esters are cationic, and therefore could potentially replace traditional cationic hair conditioning agents, such as behentrimonium chloride (BTAC) and cetrimonium chloride (CETAC), which traditionally have unfavorable environmental profiles.

[0004] One drawback of the neutralized amino acid ester is that it is a more expensive cationic ingredient than other cationic components typically used in hair care compositions, such as quaternary ammonium compounds and amidoamines. In addition, a greater amount of the neutralized amino acid ester, compared to the traditional cationic active agents, is often required to achieve acceptable performance. Using more of an ingredient that is already more costly results in a more expensive product to manufacture. It would therefore be desirable to have composition actives that are derived from renewable sources, but that can also deliver acceptable performance at lower cost, and at use levels comparable to the use levels used for traditional cationic active agents.

SUMMARY OF THE ~~INVENTION~~DISCLOSURE

[0005] The present technology is directed to compositions comprising a synergistic mixture of at least one neutralized amino acid ester and a glyceride component, wherein the glyceride component comprises monoglycerides, diglycerides, or mixtures thereof, and optionally, from 0 to 50% by weight triglycerides, based on the total weight of the glycerides. Surprisingly, it has been found that combining particular glycerides with the neutralized amino acid ester can improve the wet combing properties of the neutralized amino acid ester.

[0006] In one aspect, the present technology is directed to a composition comprising:

30%-100% by weight of the composition of a mixture comprising:

(a) a neutralized amino acid ester selected from the group consisting of Brassica L-isoleucine esylate, leucine isostearyl ester esylate, and combinations thereof, in an amount of 35%-85% by weight of the mixture; and

(b) a glyceride component in an amount of 15%-65% by weight of the mixture, wherein the glyceride component comprises monoglycerides, diglycerides, or a combination thereof, and optionally from 0 to 50% by weight triglycerides, based on the weight of the glyceride component, provided that, if the only glyceride in the glyceride component is a monoglyceride, that monoglyceride has a fatty acid carboxylate group of greater than 10 carbon atoms; and

optionally, 0-70% by weight of the composition of one of more solvents.

[0006a] In another aspect, the present technology is directed to a formulation comprising:

(a) 0.01% to about 50% by weight of a composition active comprising the composition as described above;

(b) optionally, one or more additional components; and

(c) diluent to balance the formulation to 100%.

[0007] In another ~~aspect~~example, the present technology is directed to a composition comprising:

(a) 0.01% to about 50% by weight of a composition active, wherein the composition active comprises a mixture of (i) a neutralized amino acid ester selected from the group consisting of Brassica L-isoleucine esylate, leucine isostearyl ester esylate, and combinations thereof, in an amount of 35%-85% by weight of the mixture, and (ii) a glyceride component in an amount

of 15% to 65% by weight of the mixture, wherein the glyceride component comprises monoglycerides, diglycerides, or a combination thereof, and optionally, 0 to 50% by weight triglycerides, based on the weight of the glyceride component, provided that, if the only glyceride in the glyceride component is a monoglyceride, that monoglyceride has a fatty acid carboxylate group of greater than 10 carbon atoms;

(b) optionally, one or more additional components; and

(c) diluent to balance the formulation to 100%. In one ~~embodiment~~example, the formulation is a hair conditioning composition.

[0007a] In another aspect, the present technology is directed to a hair care composition comprising:

(a) about 0.01% to about 50% by weight of a composition active, wherein the composition active comprises a mixture of (i) a neutralized amino acid ester selected from the group consisting of Brassica L-isoleucine esylate, leucine isostearyl ester esylate, and combinations thereof, in an amount of 35%-85% by weight of the mixture, and (ii) a glyceride component in an amount of 15% to 65% by weight of the mixture, wherein the glyceride component comprises monoglycerides, diglycerides, or a combination thereof, and optionally up to 50% by weight triglycerides, based on the weight of the glyceride component, provided that, if the only glyceride in the glyceride component is a monoglyceride, that monoglyceride has a fatty acid carboxylate group of greater than 10 carbon atoms;

(b) optionally, one or more additional components; and

(c) diluent to balance the formulation to 100%.

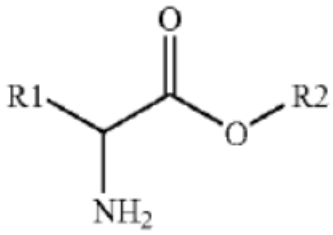
DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS

[0008] The compositions of the present technology comprise a mixture of particular neutralized amino acid esters and particular glycerides that together provide a synergistic mixture of actives that is derived from renewable sources, is cost effective, and provides

conditioning, softening, or cleaning performance that is better than either the neutralized amino acid ester or glycerides alone at comparable use levels.

