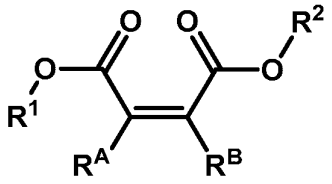
WHAT IS CLAIMED IS:

1. A method of bleaching hair, comprising:

applying a cosmetic formulation to the hair, wherein the cosmetic formulation comprises a bleaching formulation and a compound of Formula (I), wherein the compound of Formula (I) has the structure:



(I),

wherein:

each of R^1 and R^2 is independently selected from the group consisting of an optionally substituted C_8 alkyl; and

each of R^A and R^B is hydrogen;

wherein the amount of compound of Formula (I) in the cosmetic formulation is at least about 1% by weight; and

wherein in the cosmetic formulation has a basic pH of greater than about 9.

2. The method of Claim 1, further comprising combining the bleaching formulation and the compound of Formula (I) to form the cosmetic formulation.

3. The method of Claim 2, wherein the cosmetic formulation is formed within about 1 to 3 hours before being applied to the hair.

4. The method of Claim 2, wherein the cosmetic formulation is formed within about 30 minutes or less before being applied to the hair.

5. The method of Claim 1, wherein the applying the cosmetic formulation to the hair comprises applying the bleaching formulation and the compound of Formula (I) on the hair to form the cosmetic formulation.

6. The method of any one of Claims 1-5, further comprising rinsing the hair after applying the cosmetic formulation.

7. The method of any one of Claims 1-6, wherein the compound of Formula (I) is selected from the group consisting of dioctyl maleate and bis(2-ethylhexyl) maleate.

8. The method of any one of Claims 1-7, wherein the cosmetic formulation comprises about 2 wt.% to about 20 wt.%, or about 3 wt.% to about 10 wt.% of the compound of Formula (I).

9. The method of any one of Claims 1-8, wherein the bleaching formulation comprises one or more persulfate salts, or hydrogen peroxide, or a combination thereof.

10. The method of Claim 9, wherein the one or more persulfate salts comprise potassium persulfate, ammonium persulfate, or sodium persulfate, or combinations thereof.

11. The method of any one of Claims 1-10, wherein the cosmetic formulation further comprises one or more cosmetically acceptable excipients selected from the group consisting of a surfactant, a vitamin, a natural extract, a preservative, an antioxidant, a chelating agent, a protein, an amino acid, a humectant, a fragrance, an emollient, a penetrant, a thickener, a viscosity modifier, a hair fixative, a film former, an emulsifier, an opacifying agent, a propellant, a carrier, a salt, a buffer, an anti-static agent, an anti-frizz agent, an anti-dandruff agent, and a colorant, and combinations thereof.

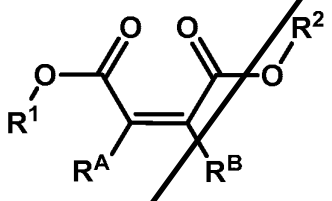
12. The method of any one of Claims 1-11, wherein the cosmetic formulation is in the form of a gel, liquid, cream, powder, or lotion.

13. The method of any one of Claims 1-12, wherein breakage of the hair is decreased by at least 5% compared to hair bleached with the bleaching formulation in the absence of the compound of Formula (I).

14. The method of any one of Claims 1-13, wherein the compound of Formula (I) is in a composition comprising at least 10% of one or more cationic surfactants.

15. A method of treating hair to reduced or prevent breakage, comprising:

applying a hair treatment formulation to damaged hair, wherein the hair treatment formulation comprises a compound of Formula (I) and a cosmetically acceptable carrier, and the compound of Formula (I) has the structure:



(I),

wherein:

each of R^1 and R^2 is independently selected from the group consisting of an optionally substituted C_8 alkyl; and

each of R^A and R^B is hydrogen;

wherein the amount of compound of Formula (I) in the hair treatment formulation is at least about 1% by weight; and

wherein breakage of the hair is decreased by at least 5% compared to untreated hair.

