

HAIR COSMETIC COMPOSITION AND METHOD FOR USING SAME

TECHNICAL FIELD

[0001] The present invention relates to a multi-agent type hair cosmetic composition such as a hair bleaching agent, a hair dedyeing agent or an oxidative hair dye, and a method for use thereof. More particularly, the present invention relates to a multi-agent type hair cosmetic composition including a first agent containing an alkali agent and a second agent containing an oxidizing agent, and a method for use thereof.

BACKGROUND ART

[0002] In order to bleach, dedye or dye hair, two-agent type hair bleaching agents or oxidative hair dyes, each including a first agent containing an alkali agent and a second agent containing an oxidizing agent, have been conventionally widely used.

A hair bleaching agent works, as the hair is swollen by an alkali agent and melanin in the hair is bleached by an oxidizing agent, while a hair dedyeing agent induces oxidative decomposition of dyes and melanin from dye-treated hair. On the other hand, an oxidative hair dye includes an oxidation dye as the first agent, so that after melanin is bleached by an oxidizing agent, the oxidation dye undergoes oxidative polymerization within the hair, and thus color is produced.

[0003] Regarding two-agent type hair cosmetic compositions of certain kinds, there is a demand for a composition in which the first agent and the second agent may be mixed easily in a container, or a composition which does not drip

from the hair at the time of application on the hair or during standing after application. In order to solve this, there is known a hair cosmetic composition in which the first agent is in an emulsion form or a gel form, and the second agent is in an emulsion form (Patent Literature 1).

[0004] Furthermore, regarding a two-agent type hair cosmetic composition, in order to stably disperse a material having low dispersion suitability, such as a dye, in the first agent, it is also required that the viscosity of the first agent be set to a high level. However, in regard to the hair cosmetic composition described in Patent Literature 1, it was considered preferable that the viscosity of the first agent is less than 3,000 mPa·s, and this requirement was not satisfied. Furthermore, in regard to the hair cosmetic composition of Patent Literature 1, in Comparative Example 3 in which the viscosity of the first agent was increased to obtain a cream form, performances such as miscibility, foaming properties, foam durability and dripping during standing were not satisfactory, and the demands described above were not all satisfied.

[0005] On the other hand, as a technology for increasing the miscibility of a first agent having high viscosity and a second agent having low viscosity, there is disclosed a second agent composition in which an amphoteric surfactant, an ester-type nonionic surfactant, an oily component, and hydrogen peroxide are incorporated into the second agent, and the pH is adjusted to 2 to 5 (Patent Literature 2).

[0006] An investigation was conducted on the "miscibility" of the hair cosmetic composition of Patent Literature 2, and when the first agent and the second agent were introduced into a cup and mixed using a brush or the like, satisfactory miscibility was recognized. However, when the first agent and the

second agent are introduced into a container and shaken, cream sticks to the inner wall surface of the container, and uniform mixing of the agents becomes difficult. Furthermore, the hair cosmetic composition described in Patent Literature 2 does not foam on the scalp hair, and dripping at the time of application on the hair cannot be suppressed.

CITATION LIST

PATENT LITERATURE

[0007] Patent Literature 1: JP 2013-184965 A

Patent Literature 2: JP 2009-161491 A

SUMMARY OF INVENTION

TECHNICAL PROBLEM

[0008] An object of the present invention is to provide a hair cosmetic composition including a first agent containing an alkali agent and a second agent containing an oxidizing agent, in which while the viscosity of the first agent is raised, the first agent and the second agent can be mixed by shaking.

SOLUTION TO PROBLEM

[0009] The inventors of the present invention conducted a thorough investigation on the problems described above, and as a result, the inventors found that when a higher fatty acid, an amphoteric surfactant, and an alkyl glycoside are incorporated into a second agent, a first agent having high viscosity and a second agent having low viscosity can be mixed easily by shaking the first agent and the second agent in a container. Furthermore, this

mixture does not drip at the time of application, and when the mixture is caused to foam on the scalp hair, foaming occurs satisfactorily, and very fine, high-quality bubbles are obtained. Thus, the inventors completed the present invention.

That is, the present invention provides the following hair cosmetic composition and a method for use thereof.

[0010] (Present first invention)

A first invention of the present application for solving the problems described above is a hair cosmetic composition including a first agent containing an alkali agent and a second agent containing an oxidizing agent, wherein the first agent has a viscosity at 25°C of 5,000 mPa·s to 40,000 mPa·s, and the second agent has a viscosity at 25°C of 100 mPa·s to 6,000 mPa·s and further includes the following components (A) to (C):

(A) a higher fatty acid;

(B) an amphoteric surfactant; and

(C) an alkyl glycoside in an amount of 0.01% to 5% by mass.

(Present second invention)

A second invention of the present application for solving the problems described above is the hair cosmetic composition described in the present first invention, in which a ratio of the amount of incorporation of the (C) alkyl glycoside with respect to the sum of the amounts of incorporation of the (A) higher fatty acid and the (B) amphoteric surfactant ($C/(A+B)$) is 0.4 to 2.0.

