WHAT IS CLAIMED IS:

1. A composition for forming a conformal gel coating to protect a substrate ~~from various environments~~, the composition comprising:

at least one film former comprising at least one of polyolefins, polyacrylates, polyurethanes, epoxies, polysiloxanes, or combinations thereof;

at least one additive; ~~and~~

~~optionally at least one solvent,~~

wherein said composition is configured to form a conformal gel coating that is deformable, flowable, and electrically insulating~~, and does not contain fluorine when applied as a coating~~.

~~2. The composition of claim 1, wherein the at least one film former comprises polyolefins, polyacrylates, polyurethanes, epoxies, polyamides, polyimides, polysiloxanes, or combinations thereof.~~

~~3~~2. The composition of claim 1, wherein the one or more additive is selected from the group consisting of:

antioxidants;

passivators;

UV absorbers or stabilizers;

rheology modifiers;

adhesion promoters;

wetting agents;

tackifiers;

plasticizers;

dispersing agents;

leveling agents;

defoamers;

processing additives; ~~or~~and

combinations thereof.

43. The composition of claim 23, wherein the antioxidants comprises a phenolic antioxidant, an amine antioxidant, a thioether antioxidant, a phosphite antioxidant, or combinations thereof.

54. The composition of claim 34, wherein the phenolic antioxidants are comprise one or more compounds selected from the group consisting of: Bbenzenepropanoic acid, 3,5-bis(1,1-dimethylethyl)- 4-hydroxy-, octadecyl ester (CAS# 2082-79-3), Bbenzenepropanoic acid, 3,5-bis(1,1-dimethylethyl)-4- hydroxy-,2,2-bis[[3-[3,5-bis(1,1-dimethylethyl)-4-hydroxyphenyl]-1-oxopropoxy]methyl]-1,3-propanediyl ester (CAS# 6683-19-8), a reaction mass of isomersproduct of: C7-9-alkyl 3-(3,5-di-tert-butyl-4-hydroxyphenyl) propionate (CAS# 125643-61-0), 1,3,5-Ttriazine-2,4,6(1H,3H,5H)-trione, 1,3,5- tris {[3,5-bis(1,1-dimethylethyl)-4-hydroxyphenyl] methyl}- (CAS# 27676-62-6) or Benzenepropanoic acid, 3-(1,1-dimethylethyl)- 4-hydroxy-5-methyl-, 2,4,8,10-tetraoxaspiro [5.5]undecane-3,9-diylbis(2,2-dimethyl-2,1- ethanediyl) ester (CAS# 90498-90-1), and combinations thereof.

56. The composition of claim 34, wherein the amine antioxidants comprise one or more compoundsare selected from the group consisting of: Bbenzenamine, N-phenyl-, reaction products withof 2,4,4-trimethylpentene (CAS# 68411-46-1), 1-Nnaphthalenamine, N-phenyl-ar-(1,1,3,3-tetramethylbutyl)- (CAS# 68259-36-9), 4,4'-Ddioctyldiphenylamine (CAS# 101-67-7), other alkylated amines, and combinations thereof.

76. The composition of claim 43, wherein the thioether antioxidants comprise one or more compounds are selected from the group consisting of: propanoic acid, 3-(dodecylthio)-,1,1'-[2,2-bis[[3-(dodecylthio)-1-oxopropoxy]methyl]-1,3-propanediyl] ester (CAS# 29598-76-3), or P propanoic acid, 3,3'-thiobis-, 1,1'-ditridecyl ester (CAS# 10595-72-9), and combinations thereof.

78. The composition of claim 34, wherein the phosphite antioxidants comprise one or more compounds are selected from the group consisting of: tris(2,4-di-tert-butylphenyl) phosphite (CAS# 31570-04-4), Bbutylidenebis[2-tert-butyl-5-methyl-p-

phenylene]-P,P,P',P'-tetratridecylbis(phosphine) (CAS# 13003-12-8), 12H-~~D~~dibenzo[d,g][1,3,2]dioxaphosphocin,2,4,8,10-tetrakis(1,1-dimethylethyl)-6-[(2-ethylhexyl)oxy]- (CAS# 126050-54-2)~~, or~~ Tris(2,4-ditert-butylphenyl) phosphite (CAS# 31570-04-4), and combinations thereof.