[0009] The neutralized amino acid ester of the present technology is obtained by esterification of (i) an amino acid having a non-polar side chain wherein the amine group of the amino acid has been neutralized with an acid; with (ii) a long chain fatty alcohol. The amino acid ester of the present technology may be represented by the structure of formula (I):

(I)



wherein R^1 represents an alkyl group, that may be branched or linear, from one to ten carbon atoms, alternatively from two to six carbon atoms. R^2 represents a carbon chain that may be linear or branched, saturated or unsaturated. The carbon chain may have from eight to fifty carbon atoms, alternatively eight to thirty-two carbon atoms, alternatively eight to twenty-four carbon atoms. Amino acids for the formation of the ester include any

Claims

1. A composition comprising:

30%-100% by weight of the composition of a mixture comprising:

(a) a neutralized amino acid ester selected from the group consisting of Brassica L-isoleucine esylate, leucine isostearyl ester esylate, and combinations thereof, in an amount of 35%-85% by weight of the mixture; and

(b) a glyceride component in an amount of 15%-65% by weight of the mixture, wherein the glyceride component comprises monoglycerides, diglycerides, or a combination thereof, and optionally up to 50% by weight triglycerides, based on the weight of the glyceride component, provided that, if the only glyceride in the glyceride component is a monoglyceride, that monoglyceride has a fatty acid carboxylate group of greater than 10 carbon atoms; and

optionally, 0-70% by weight of the composition of one of more solvents.

2. The composition of claim 1, wherein an amine group of the amino acid is neutralized by an acid selected from the group consisting of ethane sulfonic acid, hydrochloric acid, sulfuric acid, phosphoric acid, lactic acid, citric acid, maleic acid, adipic acid, boric acid, glutamic acid, glycolic acid, acetic acid, ascorbic acid, uric acid, oxalic acid, aspartic acid, butyric acid, lauric acid, glycine, formic acid, and combinations thereof.

3. The composition of claim 1 or 2, wherein the glyceride component comprises a combination of monoglycerides and diglycerides having a carbon chain length of 8-32 carbon atoms.

~~4. The composition of claim 3, wherein the monoglycerides and diglycerides have a carbon chain length of 16-22 carbon atoms.~~

4~~5~~. The composition of any one of claims 1-3~~4~~, wherein at least 50% of the carbon chains in the monoglycerides and diglycerides in the glyceride component have at least one double bond.

5~~6~~. The composition of any one of claims 1-4~~5~~, wherein the monoglycerides and diglycerides are present in the glyceride component in a ratio of 3:1 to 1:3.

~~7. The composition of claim 6, wherein the ratio of monoglycerides to diglycerides is 1:1.~~

6~~8~~. The composition of any one of claims 1-5~~7~~, wherein the neutralized amino acid ester comprises about 50% to about 60% by weight of the mixture, and the glyceride component comprises about 40% to about 50% by weight of the mixture.

~~9. The composition of claim 8, wherein the neutralized amino acid ester comprises about 55% to 57% by weight of the mixture, and the glyceride component comprises about 43% to 45% by weight of the mixture.~~

7. The composition of any one of claims 1-6, wherein the composition comprises 1%-70% by weight of the solvent and 30%-99% by weight of the mixture of neutralized amino acid ester and glyceride component.

8~~10~~. The composition of any one of claims 1-7~~9~~, wherein the solvent is selected from the group consisting of propylene glycol, 1,3-propandiol, glycol ethers, glycerin, sorbitan esters, lactic acid, alkyl lactyl lactates, isopropyl alcohol, ethyl alcohol, dimethyl adipate, oleyl alcohol, 1,2-isopropylidine glycerol, benzyl alcohol, dimethyl lauramide myristamide, N-butyl lactate, trimethyl citrate, dimethyl lactide, laureth-2 lactide, 1,2-butylene carbonate, conjugated linoleic acid, isosorbide dimethyl ether, propylene carbonate, C6-C18 methyl esters, citrate, C12-15 alkyl benzoate, and combinations thereof.

9~~11~~. A formulation comprising:

(a) 0.01% to about 50% by weight of a composition active comprising the composition of any one of claims 1-8~~10~~;

(b) optionally, one or more additional components; and

(c) diluent to balance the formulation to 100%.