(Present third invention)

A third invention of the present application for solving the problems described above is the hair cosmetic composition described in the present first

or second invention, in which the hair cosmetic composition includes the (A) higher fatty acid in an amount of 0.01% to 3% by mass, and the (B) amphoteric surfactant in an amount of 0.01 to 3% by mass.

(Present fourth invention)

A fourth invention of the present application relates to the hair cosmetic composition described in the present first or second invention, which includes (D) an ether type nonionic surfactant having a HLB of 6 to 20.

(Present fifth invention)

A fifth invention of the present application relates to a method for using the hair cosmetic composition described in the present first or second invention, the method including a step of shaking the first agent and the second agent in a container and thereby preparing a mixture; a step of applying the mixture on hair; and a step of foaming the mixture on the hair to produce bubbles.

ADVANTAGEOUS EFFECTS OF INVENTION

[0011] According to the first to fourth inventions described above, a hair cosmetic composition that can be easily mixed only by shaking a first agent having excellent dispersion stability and high viscosity and a second agent having low viscosity in a container, can be provided.

Furthermore, according to the first to fourth inventions described above, a hair cosmetic composition which does not drip at the time of application on hair can be provided.

Furthermore, according to the first to fourth inventions, since foaming on the scalp hair occurs satisfactorily, and very fine, high-quality bubbles are formed, a hair cosmetic composition that has excellent preservability of foam

and does not easily drip even if the composition is left to stand for a long time period, can be provided.

In addition to that, according to the first to fourth inventions, an effect that the second agent has excellent emulsion stability is also recognized.

[0012] According to the fifth invention described above, a method for using a hair cosmetic composition, by which the first agent and the second agent can be simply and easily mixed, can be provided.

Furthermore, according to the fifth invention, since the hair cosmetic composition does not easily drip at the time of application on the scalp hair or at the time of standing, hair can be treated without contaminating the clothes or the like.

DESCRIPTION OF EMBODIMENTS

[0013] Hereinafter, the hair cosmetic composition of the present invention will be explained in detail.

[Concerning hair cosmetic composition]

The hair cosmetic composition of the present embodiment is a hair cosmetic composition including a first agent which contains an alkali agent and has a viscosity at 25°C of 5,000 mPa·s to 40,000 mPa·s, and a second agent which contains an oxidizing agent and has a viscosity at 25°C of 100 mPa·s to 6,000 mPa·s, the second agent including (A) a higher fatty acid, (B) an amphoteric surfactant, and (C) an alkyl glycoside at a proportion of 0.01% to 5% by mass.

[0014] [Concerning second agent]

The second agent of the present invention is a composition including (A)

a higher fatty acid, (B) an amphoteric surfactant, (C) an alkyl glycoside, and an oxidizing agent. Furthermore, it is preferable that the second agent includes (D) an ether type nonionic surfactant.

The viscosity at 25°C is preferably 100 mPa·s to 6,000 mPa·s, and more preferably 100 mPa·s to 5,000 mPa·s.

Regarding the method for measuring the viscosity at 25°C, the viscosity is measured using a B type viscometer (manufactured by TOKI SANGYO CO., LTD.). In a case in which the viscosity is in the range of 1,000 mPa·s to 10,000 mPa·s, measurement is made under the conditions of rotor No. 3, 12 rpm, and one minute. In a case in which the viscosity is less than 1,000 mPa·s under the conditions of rotor No. 3, 12 rpm, and one minute, the results obtained by making measurement under the conditions of rotor No. 2, 30 rpm, and one minute are employed for the viscosity. In a case in which the viscosity is more than 10,000 mPa·s under the conditions of rotor No. 3, 12 rpm, and one minute, the results obtained by making measurement under the conditions of rotor No. 4, 12 rpm, and one minute are employed. Meanwhile, according to the present invention, all of the methods for measuring viscosity are carried out according to this method.

[0015] [Higher fatty acid]

The (A) higher fatty acid is a fatty acid having 6 to 40 carbon atoms, and this is incorporated into the second agent in order to increase the miscibility of the first agent and the second agent. A preferred number of carbon atoms is 10 to 24, and more preferably 12 to 18.

Examples of the (A) higher fatty acid used for the present invention include lauric acid, myristic acid, palmitic acid, stearic acid, behenic acid,

isostearic acid, hydroxystearic acid, oleic acid, undecylenic acid, linoleic acid, ricinoleic acid, and lanolin fatty acids. Among specific examples of these higher fatty acids, only one kind may be included alone, or two or more kinds thereof may be included in combination. Among these, it is more preferable to use lauric acid, myristic acid, and palmitic acid.

The amount of incorporation of the higher fatty acid in the second agent is preferably 0.01% to 3% by mass, more preferably 0.05% to 2% by mass, and even more preferably 0.1% to 1% by mass.

[0016] [Amphoteric surfactant]

The (B) amphoteric surfactant is incorporated into the second agent in order to suppress dripping when the hair cosmetic composition is applied on the scalp hair, or in order to produce high-quality bubbles on the scalp hair.