16. The method of Claim 15, wherein the damaged hair is caused by bleaching, relaxing, coloring, perming, or heat styling, or combination thereof.

17. The method of Claim 15 or 16, wherein the hair treatment formulation further comprises a coloring agent, a shampooing agent, or a conditioning agent, or combinations thereof.

18. The method of any one of Claims 15-17, wherein the compound of Formula (I) is selected from the group consisting of dioctyl maleate and bis(2-ethylhexyl) maleate.

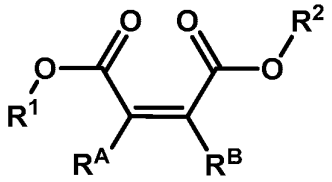
19. The method of any one of Claims 15-18, wherein the compound of Formula (I) is in a composition comprising at least 10% of one or more cationic surfactants.

20. The method of any one of Claims 15-19, wherein the hair treatment formulation is formed by mixing the compound of Formula (I) with a cosmetically acceptable carrier.

21. The method of Claim 20, wherein the hair treatment formulation is formed by mixing the composition comprising the compound of Formula (I) with purified water.

22. A method of treating nail, comprising:

applying a nail treatment formulation to one or more nails, wherein the nail treatment formulation comprises a compound of Formula (I) and one or more volatile solvents, wherein the compound of Formula (I) has the structure:



(I),

wherein:

each of R^1 and R^2 is independently selected from the group consisting of an optionally substituted C_8 alkyl; and

each of R^A and R^B is hydrogen;

wherein the amount of compound of Formula (I) in the nail treatment formulation is at least 5% by weight.

23. The method of Claim 22, wherein the one or more volatile solvents comprise ethyl acetate, or acetone, or a combination thereof.

24. The method of Claim 22 or 23, further comprising washing, rinsing, or drying, or a combination thereof, of one or more nails prior to the application of the nail treatment formulation.

25. The method of any one of Claims 22-24, wherein the nail treatment formulation is applied to one or more nails as a nail base coat or a nail primer before applying a nail coloring agent.

26. The method of any one of Claims 22-25, wherein the nail treatment formulation is applied to one or more nails for at least about 10 minutes prior to the application of the nail coloring agent.

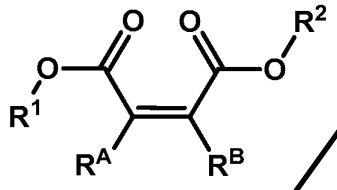
27. The method of any one of Claims 22-26, wherein the compound of Formula (I) is selected from the group consisting of dioctyl maleate and bis(2-ethylhexyl) maleate.

28. A cosmetic formulation, comprising:

about 1% wt. to about 12% wt. of hydrogen peroxide;

about 10% wt. to about 40% wt. of one or more persulfate salts; and

about 1% wt. to about 20% wt. of a compound of Formula (I), wherein the compound of Formula (I) has the structure:



(I),

wherein:

each of R^1 and R^2 is independently selected from the group consisting of an optionally substituted C_8 alkyl; and

each of R^A and R^B is hydrogen.

29. The cosmetic formulation of Claim 28, wherein the one or more persulfate salts comprise potassium persulfate, ammonium persulfate, or sodium persulfate, or combinations thereof.

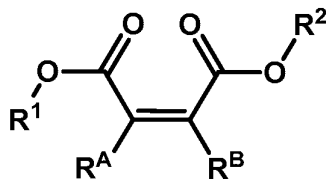
30. The cosmetic formulation of Claim 28 or 29, wherein the compound of Formula (I) is selected from the group consisting of dioctyl maleate and bis(2-ethylhexyl) maleate.