~~9~~8. The composition of claim ~~4~~2, wherein the passivators comprise a hydrazide or a triazole~~,~~ selected from the group consisting of dodecanedioic acid, 1,12-bis[2-(2-hydroxybenzoyl)hydrazide] (CAS# 63245-38-5), ~~B~~benzenepropanoic acid, 3,5-bis(1,1-dimethylethyl)- 4-hydroxy-, 2-[3-[3,5-bis(1,1-dimethylethyl)-4-hydroxyphenyl]- 1-oxopropyl]hydrazide (CAS# 32687-78-8), 1,2,4-Triazole (CAS# 288-88-0), 2-Hydroxy-N-1H-1,2,4-triazol-3-ylbenzamide (CAS# 36411-52-6), 1H-~~B~~benzotriazole-1-methanamine, N,N-bis(2-ethylhexyl)-ar-methyl- (CAS# 94270-86-7), 1H-1,2,4-~~t~~Triazole-1-methanamine, N,N-bis(2-ethylhexyl)- (CAS# 91273-04-0), and combinations thereof.

~~10~~9. The composition of claim ~~3~~2, wherein the UV absorbers or stabilizers comprise~~s~~ one or more compounds selected from the group consisting of: carbon black, rutile titanium oxide, hindered amines, benzophenones, and combinations thereof.

~~11~~10. The composition of claim ~~3~~2, wherein the rheology modifiers comprise~~s~~ one or more compounds selected from the group consisting of: sodium polyacrylates, polyamide wax, polyethylene wax, hydrogenated castor oils, attapulgite clay, fumed silica, precipitated silica, metal-oxide particles, and combinations thereof.

~~12~~11. The composition of claim ~~3~~2, wherein the adhesion promoters comprise~~s~~ one or more compounds selected from the group consisting of: chlorinated polyolefins, cyanoacrylate primers, polyester alkyl ammonium salts, aminofunctional polyethers, maleic anhydride, carboxylated polypropylene, glycidylmethacrylate-functionalized polyolefins, trimethoxyvinylsilane, silanes, and combinations thereof.

~~13~~12. The composition of claim ~~3~~2, wherein the wetting or dispersing agents comprises one or more compounds selected from the group consisting of: alkylammonium salts of a polycarboxylic acid, alkylammonium salt of an acidic polymer, salt of unsaturated polyamine amides and acidic polyesters, maleic anhydride functionalized ethylene butyl acrylate copolymer, other ionic or non-ionic surfactants, and combinations thereof.

~~14~~13. The composition of claim 2~~3~~, wherein the tackifiers comprises at least one of hydrogenated hydrocarbon resins or cycloaliphatic hydrocarbon resins.

~~15~~14. The composition of claim ~~3~~2, wherein the plasticizers comprises at least one compound selected from the group consisting of: hydrogenated cycloaliphatic hydrocarbon resins, trimellitates, high molecular weight orthophthalates, silicone oils, octyl epoxy esters ~~or~~and hydrotreated light naphthenic petroleum distillates.

~~16~~15. The composition of claim ~~3~~2, wherein the leveling agents comprises at least one compound selected from the group consisting of: silicones, liquid polyacrylates, ionic surfactants, non-ionic surfactants ~~or~~and ~~mixtures~~combinations thereof.