Examples of the (B) amphoteric surfactant used for the present invention include an amino acid type amphoteric surfactant and a betaine type amphoteric surfactant. From the viewpoint that the effects of the present invention are exhibited more effectively, it is preferable to incorporate an amino acid type amphoteric surfactant.

Specific examples of the amino acid type amphoteric surfactant include glycine type amphoteric surfactants such as N-lauroyl-N'-carboxymethyl-N'-hydroxyethyl ethylenediamine sodium, 2-alkyl-N-carboxymethyl-N-hydroxyethyl imidazolinium betaine, undecylhydroxyethyl imidazolinium betaine sodium, alkyldiaminoethylglycine hydrochloride, N-coconut oil fatty acid acyl-N'-carboxyethyl-N'-hydroxyethyl ethylenediamine sodium, N-coconut oil fatty acid acyl-N'-carboxyethoxyethyl-N'-carboxyethyl ethylenediamine disodium, N-coconut oil fatty acid acyl-N'-carboxymethoxyethyl-N'-carboxymethyl

ethylenediamine disodium, lauryldiaminoethylglycine sodium, and palm oil fatty acid acyl-N-carboxyethyl-N-hydroxyethyl ethylenediamine sodium; and aminopropionic acid type amphoteric surfactants such as sodium laurylaminopropionate, sodium laurylaminodipropionate, and triethanolamine laurylaminopropionate.

Furthermore, specific examples of the betaine type amphoteric surfactant include aminoacetic acid betaine type amphoteric surfactants such as coconut oil alkyl betaine, lauryl dimethylaminoacetic acid betaine, myristyl dimethylaminoacetic acid betaine, stearyl dimethylaminoacetic acid betaine, stearyl dimethylbetaine sodium, coconut oil fatty acid amidopropyl betaine, palm oil fatty acid amidopropyl betaine, lauric acid amidopropyl betaine, ricinoleic acid amidopropyl betaine, and stearyl dihydroxyethyl betaine; and sulfo betaine type amphoteric surfactants such as lauryl hydroxysulfo betaine. These various amphoteric surfactants may be used singly, or may be used in combination of two or more kinds thereof.

The amount of incorporation of the amphoteric surfactant into the second agent is preferably 0.01% to 3% by mass, more preferably 0.05% to 1.5% by mass, and even more preferably 0.1% to 1.2% by mass.

[0017] [Alkyl glycoside]

The (C) alkyl glycoside is a compound in which a higher alcohol is bonded to a sugar through a glycoside bond, and is a substance having an alkyl group and a sugar moiety. The number of alkyl groups bonded to a sugar moiety is not limited; however, the number of alkyl groups is preferably 1 or 2. The alkyl group may be a linear group, a branched group, a cyclic group, or a combination these, and there are also no limitations on the distinction between

being saturated and being unsaturated. The alkyl group is preferably a linear or branched saturated alkyl group, and more preferably a linear saturated alkyl group. The number of carbon atoms of the alkyl group is not particularly limited; however, the number is preferably 6 to 24, more preferably 6 to 18, and even more preferably 8 to 16.

The sugar moiety may be a monosaccharide or an oligosaccharide, and the number of saccharides is preferably 1 to 10, more preferably 1 to 5, and even more preferably 1 or 2. A preferred substance is an alkyl glucoside.

Examples of the (C) alkyl glycoside used for the present invention include an alkyl (8 to 16) glucoside, octyl glucoside, octyl maltoside, decyl glucoside, decyl maltoside, dodecyl glucoside, heptyl thioglucoside, octyl thioglucoside, and nonyl thiomaltoside. These alkyl glucosides may be used singly, or two or more kinds thereof may be used in combination.

From the viewpoint of enhancing foaming, an alkyl (8-16) glucoside is preferred. An alkyl (8 to 16) glucoside is a mixture of alkyl glucosides each having a linear alkyl group having 8 to 16 carbon atoms.

The amount of incorporation of the alkyl glycoside into the second agent is 0.01% to 5% by mass, preferably 0.05% to 3% by mass, and more preferably 0.1% to 2% by mass. If the amount of incorporation is less than 0.01% by mass, sufficient effects are not obtained in connection with the miscibility with the first agent, suppression of dripping, foaming, and the bubble quality. On the other hand, if the alkyl glycoside is incorporated in an amount of more than 5% by mass, miscibility with the first agent is decreased.

[0018] [Ether type nonionic surfactant]

The (D) ether type nonionic surfactant is a polyoxyalkylene alkyl ether

such as a polyoxyethylene alkyl ether or a polyoxypropylene alkyl ether. Examples include polyoxyethylene lauryl ether, polyoxyethylene cetyl ether, polyoxyethylene stearyl ether, polyoxyethylene oleyl ether, and polyoxyethylene behenyl ether, and the value of the HLB varies depending on the number of added moles of ethylene oxide (number of added moles of an oxyethylene unit). The HLB is preferably 6 to 20, more preferably 8 to 20, and even more preferably 12 to 20.

Meanwhile, regarding the measurement of the HLB, measurement is made according to "20·3·1 Actual measurement of HLB value according to emulsion method" (pp. 854 to 855) described in "Handbook - Cosmetics · Raw Materials for Preparations - Revised Edition (published on February 1, 1977, Nikko Chemicals Co., Ltd.)".