31. A method of styling hair, comprising:

applying a hair styling formulation to the hair, wherein the hair styling formulation comprises a compound of Formula (I); and

treating hair with a heated hair styling tool;

wherein the compound of Formula (I) has the structure:



(I),

wherein:

each of R^1 and R^2 is independently selected from the group consisting of an optionally substituted C_8 alkyl; and

each of R^A and R^B is hydrogen;

wherein the amount of compound of Formula (I) in the hair styling formulation is at least about 1% by weight.

32. The method of Claim 31, further comprising blow drying the hair prior to treating the hair with the heated hair styling tool.

33. The method of Claim 31 or 32, wherein the hair styling formulation further comprises one or more cosmetically acceptable excipients selected from the group consisting of a surfactant, a vitamin, a natural extract, a preservative, an antioxidant, a chelating agent, a protein, an amino acid, a humectant, a fragrance, an emollient, a penetrant, a thickener, a viscosity modifier, a hair fixative, a film former, an emulsifier, an opacifying agent, a propellant, a carrier, a salt, a buffer, an anti-static agent, an anti-frizz agent, an anti-dandruff agent, and a colorant, and combinations thereof.

34. The method of any one of Claims 31-33, wherein the compound of Formula (I) is selected from the group consisting of dioctyl maleate and bis(2-ethylhexyl) maleate.

35. The method of any one of Claims 31-34, wherein the method straightens the hair.

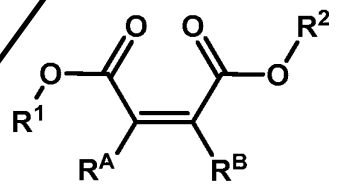
36. A method of perming hair, comprising:

applying a reducing agent to hair;

washing, rinsing or shampooing the hair; and

applying a perming formulation to the hair, wherein the perming formulation comprises a compound of Formula (I);

wherein the compound of Formula (I) has the structure:



(I),

wherein:

each of R^1 and R^2 is independently selected from the group consisting of an optionally substituted C_8 alkyl; and

each of R^A and R^B is hydrogen;

wherein the amount of compound of Formula (I) in the perming formulation is at least about 1% by weight.

37. The method of Claim 36, wherein the perming formulation further comprises a peroxide.

38. The method of any one of Claims 36-37, wherein the reducing agent comprises thioglycolic acid, thiolactic acid, dihydrolipoate, thioglycerol, mercaptopropionic acid, sodium

bisulfite, ammonium bisulfide, zinc formaldehyde sulfoxylate, sodium formaldehyde sulfoxylate, sodium metabisulfite, potassium borohydride, pegylated thiols, or hydroquinone, or combinations thereof.

39. The method of any one of Claim 36-38, wherein the reducing agent is applied to the hair prior to the perming formulation.

40. The method of any one of Claims 36-39, wherein the compound of Formula (I) is selected from the group consisting of dioctyl maleate and bis(2-ethylhexyl) maleate.

CLAIMS

1. A method of treating hair to reduced or prevent breakage, comprising:

   mixing a cosmetic formulation with a cosmetically acceptable carrier to form a hair treatment formulation;

   wherein the cosmetic formulation comprises bis(2-ethylhexyl) maleate and one or more surfactants, wherein the amount of bis(2-ethylhexyl) maleate in the cosmetic formulation is at least about 70% by weight, and wherein the amount of the one or more surfactants in the cosmetic formulation is about 0.5-10% by weight;

   wherein the cosmetically acceptable carrier comprises water; and

   wherein the hair treatment formulation comprises at least about 50 wt.% of water; and

   applying the hair treatment formulation to damaged hair, wherein breakage of the hair is decreased by at least 5% compared to untreated hair.