~~17. The composition of claim 1, which is formulated in one or more solvents.~~

~~18. The composition of claim 17, wherein the one or more solvent comprises aromatic solvents selected from toluene, xylene and naphtha, alkanes selected from isoparaffin solvents, hexane, methylcyclohexane, alkenes, alcohols selected from butanol, alkyl acetates selected from tert-butyl acetate, alkyl ethers, ketones selected from methyl ethyl ketone, aldehydes, and fully or partially halogenated hydrocarbons.~~

~~19~~16. The composition of claim 1, further comprising at least one pigment or UV dye selected from the group consisting of: 2,2'-(2,5-thiophenediyl)bis(5-tert-butylbenzoxazole) (CAS# 7128-64-5), 2,2'-(1,2-ethenediyl)bis(4,1-phenylene)bisbenzoxazole (CAS# 1533-45-5), s~~S~~olvent yellow 43 (CAS# 19125-99-

6), carbon black (CAS# 1333-86-4), ~~P~~pigment ~~Y~~yellow 101 (CAS# 2387-03-3), N,N'-~~B~~bis(2,6-diisopropylphenyl)-3,4,9,10-perylenetetracarboxylic Diimide (CAS# 82953-57-9), other perylene dyes and anthracene dyes.

~~20~~17. The composition of claim 1, ~~which~~wherein the conformal gel exhibits viscoeleastic, viscoplastic, or elasto-visco-plastic flow properties ~~when formulated in a solvent or once the solvent evaporates upon application~~.

~~21~~18. The composition of claim 1, ~~which~~wherein the composition is silicone-free.

~~22~~19. The composition of claim 1, ~~which~~wherein the composition is non-halogenated.

~~23~~20. The composition of claim 1, comprising~~having~~ a volatile organic content of 650 g/L or less.

~~24~~21. The composition of claim 1, ~~which~~wherein the conformal gel has a thickness ranging from 25 nm to 500 µm ~~when applied~~ on ~~various surfaces~~the substrate.

~~25~~22. The composition of claim 1, ~~which~~ wherein the conformal gel coating ~~is located between and~~ acts as a protective interface ~~for~~between the ~~a~~ surface and an ~~unwanted~~ environment.

~~26~~23. The composition of claim ~~25~~22, wherein the surface comprises a metal, and the ~~unwanted~~ environment is a corrosive ~~and aqueous~~ or conductive environment ~~.~~

~~27. The composition of claim 26, wherein the corrosive and aqueous environment is~~ selected from environments with high humidity, condensation, tap water, sweat, sebum, salt water, carbonated beverages, coffee, liquid coolant or antifreeze.

~~28~~24. The composition of claim ~~26~~23, wherein the surface comprises a metal that exhibits galvanic corrosion and the ~~unwanted~~ environment causes galvanic corrosion, or wherein the environment is an oxidizing environment containing at least one gas selected from air, oxygen and water vapor.

~~29. The composition of claim 26, wherein the surface comprises any metal that could undergo oxidation and the unwanted environment causes oxidation selected from air, oxygen, or water vapor.~~

~~30~~25. The composition of claim ~~26~~23, wherein the surface comprises ~~active~~ electronics in a printed circuit board and the ~~unwanted~~ environment comprises at least one corrosive gas~~es~~ selected from the group consisting of: chlorine, water vapor, hydrogen sulfide, hydrogen chloride or oxides of nitrogen and sulfur~~.~~

~~31. The composition of claim 26, wherein the surface comprises active electronics in a printed circuit board and the unwanted environment comprises~~, or at least one conductive liquid~~s~~ selected the group consisting of: from water, sweat, and other corrosive fluids.

~~32~~26. The composition of claim 1, ~~which~~wherein the composition exhibits electrical insulation properties that mitigate at least one of:~~.~~

~~33. The composition of claim 32, wherein said electrical insulating properties prevent~~ current leakage or arcing between two metal contacts when said composition is placed between said metal contacts~~.~~;

~~34. The composition of claim 32, wherein said electrical insulating properties prevent~~ current flowing from active electronics on a printed circuit board to conductive media or environments; and~~.~~

~~35. The composition of claim 32, wherein electrical insulating properties prevent~~ electrostatic discharge from a charge carrier to active electronics on a printed circuit board.

