CLAIMS

What is claimed is:

1. A coating composition including a polyamideimide polymer or a polyamide amic acid resin polymer manufactured according to a process including:

preparing a solvent including N-formylmorpholine (NFM) or a combination of NFM and 3-methoxy N,N-dimethylpropanamide (MDP) as a co-solvent;

mixing methylene diphenyl diisocyanate (MDI) and trimellitic anhydride (TMA) with the solvent to generate the polymer solution;

diluting the polymer solution by adding an NFM:MDP solvent mixture or MDP into the generated polymer solution; and

processing the diluted polymer solution to generate a polyamideimide polymer or a polyamide-amic acid resin polymer in a coating solution.

2. The coating composition of claim 1, wherein the coating composition may be implemented to generate a coating by:

coating the diluted polymer solution onto a substrate surface to generate the coating; and

curing the coating.

3. The coating composition of claim 1, wherein the polymer solution is further combined with amine and water to produce a polyamic acid salt form of the polyamide-amic acid resin polymer.

4. The coating composition of claim 1, wherein the prepared solvent includes one or more additional co-solvents selected from cyclohexanone, propylene carbonate, methylethyl ketone, or 2-octanone.

5. The coating composition of claim 1, wherein the polymer solution further includes one or more lubricants, viscosity modifiers, colorant thickening agents, fillers, thinning solvents, thixotropic agents, binders, pigments, fillers, dispersants, surface tension modifiers, stabilizers and fluoropolymers.

6. The coating composition of claim 3, wherein the prepared solvent includes one or more additional co-solvents selected from cyclohexanone, propylene carbonate, methylethyl ketone, or 2-octanone.

7. The coating composition of claim 4, wherein the polymer solution further includes one or more lubricants, viscosity modifiers, colorant thickening agents, fillers, thinning solvents, thixotropic agents, binders, pigments, fillers, dispersants, surface tension modifiers, stabilizers and fluoropolymers.

8. The coating composition of claim 6, wherein the polymer solution further includes one or more lubricants, viscosity modifiers, colorant thickening agents, fillers, thinning solvents, thixotropic agents, binders, pigments, fillers, dispersants, surface tension modifiers, stabilizers and fluoropolymers.