2. The method of Claim 1, wherein the damaged hair is caused by bleaching, relaxing, coloring, perming, or heat styling, or combinations thereof.
3. The method of Claim 1, wherein the hair treatment formulation further comprises a coloring agent, a shampooing agent, or a conditioning agent, or combinations thereof.
4. The method of Claim 1, wherein the water is purified water.
5. The method of Claim 1, wherein the one or more surfactants in the cosmetic formulation comprises a cationic surfactant.
6. The method of Claim 1, wherein the cosmetic formulation further comprises a cosmetically acceptable diluent.
7. The method of Claim 6, wherein the cosmetically acceptable diluent in the cosmetic formulation comprises an alcohol.
8. The method of Claim 7, wherein the amount of the alcohol in the cosmetic formulation is about 1-10% by weight.
9. The method of Claim 1, further comprising rinsing the hair treatment formulation applied to the hair.
10. The method of Claim 1, wherein the amount of bis(2-ethylhexyl) maleate in the cosmetic formulation is at least about 80% by weight.

11. The method of Claim 1, wherein the amount of bis(2-ethylhexyl) maleate in the cosmetic formulation is about 70-95% by weight.
12. The method of Claim 1, wherein the amount of the one or more surfactants in the cosmetic formulation is about 1-5% by weight.
13. The method of Claim 1, wherein the hair treatment formulation further comprises one or more cosmetically acceptable excipients selected from the group consisting of a vitamin, a natural extract, a preservative, an antioxidant, a chelating agent, a protein, an amino acid, a humectant, a fragrance, an emollient, a penetrant, a thickener, a viscosity modifier, a hair fixative, a film former, an emulsifier, an opacifying agent, a propellant, a carrier, a salt, a buffer, an anti-static agent, an anti-frizz agent, an anti-dandruff agent, and a colorant, and combinations thereof.
14. The method of Claim 1, wherein the one or more surfactants is selected from the group consisting of 3-aminopropane sulfonic acid, almond amide, almond amidopropyl betaine, almond amidopropylamine oxide, aluminum hydrogenated tallow glutamate, aluminum lanolate, aminoethyl sulfate, aminopropyl lauryl glutamine, ammonium C12-15 alkyl sulfate, ammonium C12-15 pareth sulfate, ammonium C12-16 alkyl sulfate, ammonium C9-10 perfluoroalkylsulfonate, ammonium capryleth sulfate, ammonium capryleth-3 sulfate, ammonium monoglyceride sulfate, ammonium sulfate, ammonium isothionate, ammonium cocoyl sarcosinate, ammonium cumene sulfonate, ammonium dimethicone copolyol sulfate, ammonium dodecylbenzenesulfonate, ammonium isostearate, ammonium laureth sulfate, ammonium laureth-12 sulfate, ammonium laureth-5 sulfate, ammonium laureth-6 carboxylate, ammonium laureth-7 sulfate, ammonium laureth-8 carboxylate, ammonium laureth-9 sulfate, ammonium lauroyl sarcosinate, ammonium lauryl sulfate, ammonium lauryl sulfosuccinate, ammonium myreth sulfate, ammonium myristyl sulfate, ammonium nonoxynol-30 sulfate, ammonium nonoxynol-4 sulfate, ammonium oleate, ammonium palm kernel sulfate, ammonium polyacrylate, ammonium stearate, ammonium tallate, ammonium xylene sulfonate, ammonium xylene sulfonate, amp-isostearoyl gelatin/keratin amino acids/lysine hydroxypropyltrimonium chloride, amp-isostearoyl hydrolyzed collagen, apricot kernel oil PEG-6 esters, apricot amide, apricot amidopropyl betaine, arachideth-20, avocadamide, avocadamidopropyl betaine, babassuamide, babassuamidopropyl betaine, babassuamidopropylamine oxide,

behenalkonium chloride, behenamide, behenamide, behenamidopropyl betaine, behenamine oxide, sodium laureth sulfate, sodium lauryl sulfate, a polyoxyether of lauryl alcohol, ceteareth-20, and combinations thereof