The amount of incorporation of the ether type nonionic surfactant into the second agent is 0.01% to 5% by mass, preferably 0.05% to 3% by mass, and more preferably 0.1% to 2% by mass.

[0019] [Oxidizing agent]

The second agent includes an oxidizing agent. Specific examples of the oxidizing agent include hydrogen peroxide, urea peroxide, melamine peroxide, sodium percarbonate, potassium percarbonate, sodium perborate, potassium perborate, sodium peroxide, potassium peroxide, magnesium peroxide, barium peroxide, calcium peroxide, strontium peroxide, a hydrogen peroxide adduct of a sulfuric acid salt, a hydrogen peroxide adduct of a phosphoric acid salt, and a hydrogen peroxide adduct of a pyrophosphoric acid salt. These oxidizing agents may be incorporated singly, or two or more kinds thereof may be incorporated in combination. Among these oxidizing agents, hydrogen

peroxide is preferred from the viewpoint of having excellent bleaching power for melanin.

The content of the oxidizing agent in the second agent is preferably 0.1% to 20% by mass, and more preferably 0.3% to 10% by mass.

[0020] $C/(A+B)$

The ratio $C/(A+B)$ of the amount of incorporation of the (C) alkyl glycoside with respect to the sum of the amounts of incorporation of the (A) higher fatty acid and the (B) amphoteric surfactant of the present invention is preferably 0.4 to 2.0, more preferably 0.7 to 2.0, and even more preferably 1.0 to 2.0.

[0021] [Concerning first agent]

The first agent of the present invention is a composition including an alkali agent. The viscosity at 25°C is preferably 5,000 mPa·s to 40,000 mPa·s, more preferably 6,000 mPa·s to 30,000 mPa·s, and even more preferably 7,000 mPa·s to 25,000 mPa·s.

[0022] [Alkali agent]

Specific examples of the alkali agent include ammonia, an alkanolamine, an ammonium salt, an organic amine (2-amino-2-methyl-1,3-propanediol, guanidine, or the like), an inorganic alkali (sodium hydroxide, potassium hydroxide, sodium carbonate, potassium carbonate, or the like), a basic amino acid (arginine, lysine, or the like), and salts thereof. Specific examples of the alkanolamine include monoethanolamine, diethanolamine, triethanolamine, monopropylamine, isopropylamine, dipropylamine, tripropylamine, 2-amino-2-methyl-1,3-propanediol, 2-amino-2-methyl-1-propanol, and 2-amino-2-hydroxymethyl-1,3-propanediol. Specific examples of the ammonium salt

include an ammonium halide, an inorganic ammonium salt, and an organic ammonium salt. Examples of the ammonium halide include ammonium chloride; examples of the inorganic ammonium salt include ammonium carbonate, ammonium hydrogen carbonate, ammonium sulfate, ammonium phosphate, and ammonium hydrogen phosphate; and examples of the organic ammonium salt include ammonium lactate, ammonium citrate, and ammonium glycolate. These alkali agents may be incorporated singly, or two or more kinds thereof may be incorporated in combination.

The amount of incorporation of the alkali agent in the first agent is preferably 0.01% to 10% by mass, and more preferably 0.1% to 8% by mass.

[0023] [Concerning other components incorporated into first agent and second agent]

In the first agent and the second agent of the present invention, if necessary, water, a surfactant (excluding an amphoteric surfactant, an alkyl glycoside, and an ether type nonionic surfactant), an oily component (excluding a higher fatty acid), a chelating agent, and the like can be appropriately selected and included.

Meanwhile, the (A) higher fatty acid, (B) amphoteric surfactant, (C) alkyl glycoside, and (D) ether type nonionic surfactant that are incorporated into the second agent, may also be incorporated into the first agent.

[0024] [Surfactant]

Other examples of the surfactant include a nonionic surfactant (excluding an alkyl glycoside and an ether type nonionic surfactant), a cationic surfactant, and an anionic surfactant.

Specific examples of the nonionic surfactant include glyceryl

monostearate, a POE sorbitan fatty acid ester, and a POE propylene glycol fatty acid ester.

Specific examples of the cationic surfactant include lauryltrimethylammonium chloride, stearyltrimethylammonium chloride, alkyltrimethylammonium chloride, cetyltrimethylammonium chloride, distearyldimethylammonium chloride, cetyltrimethylammonium bromide, stearyltrimethylammonium bromide, lanolin fatty acid aminopropyl ethyldimethylammonium ethyl sulfate, stearyltrimethylammonium saccharin, and cetyltrimethylammonium saccharin.

Specific examples of the anionic surfactant include an alkyl sulfuric acid salt such as sodium lauryl sulfate; a POE alkyl sulfuric acid salt such as sodium POE lauryl ether sulfate; an alkyl sulfuric acid ester salt such as triethanolamine lauryl sulfate; stearyltrimethylammonium sodium, triethanolamine dodecylbenzene sulfonate, sodium tetradecene sulfonate, POE lauryl ether phosphoric acid and salts thereof.