~~36~~27. The composition of claim 1, wherein said additives provides ~~said~~the composition with at least one property selected from: enhanced durability to oxidative degradation compared to a composition without said additives~~.~~; and

~~37. The composition of claim 1, wherein said additives provide said composition with~~ enhanced mechanical stability compared to a composition without said additives, wherein the composition~~and~~ does not undergo liquefaction, hardening or other phase changes.

~~38~~28. The composition of claim 1, wherein one or more of the additives ~~preferentially migrate to the coating/substrate~~is found at an interface between the coating and the substrate or is found at an area of the substrate that is free from the coating after application to a substrate~~to isolate the substrate from the rest of the coating~~.

~~39~~29. The composition of claim 1, wherein the additive is a passivator that is found at ~~migrates to~~ and adsorbs onto ~~the coating/substrate~~an interface between the coating and the substrate to inhibit catalytic activity from the substrate.

~~40. The composition of claim 1, wherein one or more of the additives preferentially migrate to an area of the substrate that is free from the coating to protect the substrate from the environment.~~

30. The composition of claim 1, further comprising at least one solvent.

~~41~~31. A conformal gel coating to protect an electronic element ~~from various environments~~, the coating comprising:

at least one film former which comprises at least one of polyolefins, polyacrylates, polyurethanes, epoxies, polysiloxanes or combinations thereof; ~~and~~

at least one additive,

~~and optionally at least one solvent,~~

wherein said gel coating is deformable, flowable, and electrically insulating~~, and does not contain fluorine~~.

32. The conformal gel coating of claim 31, further comprising at least one solvent.

~~42. The conformal gel coating of claim 41, wherein the at least one film former comprises polyolefins, polyacrylates, polyurethanes, epoxies, polyamides, polyimides, polysiloxanes, fluoropolymers, or combinations thereof.~~

~~43. The conformal gel coating of claim 41, wherein the one or more additive is selected from:~~

~~antioxidants;~~

~~passivators;~~

~~UV absorbers or stabilizers;~~

~~rheology modifiers;~~

~~adhesion promoters;~~

~~wetting agents;~~

~~tackifiers;~~

~~plasticizers;~~

~~dispersing agents;~~

~~leveling agents;~~

~~defoamers;~~

~~processing additives; and~~

~~combinations thereof.~~

~~44. The conformal gel coating of claim 42, wherein the antioxidant comprises a phenolic antioxidant, an amine antioxidant, a thioether antioxidant, a phosphite antioxidant, and combinations thereof.~~

~~45. The conformal gel coating of claim 44, wherein the phenolic antioxidants are selected from Benzenepropanoic acid, 3,5-bis(1,1-dimethylethyl)- 4-hydroxy-, octadecyl ester (CAS# 2082-79-3), Benzenepropanoic acid, 3,5-bis(1,1-dimethylethyl)-4- hydroxy-,2,2-bis[[3-[3,5-bis(1,1-dimethylethyl)-4-hydroxyphenyl]-1-oxopropoxy]methyl]-1,3-propanediyl ester (CAS# 6683-19-8), reaction mass of isomers of: C7-9-alkyl 3-(3,5-di-tert-butyl-4-hydroxyphenyl) propionate (CAS# 125643-61-0), 1,3,5-Triazine-2,4,6(1H,3H,5H)-trione, 1,3,5- tris {[3,5-bis(1,1-dimethylethyl)-4- hydroxyphenyl] methyl}- (CAS# 27676-62-6) or Benzenepropanoic acid, 3-(1,1-dimethylethyl)- 4-hydroxy-5-methyl-, 2,4,8,10-tetraoxaspiro [5.5]undecane-3,9-diylbis(2,2-dimethyl-2,1- ethanediyl) ester (CAS# 90498-90-1), and combinations thereof.~~

~~46. The conformal gel coating of claim 44, wherein the amine antioxidants are selected from Benzenamine, N-phenyl-, reaction products with 2,4,4-trimethylpentene (CAS# 68411-46-1), 1-Naphthalenamine, N-phenyl-ar-(1,1,3,3-tetramethylbutyl)- (CAS# 68259-36-9), 4,4'-Dioctyldiphenylamine (CAS# 101-67-7), other alkylated amines, and combinations thereof.~~