~~12. The formulation of claim 11, wherein the formulation is a hair conditioner, a hair repair composition, a personal cleansing product, a fabric softener, a fabric conditioner, a hard surface cleaner, or a skin care composition.~~

~~13. The formulation of claim 11 or 12, wherein the formulation, when applied to a hair tress, provides a wet combing Dia-Stron maximum peak load of about 50 gram mass force (gmf) or less.~~

10~~14~~. A hair care composition comprising:

(a) about 0.01% to about 50% by weight of a composition active, wherein the composition active comprises a mixture of (i) a neutralized amino acid ester selected from the group consisting of Brassica L-isoleucine esylate, leucine isostearyl ester esylate, and combinations thereof, in an amount of 35%-85% by weight of the mixture, and (ii) a glyceride component in an amount of 15% to 65% by weight of the mixture, wherein the glyceride component comprises monoglycerides, diglycerides, or a combination thereof, and optionally up to 50% by weight triglycerides, based on the weight of the glyceride component, provided that, if the only glyceride in the glyceride component is a monoglyceride, that monoglyceride has a fatty acid carboxylate group of greater than 10 carbon atoms;

(b) optionally, one or more additional components; and

(c) diluent to balance the formulation to 100%.

11~~15~~. The composition of claim 10~~14~~, wherein an amine group of the amino acid is neutralized by an acid selected from the group consisting of ethane sulfonic acid, hydrochloric acid, sulfuric acid, phosphoric acid, lactic acid, citric acid, maleic acid, adipic acid, boric acid, glutamic acid, glycolic acid, acetic acid, ascorbic acid, uric acid, oxalic acid, aspartic acid, butyric acid, lauric acid, glycine, formic acid, and combinations thereof.

12~~16~~. The composition of claim 10~~14~~ or 11~~15~~, wherein the glyceride component comprises a combination of monoglycerides and diglycerides having a carbon chain length of 8-32 carbon atoms.

~~17. The composition of claim 16, wherein the monoglycerides and diglycerides have a carbon chain length of 16-22 carbon atoms.~~

13~~18~~. The composition of any one of claims 10-12~~14-17~~, wherein at least 50% of the carbon chains in the monoglycerides and diglycerides in the glyceride component have at least one double bond.

14~~19~~. The composition of any one of claims 10-13~~14-18~~, wherein the monoglycerides and diglycerides are present in the glyceride component in a ratio of 3:1 to 1:3.

~~20. The composition of claim 19, wherein the ratio of monoglycerides to diglycerides is 1:1.~~

15~~21~~. The composition of any one of claims 10-14~~-20~~, wherein the neutralized amino acid ester comprises about 50% to about 60% by weight of the mixture, and the glyceride component comprises about 40% to about 50% by weight of the mixture.

~~22. The composition of claim 21, wherein the neutralized amino acid ester comprises about 55% to about 57% by weight of the mixture, and the glyceride component comprises about 43% to about 45% by weight of the mixture.~~

16~~23~~. The composition of any one of claims 10-15~~14-22~~, wherein the composition active further comprises a solvent.

17~~24~~. The composition of claim 16~~23~~, wherein the solvent is selected from the group consisting of propylene glycol, 1,3-propandiol, glycol ethers, glycerin, sorbitan esters, lactic acid, alkyl lactyl lactates, isopropyl alcohol, ethyl alcohol, dimethyl adipate, oleyl alcohol, 1,2-isopropylidine glycerol, benzyl alcohol, dimethyl

lauramide myristamide, N-butyl lactate, trimethyl citrate, dimethyl lactide, laureth-2 lactide, 1,2-butylene carbonate, conjugated linoleic acid, isosorbide dimethyl ether, propylene carbonate, C6-C18 methyl esters, citrate, C12-15 alkyl benzoate, and combinations thereof.

18~~25~~. The composition of claim 16~~23~~ or 17~~24~~, wherein the solvent amount in the composition active is about 1% to about 70% by weight.

~~26. The composition of any one of claims 14-25, 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.~~

19~~27~~. The composition of any one of claims 10-18~~14-26~~, wherein the diluent comprises water, a solvent, or a combination thereof.

20~~28~~. The composition of any one of claims 10-19~~14-27~~, wherein the composition active is present in the composition in an amount of 0.01% to about 12% by weight of the composition.

~~29. The composition of claim 28, wherein the amount of the composition active is about 0.1% to about 5% by weight of the composition.~~

~~30. The composition of any one of claims 14-29, wherein the composition provides better wet combing, as measured by a wet combing Dia-Stron process, compared to a similar composition containing the same amount of composition active but without the glyceride component.~~