The surfactant is incorporated into the first agent and the second agent according to necessity. The amount of incorporation thereof is not particularly limited; however, the surfactant is incorporated in an amount in the range of 0.01% to 10% by mass into each of the first agent and the second agent.

Meanwhile, since a cationic surfactant is effective for the formation and retention of bubbles, it is preferable to incorporate a cationic surfactant.

[0025] [Oily component]

Examples of the oily component excluding the (A) higher fatty acid include a higher alcohol, oils and fats, a wax, a hydrocarbon, an alkyl glyceryl ether, an ester, a silicone, and a polyhydric alcohol.

Examples of the higher alcohol include cetyl alcohol (cetanol), 2-hexyldecanol, stearyl alcohol, isostearyl alcohol, cetostearyl alcohol, oleyl alcohol, arachyl alcohol, behenyl alcohol, 2-octyldodecanol, lauryl alcohol, myristyl alcohol, decyltetradecanol, and lanolin alcohol.

Examples of the oils and fats include lanolin, olive oil, camellia oil, shea butter, almond oil, safflower oil, sunflower oil, soybean oil, cotton seed oil, sesame oil, corn oil, rapeseed oil, rice bran oil, rice germ oil, grapeseed oil, avocado oil, macademia nut oil, castor oil, coconut oil, and evening primrose oil.

Examples of the wax include beeswax, candelilla wax, carnauba wax, jojoba oil, and lanolin.

Examples of the hydrocarbon include paraffin, an olefin oligomer, polyisobutene, hydrogenated polyisobutene, mineral oil, squalane, polybutene, polyethylene, microcrystalline wax, and petrolatum.

Examples of the alkyl glyceryl ether include batyl alcohol, chimyl alcohol, selachyl alcohol, and isostearyl glyceryl ether.

Examples of the ester include diisopropyl adipate, isopropyl myristate, cetyl octanoate, isononyl isononanoate, octyl dodecyl myristate, isopropyl palmitate, stearyl stearate, myristyl myristate, isotridecyl myristate, 2-ethylhexyl palmitate, octyl dodecyl ricinolate, C10-C30 fatty acid cholesteryl/lanosteryl, cetyl lactate, lanolin acetate, ethylene glycol di-2-ethylhexanoate, pentaerythritol fatty acid ester, dipentaerythritol fatty acid ester, cetyl caprate, glyceryl tricaprilate, isostearyl malate, dioctyl succinate, and cetyl 2-ethylhexanoate.

Examples of the silicone include dimethylpolysiloxane (dimethicone), methylphenylpolysiloxane, decamethylcyclopentasiloxane, dodecamethylcyclohexasiloxane, terminal hydroxyl group-modified

dimethylpolysiloxane, a highly polymerized silicone having an average degree of polymerization of 650 to 10,000, polyether-modified silicone, amino-modified silicone, betaine-modified silicone, alkyl-modified silicone, alkoxy-modified silicone, carboxy-modified silicone, and fluorine-modified silicone.

Examples of the polyhydric alcohol include glycol and glycerin. Examples of the glycol include ethylene glycol, diethylene glycol, triethylene glycol, polyethylene glycol, propylene glycol, dipropylene glycol, polypropylene glycol, isoprene glycol, and 1,3-butylene glycol. Examples of the glycerin include glycerin, diglycerin, and polyglycerin.

The oily component is incorporated for the purpose of softening the condition of hair. Furthermore, the oily component is incorporated in order to produce the first agent and the second agent into desired formulations. For example, in a case in which the first agent and the second agent are produced into cream-like formulations, the amount of incorporation of the oily component incorporated into the first agent and the second agent is preferably set to the range of 0.1% to 20% by mass.

[0026] [Chelating agent]

Examples of the chelating agent include ethylenediaminetetraacetic acid (EDTA, edetic acid), hydroxyethyl ethylenediaminetriacetic acid (HEDTA) and salts thereof, diethylenetriaminepentaacetic acid and salts thereof, and hydroxyethanediphosphonic acid (HEDP, etidronic acid) and salts thereof.

[0027] [Others]

In addition to those, the first agent and the second agent of the present invention may contain at least one selected from an antioxidant (for example, ascorbic acid or anhydrous sodium sulfite), a preservative (for example,

phenoxyethanol or sodium benzoate), an oxidation dye (for example, a phenylenediamine, an aminophenol, or a diaminopyridine), a coupler (for example, resorcin), a direct dye (for example, a basic dye, a nitro dye, a natural dye, or a disperse dye), an organic solvent (for example, ethanol), a sugar (for example, sorbitol or maltose), a water-soluble polymer (for example, a nonionic polymer, an anionic polymer, a cationic polymer, or an amphoteric polymer), a stabilizer (for example, phenacetin, 8-hydroxyquinoline, acetanilide, sodium pyrolate, barbituric acid, uric acid, or tannic acid), an inorganic salt (for example, sodium chloride or sodium carbonate), a pH adjusting agent (citric acid, phosphoric acid, or the like), a buffer agent (sodium phosphate, or the like), a plant extract, a biomedical extract, a vitamin, a fragrance, an ultraviolet absorber, and those published in "Japanese Standards of Quasi-Drug Ingredients" (published in June, 2006, YAKUJI NIPPO LIMITED).