15. The method of Claim 1, wherein the one or more surfactants in the cosmetic formulation comprises an anionic surfactant.
16. The method of Claim 15, wherein the anionic surfactant is selected from the group consisting of sodium dodecylbenzene sulfonate, potassium dodecylbenzene sulfonate, ammonium dodecylbenzene sulfonate, sodium dodecylbenzene sulfonate, sodium bis-(2-ethylthioxyl)-sulfosuccinate, sodium lauryl sulfate, and combinations thereof.
17. The method of Claim 5, wherein the cationic surfactant is selected from the group consisting of benzalkonium chloride, benzethonium chloride, behentrimonium chloride, behentrimonium methosulfate, cetrimonium bromide, stearyl dimethylbenzyl ammonium chloride, a coconut amine, and combinations thereof.
18. The method of Claim 1, wherein the one or more surfactants in the cosmetic formulation comprises a nonionic surfactant.
19. The method of Claim 18, wherein the nonionic surfactant is selected from the group consisting of ethylene glycol monostearate, propylene glycol myristate, glyceryl monostearate, glyceryl stearate, polyglyceryl-4-oleate, sorbitan acylate, sucrose acylate, PEG-150 laurate, PEG-400 monolaurate, polyoxyethylene monolaurate, polysorbates, polyoxyethylene octylphenylether, PEG-1000 cetyl ether, polyoxyethylene tridecyl ether, polypropylene glycol butyl ether, Poloxamers, stearoyl monoisopropanolamide, polyoxyethylene hydrogenated tallow amide, and combinations thereof.
20. The method of Claim 1, wherein the one or more surfactants in the cosmetic formulation comprises a natural surface active agent.
21. The method of Claim 20, wherein the natural surface active agent is selected from the group consisting of saponin, lecithin, soybean phospholipid, hydrogenated soybean phospholipid, soybean lysophospholipid, hydrogenated soybean lysophospholipid, egg yolk lecithin, hydrogenated egg yolk lysophosphatidylcholine, phosphatidylcholine, phosphatidylethanolamine, phosphatidylserine, sphingophospholipid, sphingomyelin, ganglioside, bile acid, cholic acid, deoxycholic acid, sodium cholate, sodium deoxycholate,

spiculisporic acid, rhamnolipid, trehalose lipid, sophorolipid, mannosyl erythritol lipid, surfactin, salts thereof, and combinations thereof.

22. The method of Claim 1, wherein the one or more surfactants in the cosmetic formulation comprises an amphoteric surfactant.
23. The method of Claim 1, wherein the cosmetic formulation is provided in a kit comprising a first container and a second container, wherein the first container comprises the cosmetic formulation.
24. The method of Claim 23, wherein the second container is a spray container.
25. The method of Claim 23, wherein the second container comprises the cosmetically acceptable carrier.
26. The method of Claim 23, further comprising adding the cosmetically acceptable carrier to the second container.
27. The method of Claim 23, wherein the cosmetic formulation and the cosmetically acceptable carrier are mixed in the second container to form the hair treatment formulation.
28. The method of Claim 27, wherein the hair treatment formulation is applied to damaged hair from the second container.
29. A method of treating hair to reduced or prevent breakage, comprising:

mixing a cosmetic formulation with a cosmetically acceptable carrier to form a hair treatment formulation;

wherein the cosmetic formulation comprises bis(2-ethylhexyl) maleate, one or more surfactants and a cosmetically acceptable diluent, wherein the amount of bis(2-ethylhexyl) maleate in the cosmetic formulation is at least about 80% by weight, wherein the amount of the one or more surfactants in the cosmetic formulation is about 1-5% by weight, wherein the cosmetically acceptable diluent comprises an alcohol;

wherein the cosmetically acceptable carrier comprises water; and

wherein the hair treatment formulation comprises at least about 50 wt.% of water; and

applying the hair treatment formulation to damaged hair, wherein breakage of the hair is decreased by at least 5% compared to untreated hair.

30. The method of Claim 29, wherein the amount of the alcohol in the cosmetic formulation is about 1-10% by weight.