Described herein are compositions, comprising a polyamide, an olefin-maleic anhydride copolymer, an elastomeric polymer and optional stabilizers and other additives.

In one aspect, there is provided a polyamide composition produced by a process comprising the step of compounding a mixture comprising a polyamide, an olefin-maleic anhydride copolymer, and an impact modifier.

In another aspect, there is provided an article made from the polyamide composition as disclosed above.

Also described herein are compositions, comprising an ethylene-maleic anhydride copolymer and one or more elastomers or toughners with an optional stabilizers. The stabilizer package includes additives used individually or in combination. Illustrative stabilizers include, but are not limited to, one or more phenolic antioxidants such as N, N'-hexane-1,6-diylbis[3-(3,5-di-tert-butyl-4-hydroxyphenylpropionamide)] (like Irganox® 1098 and BNX1098), phosphites such as tris(2,4-di-tert-butylphenyl)phosphite (like Irgaphos® 168 and Benefos® 1680), cuprous iodide (CuI), and/or potassium iodide (KI). It is appreciated that the person skilled in the art of polymer compounding can choose an appropriate combination of additives or stabilizers for the polyamide, processing conditions, and intended use of the polyamide composition. In one illustrative embodiment, the stabilizer may be present in about 0.01% to about 5.0% w/w of the overall polymer formulation, or about 0.1% to about 2.0% w/w; or about 0.25% to 1.0% w/w in the final composition and in the range of about 1.0% to about 30% w/w or about 5.0 to about 15% w/w in the master batch.

Plasticizers, lubricants, colorants, rheology modifiers, friction modifiers, UV stabilizers, flame retardants, reinforcements, fillers and other additives known to one skilled in the art may be optionally added to the polyamide composition described herein depending on the application requirements.

In one embodiment, the method of producing polymer compositions of polyamides by compounding the polyamide with an elastomeric polymer, and an olefin-maleic anhydride polymer as described herein results in increases in the polyamide's molecular weight and/or favorable structural changes resulting in substantially improved impact strength and stretch performance (known as tensile elongation) in addition to

improvement in other properties such as tensile strength, flexural modulus, and heat deflection temperature.

In an illustrative embodiment of the method of producing a compounded polyamide described herein, the method optionally further comprises the step of converting the composition using a method known to one skilled in the art such as injection molding of the compounded polyamide. Optionally, the polyamide may be combined with the master batch of olefin-maleic anhydride copolymer directly during injection molding.

The compositions described herein are usually formed into a pellet form, to be used later in other plastic-forming processes such as extrusion, thermoforming, blow molding,