~~47. The conformal gel coating of claim 44, wherein the thioether antioxidants are selected from propanoic acid, 3-(dodecylthio)-,1,1'-[2,2-bis[[3-(dodecylthio)-1-oxopropoxy]methyl]-1,3-propanediyl] ester (CAS# 29598-76-3) or Propanoic acid, 3,3'-thiobis-, 1,1'-ditridecyl ester (CAS# 10595-72-9), and combinations thereof.~~

~~48. The conformal gel coating of claim 44, wherein the phosphite antioxidants are selected from tris(2,4-di-tert-butylphenyl) phosphite (CAS# 31570-04-4), Butylidenebis[2-tert-butyl-5-methyl-p-phenylene]-P,P,P',P'-tetratridecylbis(phosphine) (CAS# 13003-12-8), 12H-Dibenzo[d,g][1,3,2]dioxaphosphocin,2,4,8,10-tetrakis(1,1-dimethylethyl)-6-[(2-ethylhexyl)oxy]- (CAS# 126050-54-2) or Tris(2,4-ditert-butylphenyl) phosphite (CAS# 31570-04-4), and combinations thereof.~~

~~49. The conformal gel coating of claim 43, wherein the passivators comprise a hydrazide or a triazole, selected from dodecanedioic acid, 1,12-bis[2-(2-hydroxybenzoyl)hydrazide] (CAS# 63245-38-5), Benzenepropanoic acid, 3,5-bis(1,1-dimethylethyl)- 4-hydroxy-, 2-[3-[3,5-bis(1,1-dimethylethyl)-4-hydroxyphenyl]- 1-oxopropyl]hydrazide (CAS# 32687-78-8), 1,2,4-Triazole (CAS# 288-88-0), 2-Hydroxy-N-1H-1,2,4-triazol-3-ylbenzamide (CAS# 36411-52-6), 1H-Benzotriazole-1-methanamine, N,N-bis(2-ethylhexyl)-ar-methyl- (CAS# 94270-86-7), 1H-1,2,4-Triazole-1-methanamine, N,N-bis(2-ethylhexyl)- (CAS# 91273-04-0), and combinations thereof.~~

~~50. The conformal gel coating of claim 43, wherein the UV absorber or stabilizer comprises carbon black, rutile titanium oxide, hindered amines, benzophenones, and combinations thereof.~~

~~51. The conformal gel coating of claim 43, wherein the rheology modifier comprises sodium polyacrylates, polyamide wax, polyethylene wax, hydrogenated castor oils, attapulgite clay, fumed silica, precipitated silica, metal-oxide particles, and combinations thereof.~~

~~52. The conformal gel coating of claim 43, wherein the adhesion promoter comprises chlorinated polyolefins, cyanoacrylate primers, polyester alkyl ammonium salts, aminofunctional polyethers, maleic anhydride, carboxylated polypropylene, glycidylmethacrylate-functionalized polyolefins, trimethoxyvinylsilane, silanes, and combinations thereof.~~

~~53. The conformal gel coating of claim 43, wherein the wetting or dispersing agent comprises alkylammonium salts of a polycarboxylic acid, alkylammonium salt of an acidic polymer, salt of unsaturated polyamine amides and acidic polyesters, maleic anhydride functionalized ethylene butyl acrylate copolymer, other ionic or non-ionic surfactants, and combinations thereof.~~

~~54. The conformal gel coating of claim 43, wherein the tackifier comprises hydrogenated hydrocarbon resins or cycloaliphatic hydrocarbon resins.~~

~~55. The conformal gel coating of claim 43, wherein the plasticizer comprises hydrogenated cycloaliphatic hydrocarbon resins, trimellitates, high molecular weight orthophthalates, silicone oils, octyl epoxy esters or hydrotreated light naphthenicpetroleum distillates.~~

