

Claims

1. A composition comprising:
 - (a) about 30% to about 100% by weight, based on the weight of the composition, of a mixture of one or more esterquats and one or more glycerides, wherein the esterquats comprise about 50% to about 80% by weight of the mixture, and the glycerides comprise about 20% to about 50% by weight of the mixture; and
 - (b) optionally, 0% to about 70% by weight of the composition of a solvent.
2. The composition of claim 1, wherein the esterquats are the quaternized reaction product of a fatty acid source and an alkanolamine in a ratio of about 1.5 to 3 moles of acyl groups per mole of alkanolamine.
3. The composition of claim 2, wherein the fatty acid source is a natural oil.
4. The composition of claim 3, wherein the natural oil is selected from the group consisting of sunflower oil, canola oil, soybean oil, walnut oil, jojoba oil, palm oil, borage oil, rapeseed oil, safflower oil, and mixtures thereof.
5. The composition of claim 3, wherein the natural oil is sunflower oil.
6. The composition of claim 2, wherein the fatty acid source comprises fatty acids derived from one or more fats or oils.
7. The composition of claim 2, wherein the fatty acid source comprises fatty acid alkyl esters.

8. The composition of claim 7, wherein the fatty acid alkyl esters comprise fatty acid methyl esters.
9. The composition of any one of claims 2-8, wherein the fatty acid source has carbon chain lengths of 8 to 32 carbon atoms.
10. The composition of claim 9, wherein the fatty acid source has a saponification value of less than about 225 and an Iodine Value of 50 or greater.
11. The composition of claim 9, wherein at least 60% of the carbon chains in the fatty acid source have at least one carbon-carbon double bond.
12. The composition of claim 11, wherein at least 50% of the carbon chains having at least one carbon-carbon double bond have at least two carbon-carbon double bonds.
13. The composition of any one of claims 1-12, wherein the alkanolamine is selected from the group consisting of triethanolamine (TEA), methyl diethanolamine (MDEA), ethyl diethanolamine, dimethyl amino-N-(2,3-propanediol), diethylamino-N-(2,3-propanediol), methylamino-N,N-bis(2,3-propanediol), ethylamino-N,N-bis(2,3-propanediol) and mixtures thereof.
14. The composition of claim 13, wherein the alkanolamine is TEA or MDEA.
15. The composition of any one of claims 1-14, wherein the quaternization reaction product is obtained by using an alkylating agent selected from the group consisting of dimethyl sulfate, methyl chloride, diethyl sulfate, benzyl chloride, ethyl benzyl chloride, methyl bromide, and epichlorohydrin.

16. The composition of claim 15, wherein the alkylating agent is methyl chloride or dimethyl sulfate.
17. The composition of any one of claims 1-16, wherein the glycerides comprise monoglycerides and/or diglycerides.
18. The composition of claim 17, wherein the monoglycerides and/or diglycerides have carbon chain lengths of 8-32 carbon atoms.
19. The composition of claim 17 or 18, wherein the glycerides are monoglycerides.
20. The composition of claim 17 or 18, wherein the glycerides are monoglycerides and diglycerides in a ratio of 3:1 to 1:3.
21. The composition of any one of claims 1-20, wherein the solvent is selected from the group consisting of propylene glycol, glyceryl esters, glycerol monooleate, glycol ethers, glycerin, sunflower oil, jojoba oil, alkyl lactyl lactates, isopropyl alcohol, and combinations thereof.
22. The composition of claim 21, wherein the solvent is propylene glycol or glyceryl caprylate/caprate.
23. The composition of claim 21, wherein the solvent is a mixture of alkyl lactyl lactate and glycerin.
24. The composition of claim 22 or 23, wherein the composition is a liquid.

25. The composition of claim 4, wherein the mixture is the direct esterification reaction product of sunflower oil reacted with methyl diethanolamine in a ratio of acyl groups to amine of 2:1.
26. The composition of claim 4, wherein the mixture is the direct esterification reaction product of sunflower oil reacted with methyl diethanolamine in a ratio of acyl groups to amine of 1.5:1 to 2:1.
27. The composition of claim 1 or 2, wherein the glycerides are separately added to the esterquat to obtain the mixture.
28. The composition of claim 27, wherein the glycerides comprise monoglycerides and/or diglycerides.
29. The composition of claim 28, wherein the monoglycerides and/or diglycerides have carbon chain lengths of 8-32 carbon atoms, preferably carbon chain lengths of 16 to 20 carbon atoms .
30. The composition of claim 28 or 29, wherein the glycerides are monoglycerides.
31. The composition of claim 28 or 29, wherein the glycerides are monoglycerides and diglycerides in a ratio of 3:1 to 1:3.
32. The composition of any one of claims 1-28, wherein the composition is a skin feel additive, a sun care additive, a textile treatment composition, or a leather conditioner.
33. A formulation comprising:

- (a) 0.01% to about 30% by weight of a composition active comprising one or more esterquats in an amount of about 50% to about 80%, based on the weight of the composition active, and one or more glycerides in an amount of about 20% to about 50% by weight based on the weight of the composition active;
 - (b) optionally, one or more additional components; and
 - (c) diluent to balance the formulation to 100%.
34. The formulation of claim 33, wherein the formulation is a hair conditioner, a hair repair composition, a conditioning personal cleansing product, a fabric softener, a fabric conditioner, a hard surface cleaner, or a skin care composition.
35. The formulation of claim 33, wherein the formulation is a hair care composition.
36. The formulation of claim 35, wherein the hair care composition, when applied to a hair tress, provides a wet combing Dia-Stron maximum peak load of about 50 gram mass force (gmf) or less, preferably about 40 gmf or less, more preferably about 20 gmf or less.
37. A method of conditioning hair comprising applying to the hair the formulation of claim 33.
38. A process for preparing a liquid esterquat composition comprising:
- (a) reacting a natural oil with an alkanolamine to obtain an intermediate mixture comprising monoesteramines, diesteramines, monoglycerides, diglycerides, glycerin, and free amines;

- (b) combining the intermediate mixture with an alkylating agent and, optionally, a solvent to form a reaction mixture; and
 - (c) quaternizing the esteramines in the intermediate mixture with the alkylating agent to form esterquats,
wherein the resulting liquid esterquat composition comprises about 30% to about 100% by weight of a mixture of about 50% to about 80% esteramines and about 20% to about 50% glycerides.
39. The process of claim 38, wherein the alkylating agent is selected from the group consisting of dimethyl sulfate, methyl chloride, diethyl sulfate, benzyl chloride, ethyl benzyl chloride, methyl bromide, and epichlorohydrin.
40. A hair care composition comprising:
- (a) about 0.01% to about 30% by weight of a composition active, wherein the composition active comprises (i) at least one esterquat derived from a fatty acid source having C8-C32 carbon chains, and (ii) optionally, a glyceride component derived from a fatty acid source having C8-C32 carbon chains, wherein the glyceride component comprises at least one monoglyceride, or diglyceride, or a combination thereof, wherein at least 60% of the carbon chains in the composition active have at least one carbon-carbon double bond;
 - (b) optionally, one or more additional components; and
 - (c) diluent to balance the formulation to 100%.

41. The composition of claim 40, wherein at least 50% of the carbon chains in the composition active having at least one carbon-carbon double bond have at least two carbon-carbon double bonds.
42. The composition of claim 34 or 41, wherein the esterquat comprises about 50% to 100% by weight of the composition active.
43. The composition of any one of claims 40-42, wherein the esterquat is derived from linoleic acid or conjugated linoleic acid as the fatty acid source.
44. The composition of claim 43, wherein the esterquat component is 100% by weight of the composition active and is derived from conjugated linoleic fatty acid.
45. The composition of any one of claims 40-42, wherein at least 60% of the carbon chains in the composition active have 16 to 20 carbon atoms.
46. The composition of any one of claims 40-45, wherein the hair care composition, when applied to a hair tress, provides a wet combing Dia-Stron maximum peak load of about 40 gram mass force (gmf) or less, preferably about 20 gmf or less.
47. A composition comprising:
 - (a) 10% to about 90% by weight of a composition active comprising one or more esterquats in an amount of about 50% to about 80%, based on the weight of the composition active, and one or more glycerides in an amount of about 20% to about 50% by weight based on the weight of the composition active;
 - (b) optionally, at least one fatty alcohol; and

- (c) diluent to balance the formulation to 100%.
- 48. The composition of claim 47, wherein the diluent comprises water, a solvent, or a combination thereof.
- 49. The composition of claim 47 or 48, wherein the fatty alcohol comprises 1% to 90% by weight of the composition.
- 50. The composition of any one of claims 47-49, wherein the composition is in the form of a flaked product or a dilutable concentrate.