[0028] [Concerning method for using hair cosmetic composition]

The method for using a hair cosmetic composition of the present invention is a method including a step of shaking a first agent and a second agent in a container, and thereby preparing a mixture; a step of applying the mixture on hair; and a step of foaming the mixture on the hair to produce bubbles.

EXAMPLES

[0029] Next, the embodiments described above will be explained more specifically by way of Examples and Comparative Examples.

(First agent)

Samples (1)-1 to (1)-4 were respectively prepared by mixing the various

components indicated in Table 1, and the samples were used as first agents.

Production of a first agent is carried out, for example, as follows. First, various components other than an oxidation dye, an intermediate, ammonia, monoethanolamine, anhydrous sodium sulfite, ascorbic acid and a pentasodium diethylenetriaminepentaacetate solution, are introduced into a container, and the components are dissolved and emulsified at 80°C and then cooled to 40°C. Subsequently, an oxidation dye, an intermediate, ammonia, monoethanolamine, anhydrous sodium sulfite, ascorbic acid, and a pentasodium diethylenetriaminepentaacetate solution are added thereto, and water is added to the mixture to make up 100%. Regarding the mixing machine, "Emulsion Testing Apparatus Model ET-SA" (manufactured by Nikko Chemicals Co., Ltd.) was used.

The viscosity of the first agent was measured using a B type viscometer (manufactured by TOKI SANGYO CO., LTD.) under the conditions of rotor No. 4, 12 rpm, and one minute.

[0030] [Table 1]

First agent	(1)-1	(1)-2	(1)-3	(1)-4
Strong aqueous solution of ammonia (28%)	2	2	2	2
Monoethanolamine (70%), purified water	5	5	5	5
Toluene-2,5-diamine	0.3	0.3	0.3	0.3
Resorcin	0.4	0.4	0.4	0.4
p-Aminophenol	0.1	0.1	0.1	0.1
Stearic acid	1	2	0.5	3
Stearyl alcohol	5	8	2	12
Cetanol	2	2	2	2
Polyoxyethylene(2) stearyl ether (HLB: 8.0)	1	1	1	1
Polyoxyethylene(50) oleyl ether (HLB: 18.0)	1	1	1	1
Polyoxyethylene(20) behenyl ether (HLB: 16.5)	1	1	1	1
Stearyltrimethylammonium chloride (25%)	1	1	1	1
Dipropylene glycol	2	2	2	2
Pentasodium diethylenetriaminopentaacetate solution (40%)	0.3	0.3	0.3	0.3
Anhydrous sodium sulfite	0.1	0.1	0.1	0.1
Ascorbic acid	0.1	0.1	0.1	0.1
Purified water	Balance	Balance	Balance	Balance
Total	100	100	100	100
Viscosity (B type viscometer, No. 4, 12 rpm)	13290	22330	6130	33020

[0031] (Second agent)

Samples (2)-1 to (2)-15 were respectively prepared by mixing the various components indicated in Table 2-1 and Table 2-2, and the samples were used as second agents.

The production of a second agent is carried out, for example, as follows. First, various components other than an aqueous solution of hydrogen peroxide and phenoxyethanol are introduced into a container, and the mixture is dissolved and emulsified at 80°C and cooled to 40°C. Subsequently, an aqueous solution of hydrogen peroxide and phenoxyethanol are added thereto, and water is added to the mixture to make up 100%. Regarding the mixing machine, "Emulsion Testing Apparatus Model ET-SA" (manufactured by Nikko Chemicals Co., Ltd.) was used.

The viscosity of samples (2)-1 to (2)-13 was measured using a B type viscometer (manufactured by TOKI SANGYO CO., LTD.) under the conditions of rotor No. 3, 12 rpm, and one minute. The viscosity of samples (2)-14 and (2)-15 was measured using the same B type viscometer under the conditions of rotor No. 2, 30 rpm, and one minute.

[0032] <Emulsion stability of second agent>

For each of the samples, the state of mixing was observed and evaluated according to the following criteria. The evaluation results are presented in Table 2-1 and Table 2-2.

○: Satisfactory

×: Separation is recognized.

[0033] [Table 2]

