What is claimed is:

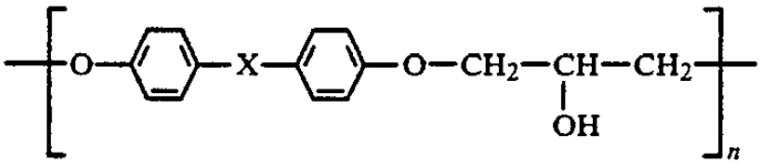
1. A method of forming a dry powder thermoplastic resin composition, the method comprising:

dissolving a solid thermoplastic resin selected from the group consisting of a solid epoxy resin and a solid phenoxy resin in a blend of a protic solvent and an aprotic solvent to form a slurry; and

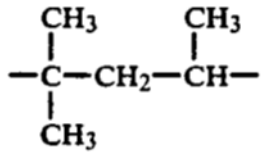
spray drying the slurry to form the dry powder thermoplastic resin composition.

2. The method of claim 1, wherein the solid epoxy resin comprises a bisphenol A epoxy resin, a bisphenol F epoxy resin, a bisphenol AF based epoxy resin, an o-cresol novolak epoxy resin, a phenol novolak epoxy resin, a modified phenol epoxy resin, a naphthalene epoxy resin, a triphenolmethane epoxy resin, an alkyl modified triphenolmethane epoxy resin, a triazine nucleus-containing epoxy resin, a dicyclopentadiene epoxy resin, a glycidylamine epoxy resin, a biphenyl epoxy resin, a biphenylaralkyl epoxy resin, a hydrogenated bisphenol A epoxy resin, an aliphatic epoxy resin, a stilbene epoxy resin, a triglycidyl ether of trisphenol-methane, an isocyanate-modified bisphenol A based epoxy resin, an isocyanate-modified bisphenol F based epoxy resin, an isocyanate modified bisphenol AF based epoxy resin, an isocyanate modified bisphenol A novolak epoxy resin~~s~~, a bisphenol F novolak epoxy resin, or a bisphenol AF novolak epoxy resin~~, or a combination thereof~~.

3. The method of claim 1, wherein the solid phenoxy resin has a structural formula



where n is an integer from about 8 to about 400 and X is selected from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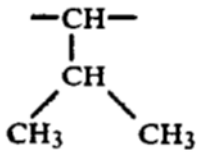
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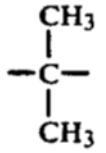
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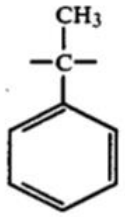
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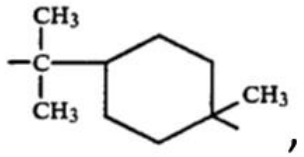
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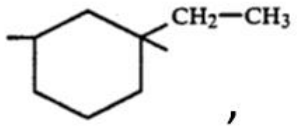
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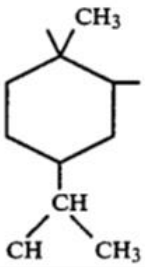
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4. The method of claim 1, wherein the protic solvent is selected from a C_1-C_6-alkanol, a C_2-C_4-alkandiol, an ether alkanol, water, acetic acid, formic acid, and a mixture thereof.

5. The method of claim 4, wherein the aprotic solvent is selected from an aromatic solvent, an alkane solvent, an ether solvent, an ester solvent, acetone, acetonitrile, dimethylformamide and a mixture thereof.

6. The method of claim 1, wherein the the blend includes the protic solvent and aprotic solvent at a weight ratio (protic solvent:aprotic solvent) of about 30:70 (w/w) to about 70:30 (w/w).

7. The method of claim 6, wherein the slurry contains between about 5 weight percent to about 10 weight percent of epoxy or phenoxy resin, based on the total weight of the slurry.

8. The method of claim 1, wherein the solid phenoxy resin is obtained by a condensation reaction between a dihydric phenol compound and epichlorohydrin, or by a polyaddition reaction between a dihydric phenol compound and a difunctional epoxy resin.

~~9. The method of claim 8, wherein the solid phenoxy resin is obtained in the presence of a reaction solvent.~~

~~10. The method of claim 9, wherein the reaction solvent comprises dioxane, tetrahydrofuran, acetophenone, N-methylpyrrolidone., dimethyl sulfoxide, N,N-dimethylacetamide, sulfolane or toluene.~~

~~11. The method of claim 1, wherein the slurry is spray-dried in a closed cycle spray drying apparatus.~~

~~12~~9. A dry powder thermoplastic resin composition obtained from the method of claim 1, wherein the dry powder thermoplastic resin composition comprises a plurality of particles

selected from epoxy resin particles and phenoxy resin particles, wherein the plurality of particles have an average particle size of about 150 µm or less.

~~13. The dry powder thermoplastic resin composition of claim 12, wherein the plurality of particles have an average particle size of about 150 µm or less.~~

~~14. The dry powder thermoplastic resin composition of claim 13, wherein the average particle size is about 20 µm or less.~~

~~15. The method of claim 12, wherein the dry powder thermoplastic resin composition has a residual moisture content of about 2% (w/w) or less.~~

~~16. Use of the dry powder thermoplastic resin composition of claim 12 in a coating, or an adhesive or a plastic, or a composite, or an electronic component.~~

~~17~~10. A method of forming a dry powder thermoplastic resin, the method comprising:

dissolving a solid thermoplastic resin selected from a solid phenoxy resin in a blend of a protic solvent and an aprotic solvent to form a slurry; and

spray drying the slurry to form the dry powder thermoplastic resin composition, wherein the dry powder thermoplastic resin composition comprises a plurality of phenoxy resin particles having an average particle size of between about 3 µm to about 25 µm and a residual moisture content of from about 0.01% (w/w) to about 1.5% (w/w) and wherein the spray drying is performed in a closed cycle spray dryer.