~~56. The conformal gel coating of claim 43, wherein the leveling agents comprises silicones, liquid polyacrylates, ionic surfactants, non-ionic surfactants or mixtures thereof.~~

~~57. The conformal gel coating of claim 42, which is formulated in one or more solvents.~~

~~58. The conformal gel coating of claim 57, wherein the one or more solvent comprises aromatic solvents selected from toluene, xylene and naphtha, alkanes selected from isoparaffin solvents, hexane, methylcyclohexane, alkenes, alcohols selected from butanol, alkyl acetates selected from tert-butyl acetate, alkyl ethers, ketones selected from methyl ethyl ketone, aldehydes, and fully or partially halogenated hydrocarbons.~~

~~59. The conformal gel coating of claim 41, further comprising at least one pigment or UV dye selected from 2,2'-(2,5-thiophenediyl)bis(5-tert-butylbenzoxazole) (CAS# 7128-64-5), 2,2'-(1,2-ethenediyl)bis(4,1-phenylene)bisbenzoxazole (CAS# 1533-45-5), Solvent yellow 43 (CAS# 19125-99-6), carbon black (CAS# 1333-86-4), Pigment Yellow 101 (CAS# 2387-03-3), N,N'-Bis(2,6-diisopropylphenyl)-3,4,9,10-perylenetetracarboxylic Diimide (CAS# 82953-57-9), other perylene dyes and anthracene dyes.~~

~~60. The conformal gel coating of claim 41, which exhibits viscoeleastic, viscoplastic, or elasto-visco-plastic flow properties when formulated in a solvent or once the solvent evaporates upon application.~~

~~61. The conformal gel coating of claim 41, which is silicone-free.~~

~~62. The conformal gel coating of claim 41, which is non-halogenated.~~

~~63. The conformal gel coating of claim 41, having a volatile organic content of 650 g/L or less.~~

~~64. The conformal gel coating of claim 41, which has a thickness ranging from 25 nm to 500 µm when applied on various surfaces.~~

~~65. The conformal gel coating of claim 41, which is located between and acts as a protective interface for a surface and an unwanted environment.~~

~~66. The conformal gel coating of claim 65, wherein the surface comprises a metal and the unwanted environment is a corrosive and aqueous.~~

~~67. The conformal gel coating of claim 66, wherein the corrosive and aqueous environment is selected from condensation, tap water, sweat, sebum, salt water, carbonated beverages, coffee, liquid coolant or antifreeze.~~

~~68. The conformal gel coating of claim 65, wherein the surface comprises a metal that exhibits galvanic corrosion and the unwanted environment causes galvanic corrosion.~~

~~69. The conformal gel coating of claim 65, wherein the surface comprises any metal that could undergo oxidation and the unwanted environment causes oxidation selected from air, oxygen, or water vapor.~~

~~70. The conformal gel coating of claim 65, wherein the surface comprises active electronics in a printed circuit board and the unwanted environment comprises corrosive gases selected from chlorine, water vapor, hydrogen sulfide, hydrogen chloride or oxides of nitrogen and sulfur.~~

~~71. The conformal gel coating of claim 65, wherein the surface comprises active electronics in a printed circuit board and the unwanted environment comprises conductive liquids selected from water, sweat, and other corrosive fluids.~~

~~72. The conformal gel coating of claim 41, which exhibits electrical insulating properties.~~

~~73. The conformal gel coating of claim 72, wherein said electrical insulating properties prevent current leakage or arcing between two metal contacts when said composition is placed between said metal contacts.~~

~~74. The conformal gel coating of claim 72, wherein said electrical insulating properties prevent current flowing from active electronics on a printed circuit board to conductive media or environments.~~

~~75. The conformal gel coating of claim 72, wherein electrical insulating properties prevent electrostatic discharge from a charge carrier to active electronics on a printed circuit board.~~

