METHODS, COMPOSITIONS AND USES RELATING THERETO

The present invention relates to a method of treating a material, to compositions for use in such methods and to uses relating thereto. In particular the present invention relates to a method of treating a keratinous material, especially hair, to provide a benefit to the material.

The appearance, condition and cleanliness of their hair are of great significance to many people. As a result there is a vast array of hair care products available offering a wide range of benefits and containing a huge number of different components. However popular hair styles change continually with fashion trends and technological developments in hair styling appliances means that there is a continuing need for different and improved hair care compositions. Furthermore as we learn more about the toxicity of certain chemicals and their environmental impact there is an increasing requirement to take these considerations into account when developing cosmetic products.

For example one previously used constituent of cosmetic hair care compositions is formaldehyde. However formaldehyde is a suspected carcinogen and thus its use in cosmetic compositions is now strictly regulated and highly undesirable.

The appearance, condition and cleanliness of textiles and fabric materials is also of considerable importance and the stresses encountered by these materials in the environments in which they are used may have a deleterious effect on them.

It is an aim of the present invention to provide means for enhancing at least one property of a material.

Summary of Invention

In one aspect of the disclosure, there is provided a method of treating a material, the method comprising the steps of:

(1) contacting the material with a composition comprising an α-hydroxy aldehyde having one hydroxy substituent;

(2) contacting the material with a composition comprising a polycarboxylic acid derived chelating agent and/or a salt of an amine and a carboxylic acid having 4 to 10 carbon atoms.

In another aspect of the disclosure, there is provided a hair care composition comprising an α-hydroxy aldehyde having one hydroxy substituent; and a polycarboxylic acid derived chelating agent and/or a salt of an amine and a carboxylic acid having 4 to 10 carbon atoms.

In yet another aspect of the disclosure, there is provided the use of an α-hydroxy aldehyde having one hydroxy substituent; and a polycarboxylic acid derived chelating agent and/or a salt of an amine and a carboxylic acid having 4 to 10 carbon atoms to combat colour loss from dyed hair.

In another aspect of the disclosure, there is provided a packaged hair colouring product comprising one or more compositions wherein the one or more compositions together comprise at least one dye compound and/or one dye precursor compound; an α-hydroxy aldehyde having one hydroxyl substituent; and a polycarboxylic acid derived chelating agent and/or a salt of an amine and a carboxylic acid having 4 to 10 carbon atoms.

Detailed Description of the Invention

According to a first aspect of the present invention there is provided a method of treating material, the method comprising the steps of:

(1) contacting the material with a composition comprising an electrophilic species selected from aldehydes, succinimidyl esters and mixtures thereof;
(2) contacting the material with a composition comprising a chelating agent and/or a salt of an amine and a carboxylic acid.

Steps (1) and (2) may be carried out in any order. They may be carried out sequentially or simultaneously. In some embodiments step (1) is carried our before step (2). In some embodiments step (2) is carried out before step (1).

Claims

1. A method of treating a material, the method comprising the steps of:

   (1) contacting the material with a composition comprising an α-hydroxy aldehyde having one hydroxy substituent;

   (2) contacting the material with a composition comprising a polycarboxylic acid derived chelating agent and/or a salt of an amine and a carboxylic acid having 4 to 10 carbon atoms.

2. A method according to claim 1 wherein the material is a keratinous material.

3. A method according to claim 1 or claim 2 wherein the material is human hair or animal hair, preferably human hair.

4. A method according to claim 3 wherein the material is growing human hair or animal hair, preferably growing human hair.

5. A method according to any preceding claim wherein step (1) is carried out before step (2).

6. A method according to any preceding claim wherein step (2) is carried out before step (1).

7. A method according to any preceding claim wherein steps (1) and (2) are carried out simultaneously and the material is contacted with a single composition comprising: an α-hydroxy aldehyde having one hydroxy substituent; and a polycarboxylic acid derived chelating agent and/or a salt of an amine and a carboxylic acid having 4 to 10 carbon atoms.

8. A hair care composition comprising an α-hydroxy aldehyde having one hydroxy substituent; and a polycarboxylic acid derived chelating agent and/or a salt of an amine and a carboxylic acid having 4 to 10 carbon atoms.

9. A method or composition according to any preceding claim wherein the aldehyde is selected from 2-hydroxypropanal, 2-hydroxyhexanal or 2-hydroxyoctanal.

10. A method or composition according to any preceding claim comprising a first aldehyde having less than 10 carbon atoms and a second aldehyde having 10 or more carbon atoms.

11. A method or composition according to claim 10 wherein the second aldehyde is selected from 2-hydroxydecanal, 2-hydroxydodecanal and 2-hydroxytetradecanal.

12. A method or composition according to claim 10 wherein the first aldehyde is selected from 2-hydroxyhexanal, 2-hydroxyoctanal, 2-hydroxypropanal, 2-hydroxybutanal, and the second aldehyde is selected from 2-hydroxydecanal, 2-hydroxydodecanal and 2-hydroxytetradecanal.

13. A method or composition according to any preceding claim wherein the chelating agent is selected from DTPA, GLDA and mixtures thereof.

14. A method or composition according to any preceding claim wherein the amine salt is the diethanolamine or triethanolamine salt of octanoic acid or hexanoic acid.

15. A composition according to any of claims 8 to 14 which is selected from a shampoo composition, a conditioning composition, a hair styling composition, a hair permanent waving composition, a hair relaxing composition, a hair permanent straightening composition or a hair colouring composition.

16. A composition according to any of claims 8 to 14 which further comprises 1 to 30 wt% surfactants, preferably anionic surfactants.

17. A composition according to any of claims 8 to 14 which further comprises a crosslinking agent comprising two or more maleic acid derived reactive moieties and a linker having two or more amino groups.

18. A method or composition according to any preceding claim which provides one or more benefits selected from increased gloss or shine, improved combability, improved strength, increased softness, reduced protein loss, improved thermal durability, increased chemical resistance, increased waviness and increased straightness.

19. A method or composition according to claim 18 wherein the benefit may be temporary, semi-permanent or permanent.

20. The use of an α-hydroxy aldehyde having one hydroxy substituent and a polycarboxylic acid derived chelating agent and/or a salt of an amine and a carboxylic acid having 4 to 10 carbon atoms to combat colour loss from dyed hair.

21. A packaged hair colouring product comprising one or more compositions wherein the one or more compositions together comprise at least one dye compound and/or one dye precursor compound; an α-hydroxy aldehyde

having one hydroxy substituent and a polycarboxylic acid derived chelating agent and/or a salt of an amine and a carboxylic acid having 4 to 10 carbon atoms.