the one or more stabilizing agents independently has a concentration of about 0.01 to about 1.0% w/w.

26. A method of producing a compounded polyamide, comprising compounding a polyamide mixture, where the polyamide mixture comprises an olefin-maleic anhydride copolymer with the olefin selected from the group consisting of ethylene, propylene, isobutylene, butene-1, octene, butadiene, isoprene, hexene, dodecene, dodecene-1, and tetradecene; a glass fiber and; one or more stabilizing agents at a temperature of between about 230°C and about 300°C .

27. A compounded polyamide produced by a process comprising compounding a polyamide mixture, comprising a polyamide and an olefin-maleic anhydride copolymer, wherein the olefin is selected from the group consisting of ethylene, propylene, and isobutylene at a processing temperature.

28. The compounded polyamide of claim 27 wherein the olefin-maleic anhydride polymer is an ethylene-maleic anhydride polymer.

29. The compounded polyamide of claim 27, wherein the polyamide is selected from the group consisting of nylon-6, nylon 6-6, a copolymer of nylon-6 and nylon 6-6, nylon-9, nylon-10, nylon-11, nylon-12, nylon 6-10, aromatic polyamides, elastomeric polyamides, and mixtures thereof.

30. The compounded polyamide of claim 27 wherein the polyamide is selected from the group consisting of nylon-6, nylon 6-6, a copolymer of nylon-6 and nylon 6-6, and mixtures thereof.

31. The compounded polyamide of claim 27, wherein the polyamide is selected from a group consisting of nylon-6 and nylon 6-6.

32. The compounded polyamide of claim 28, wherein the ethylene maleic anhydride copolymer has a ratio of ethylene to maleic anhydride of 1:1.

33. The compounded polyamide of claim 28, wherein the ethylene-maleic anhydride copolymer has a molecular weight of about 300 to 1,000,000.

34. The compounded polyamide of claim 27, wherein the ethylene-maleic anhydride has a concentration of about 0.01% to about 0.5%, about 0.5% to about 1.0%, about 1.0% to about 1.5%, or 1.5% to about 3.0% w/w.

35. The compounded polyamide of claim 27, wherein the processing temperature is from about 230°C to about 300°C.

36. The compounded polyamide of claim 27, wherein the polyamide mixture further comprises a glass fiber.

37. The compounded polyamide of claim 36, wherein the glass fiber has a concentration of about 0.1% to about 30%.