~~76. The conformal gel coating of claim 41, wherein said additives provides said composition with enhanced durability to oxidative degradation compared to a composition without said additives.~~

~~77. The conformal gel coating of claim 41, wherein said additives provide said composition with enhanced mechanical stability compared to a composition without said additives, and does not undergo liquefaction, hardening or other phase changes.~~

~~78. The conformal gel coating of claim 41, wherein one or more of the additives preferentially migrate to the coating/substrate interface to isolate the substrate from the rest of the coating.~~

~~79. The conformal gel coating of claim 41, wherein the additive is a passivator that migrates to and adsorbs onto the coating/substrate interface to inhibit catalytic activity from the substrate.~~

~~80. The conformal gel coating of claim 41, wherein one or more of the additives preferentially migrate to an area of the substrate that is free from the coating to protect the substrate from the environment.~~

33~~81~~. A method of treating an electronic device with a ~~gel~~ conformal gel coating, the method comprising:

applying the ~~gel~~ conformal gel coating to the electronic device, wherein the ~~gel~~ conformal gel coating comprising~~es~~: ~~a~~at least one film former which comprises at least one of polyolefins, polyacrylates, polyurethanes, epoxies, polysiloxanes or combinations thereof, ~~and an~~at least one additive,

t~~he coating composition optionally further comprising at least one solvent, dye, pigment or combinations thereof~~ wherein said conformal gel coating is deformable, flowable and electrically insulating.

34. The method of claim 33, wherein the conformal gel coating further comprises at least one solvent.

~~82. The method of claim 81, wherein the electronic device comprises a printed circuit board.~~

~~83. The method of claim 82, wherein the gel conformal coating is applied to part of or the entirety of the printed circuit board.~~

~~84. The method of claim 82, wherein the gel conformal coating covers male, female or both components of connectors in the electronic device without adversely affecting the electrical properties of the printed circuit board.~~

~~85. The method of claim 81, wherein the gel conformal coating exhibits viscoelastic, viscoplastic, or elasto-visco-plastic flow properties.~~

~~86. The method of claim 81, wherein the gel conformal coating is deposited to achieve a thickness ranging from 25 nm to 500 µm.~~

~~87. The method of claim 81, wherein the gel conformal coating is applied by atomized or non-atomized spraying, dip coating, film coating, jetting, needle dispensing, blade coating, or inkjet printing or combinations thereof.~~

~~88. The method of claim 81, wherein the film former, the additives, the pigment, or the dye can be formulated separately in solvent and applied successively.~~

~~89. The method of claim 82, wherein a passivator-containing or passivator-rich formulation is first applied on metal parts of the printed circuit board and then the film former with optional additives is applied.~~

~~90. The method of claim 89, wherein an antioxidant-containing or antioxidant-rich formulation is applied last to create an oxygen barrier at the free coating interface.~~

~~91. The method of claim 82, wherein varying thicknesses of the coating is deposited on different components of the printed circuit board based on desired environmental protection.~~

~~92. The method of claim 81, wherein the coating is applied on the top and bottom of the device to provide complete environmental protection.~~

35~~93~~. A substrate having a conformal gel coating thereon, the conformal gel coating comprising: ~~a~~at least one film former comprising at least one of polyolefins, polyacrylates, polyurethanes, epoxies, polysiloxanes or combinations thereof; and ~~an~~at least one additive, ~~the coating optionally further comprising a solvent, dye, pigment or combinations thereof~~, wherein the conformal gel coating is deformable, flowable, and electrically insulating.

~~94. The substrate of claim 93, which is an electronic device.~~

~~95. The substrate of claim 94, wherein the electronic device contains one or more printed circuit boards.~~

~~96. The substrate of claim 94, wherein the electronic device is an assembled consumer electronic or automotive device.~~

~~97. The substrate of claim 94, wherein the electronic device contains male and female connectors have said conformal gel coating applied thereto.~~

~~98. The substrate of claim 93, wherein the conformal gel coating has a thickness ranging from 25 nm - 500 µm.~~