Table 2-1

Second agent		(2)-1	(2)-2	(2)-3	(2)-4	(2)-5	(2)-6	(2)-7	(2)-8
Lauryl alcohol		1	1	1	1	1	1	1	1
Cetanol		1	1	1	1	1	1	1	1
(A)	Palmitic acid	0.5			0.5	0.5	0.5	1.5	0.5
	Lauric acid		0.5						
	Stearic acid			0.5					
(B)	Lauryldimethylaminoacetic acid betaine	0.9	0.9	0.9		0.9	0.9	0.9	1.35
	N-lauroyl-N'-carboxydimethyl-N'-hydroxyethyl ethylenediamine sodium				0.9				
(C)	Alkyl (8-16) glucoside	1.5	1.5	1.5	1.5	1.5	2	1.5	1.5
Oleophilic glyceryl monostearate (HLB: 4.0)									
(D)	Polyoxyethylene(21) lauryl ether (HLB: 19.0)	1	1	1	1		1	1	1
	Polyoxyethylene(2) lauryl ether (HLB: 9.5)					1			
Stearyltrimethylammonium chloride (25%)		1	1	1	1	1	1	1	1
Aqueous solution of hydrogen peroxide (35%)		16	16	16	16	16	16	16	16
Phenoxyethanol		0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Purified water		Balance	Balance	Balance	Balance	Balance	Balance	Balance	Balance
Total		100	100	100	100	100	100	100	100
A+B		1.4	1.4	1.4	1.31	1.4	1.4	2.4	1.85
C		1.5	1.5	1.5	1.5	1.5	2	1.5	1.5
C/(A+B)		1.07	1.07	1.07	1.15	1.07	1.43	0.63	0.81
Viscosity (B type viscometer No. 3, 12 rpm)		3050	3460	3730	2240	2950	2290	4260	2480
Viscosity (B type viscometer No. 2, 30 rpm)									
Emulsion stability of second agent		○	○	○	○	○	○	○	○

Table 2-2

Second agent		(2)-9	(2)-10	(2)-11	(2)-12	(2)-13	(2)-14	(2)-15
Lauryl alcohol		1	1	1	1	1	1	1
Cetanol		1	1	1	1	1	1	1
(A)	Palmitic acid	0.5	0.5	-	0.5	0.5	0.5	0.5
	Lauric acid							
	Stearic acid							
(B)	Lauryldimethylaminoacetic acid betaine	1.8	1.8	0.9	-	0.9	0.9	0.9
	N-lauroyl-N'-carboxydimethyl-N'-hydroxyethyl ethylenediamine sodium							
(C)	Alkyl (8-16) glucoside	1.5	1	1.5	1.5	-	-	6
Oleophilic glyceryl monostearate (HLB: 4.0)							3	
(D)	Polyoxyethylene(21) lauryl ether (HLB: 19.0)	1	1	1	1	1	1	1
	Polyoxyethylene(2) lauryl ether (HLB: 9.5)							
Stearyltrimethylammonium chloride (25%)		1	1	1	1	1	1	1
Aqueous solution of hydrogen peroxide (35%)		16	16	16	16	16	16	16
Phenoxyethanol		0.1	0.1	0.1	0.1	0.1	0.1	0.1
Purified water		Balance	Balance	Balance	Balance	Balance	Balance	Balance
Total		100	100	100	100	100	100	100
A+B		2.3	2.3	0.9	0.5	1.4	1.4	1.4
C		1.5	1	1.5	1.5	-	-	5
C/(A+B)		0.65	0.43	1.67	3.00	-	-	3.57
Viscosity (B type viscometer No. 3, 12 rpm)		1840	2390	1210	1440	9990	-	-
Viscosity (B type viscometer No. 2, 30 rpm)							67	62
Emulsion stability of second agent		○	○	○	○	○	×	×

[0034] (Example 1 and Comparative Examples 1 to 4)

In each of the examples, the various samples of the first agent and the second agent indicated in Table 3 were mixed at a proportion of 1 : 1. Regarding the method for mixing, 20 g each of the first agent and the second agent was weighed, the second agent and the first agent were introduced in this order into an applicator (capacity: 120 ml, shape: columnar, diameter: 4.3 cm), and the first and second agents were vertically shaken 30 times.

For each of the examples, "miscibility" was evaluated, and the results are presented in Table 3. The method for evaluation of "miscibility" is as follows.

[0035] <Method for evaluating miscibility>

A first agent and a second agent were mixed with an applicator as described above, subsequently the mixture was taken out from the applicator, and the mixture was evaluated by visual observation based on the following criteria.

◎: The mixture is uniformly mixed, and there is no adhesion to the inner wall surface of the applicator.

○: Unmixed lumps (defective mixing products) are almost absent, and adhesion to the inner wall surface of the applicator also almost does not occur.

△: Lumps (defective mixing products) are slightly recognized, or adhesion to the inner wall surface of the applicator is slightly recognized.

×: A large amount of lumps (defective mixing products) are recognized, or/and adhesion to the inner wall surface of the applicator is recognized to a large extent.

[0036] Next, for the mixtures obtained in the various Examples, "suppression of dripping" and "foaming and bubble quality" were evaluated by the following

evaluation methods, and the results are presented in Table 3. Furthermore, to make the comparison of various Examples easy, differences of the second agent (features of the second agent) are described, and the evaluation results for the "emulsion stability of second agent" are also presented in Table 3.

<Suppression of dripping>

15 g of a mixture of the first agent and the second agent mixed by the mixing method described above was applied on a wig for evaluation, and whether the mixture dripped was visually observed and evaluated according to the following criteria.

◎: Dripping does not occur, and the mixture has almost no fluidity.

○: Dripping does not occur, but the mixture has slight fluidity.

△: Dripping does not occur, but the mixture has fluidity.

×: Dripping occurs.