~~18~~11. A method to form a powdered epoxy or phenoxy resin, the method comprising:

providing a solid epoxy or phenoxy resin with an average molecular weight of at least about 1000 Dalton;

dissolving the solid epoxy or phenoxy resin in a blend of an alcohol solvent and an aprotic solvent to form a resulting solution, wherein the alcohol solvent has two to six carbon atoms, the blend has a weight ratio of the alcohol solvent to the polar aprotic solvent of between about 30:70 to about 70:30, and the resulting solution has between about 1 weight percent to about 10 weight percent epoxy or phenoxy resin, based on the total weight of the resulting solution; and

spray-drying the resulting solution in a closed-cycle spray drier to form the powdered epoxy or phenoxy resin.

~~19~~12. The method of claim ~~18~~11, wherein the solid epoxy or phenoxy resin has an average molecular weight of ~~at least~~between about 10,000 Dalton and 50,000 Dalton.

~~20. The method of claim 18, wherein the solid epoxy or phenoxy resin has an average molecular weight of at least about 30,000 Dalton.~~

~~21. The method of claim 18, wherein the solid epoxy or phenoxy resin has an average molecular weight of at least about 50,000 Dalton.~~

~~22~~13. The method of claim ~~18~~11, wherein the ratio of the alcohol solvent to the aprotic solvent is between about 40:60 to about 60:40.

~~23. The method of claim 18, wherein the ratio of the alcohol solvent to the aprotic solvent is about 50:50.~~

~~24. The method of claim 18, wherein the alcohol solvent is selected from a group consisting of ethanol, propanol, isopropanol, butanol, pentanol, and hexanol.~~

~~25. The method of claim 24, wherein the alcohol solvent is butanol.~~

~~26. The method of claim 18, wherein the aprotic solvent is selected from a group consisting of methyl ethyl ketone, methyl isobutyl ketone, toluene, xylene, dichloromethane, and tetrahydrofuran.~~

~~27. The method of claim 18, wherein the aprotic solvent is toluene.~~

~~28~~14. The method of claim ~~18~~11, wherein the resulting solution contains between about 5 weight percent to about 10 weight percent epoxy or phenoxy resin.

~~29~~15. The method of claim ~~18~~11, wherein the powdered epoxy or phenoxy resin comprises no more than about 5 weight percent residual solvent, based on the total weight of the powdered epoxy or phenoxy resin.

~~30. The method of claim 18, wherein the powdered epoxy or phenoxy resin comprises no more than about 1.5 weight percent residual solvent, based on the total weight of the powdered epoxy or phenoxy resin.~~

~~31. The method of claim 18, wherein the powdered epoxy or phenoxy resin comprises no more than about 0.5 weight percent residual solvent, based on the total weight of the powdered epoxy or phenoxy resin.~~

~~32. The method of claim 18, wherein the powdered epoxy or phenoxy resin comprises no more than about 0.3 weight percent residual solvent, based on the total weight of the powdered epoxy or phenoxy resin.~~

~~33~~16. The method of claim ~~18~~11, wherein the powdered epoxy or phenoxy resin has an average particle size of no more than about 20 µm.

~~34. The method of claim 18, wherein the powdered epoxy or phenoxy resin has an average particle size of no more than about 12 µm.~~

~~35~~17. A powdered epoxy or phenoxy resin, comprising:

no more than about 5 weight percent residual solvent; and

at least about 95 weight percent solid epoxy or phenoxy resin, wherein the solid epoxy or phenoxy resin has an average molecular weight of at least about 1000 Dalton; and

an average particle size of no more than about 20 µm and wherein the weight percent is based on the total weight of the powdered epoxy or phenoxy resin.

~~36~~18. The powdered epoxy or phenoxy resin of claim ~~35~~17, wherein the powdered epoxy or phenoxy resin comprises no more than about 1.5 weight percent residual solvent.

~~37. The powdered epoxy or phenoxy resin of claim 35, wherein the powdered epoxy or phenoxy resin comprises no more than about 0.5 weight percent residual solvent.~~

~~38. The powdered epoxy or phenoxy resin of claim 35, wherein the powdered epoxy or phenoxy resin comprises no more than about 0.3 weight percent residual solvent.~~

~~39. The powdered epoxy or phenoxy resin of claim 35, wherein the solid epoxy or phenoxy resin has an average molecular weight of at least about 10,000 Dalton.~~

~~40. The powdered epoxy or phenoxy resin of claim 35, wherein the solid epoxy or phenoxy resin has an average molecular weight of at least about 30,000 Dalton.~~

~~41~~19. The powdered epoxy or phenoxy resin of claim ~~35~~17, wherein the solid epoxy or phenoxy resin has an average molecular weight of at least about 50,000 Dalton.

~~42~~20. The powdered epoxy or phenoxy resin of claim ~~35~~17, wherein the solid epoxy or phenoxy resin has an average particle size of no more than about 12 µm.