[0037] <Foaming and bubble quality>

After the evaluation of "suppression of dripping", the mixture was caused to foam on the wig for evaluation by rapidly rubbing the mixture by hands. Then, the foaming performance and the bubble quality at the time of foaming as such were evaluated according to the following criteria.

◎: Foaming occurred satisfactorily, and very fine, high-quality bubbles were formed.

○: Foaming occurred satisfactorily, and very fine, high-quality bubbles were formed; however, the bubble quality is slightly deteriorated over time.

△: Foaming occurred, but the bubble quality cannot be said to be satisfactory.

×: Foaming does not occur.

[0038] [Table 3]

		Example 1	Comparative Example 1	Comparative Example 2	Comparative Example 3	Comparative Example 4
First agent		(1)-1	(1)-1	(1)-1	(1)-1	(1)-1
Second agent		(2)-1	(2)-11	(2)-12	(2)-13	(2)-14
(Features of second agent)			Without (A)	Without (B)	Without (C)	Without (C)
Ratio (first agent : second agent)		1 : 1	1 : 1	1 : 1	1 : 1	1 : 1
Evaluation	Miscibility	◎	×	○	×	×
	Suppression of dripping	◎	△	×	×	×
	Foaming, bubble quality	◎	○	△	×	△
	Emulsion stability of second agent	○	○	○	○	×

[0039] When the evaluation results of Example 1 and Comparative Examples 1 to 4 are considered, in Comparative Example 1 in which the second agent did not include the (A) higher fatty acid, results with very poor "miscibility" were obtained. Therefore, it may be said that the (A) higher fatty acid significantly affects the "miscibility".

In Comparative Example 2 in which the second agent did not include the (B) amphoteric surfactant, the performance concerning the "suppression of dripping" was extremely deteriorated. Therefore, it may be said that the (B) amphoteric surfactant significantly affects the effect of "suppression of dripping".

In Comparative Example 3 in which the second agent does not include the (C) alkyl glycoside, very poor results were obtained for all of the evaluation items such as "miscibility", "suppression of dripping", and "foaming and bubble quality". It was found that the (C) alkyl glycoside has a very important role in the present invention.

[0040] Furthermore, in Comparative Example 4, a second agent that included an amphoteric surfactant, an ester type nonionic surfactant, an oily component, and hydrogen peroxide but did not include the (C) alkyl glycoside, similarly to the hair cosmetic composition described in Patent Literature 2, was evaluated. However, satisfactory results for "miscibility" and "suppression of dripping" were not obtained.

[0041] (Examples 1 to 5)

Various samples indicated in Table 4 were mixed, and hair cosmetic compositions were prepared, in the same manner as in Example 1. The "miscibility", "suppression of dripping", and "foaming and bubble quality" were evaluated.

[0042] [Table 4]

		Example 1	Example 2	Example 3	Example 4	Example 5
First agent		(1)-1	(1)-2	(1)-3	(1)-1	(1)-1
Second agent		(2)-1	(2)-2	(2)-3	(2)-4	(2)-5
Ratio (first agent : second agent)		1 : 1	1 : 1	1 : 1	1 : 1	1 : 1
Evaluation	Miscibility	◎	◎	◎	◎	○
	Suppression of dripping	◎	◎	○	◎	◎
	Foaming, bubble quality	◎	◎	◎	◎	○
	Emulsion stability of second agent	○	○	○	○	○

[0043] In Examples 2 and 3, the effects of various higher fatty acids were checked. Furthermore, in Example 4, the effects of another amphoteric surfactant were checked. As a result, it may be said that the effects of the present invention are exhibited irrespective of the kinds of the higher fatty acid and the amphoteric surfactant.

[0044] Example 5 is an example in which (D) an ether type nonionic surfactant having a HLB of 9.5 was used. A comparison was made between Example 5 and Example 1, in which (D) an ether type nonionic surfactant having a HLB of 19.0 was used, and as a result, it was acknowledged that Example 1 exhibited superior effects in connection with the "miscibility" and "foaming and bubble quality".

[0045] (Examples 1 and 6 and Comparative Example 5)

Similarly to Example 1, hair cosmetic compositions were prepared by mixing the various samples indicated in Table 5, and "miscibility", "suppression of dripping", and "foaming and bubble quality" were evaluated. In addition, in order to make it easy to compare the various Examples, the amounts of incorporation of the component (C) of each Example in the second agent are additionally presented in the table.

[0046] [Table 5]

		Example 1	Example 6	Comparative Example 5
First agent		(1)-1	(1)-1	(1)-1
Second agent		(2)-1	(2)-6	(2)-15
Amount of incorporation of (C) in second agent		1.5	2	6
Ratio (first agent : second agent)		1 : 1	1 : 1	1 : 1
Evaluation	Miscibility	⊙	⊙	△
	Suppression of dripping	⊙	⊙	×
	Foaming, bubble quality	⊙	⊙	⊙
	Emulsion stability of second agent	○	○	×

[0047] In Comparative Example 5, the (C) alkyl glycoside was incorporated into the second agent in an amount of 6% by mass, and the effect of "suppression of dripping" was not recognized. Furthermore, the "emulsion stability of second agent" was also adversely affected. Therefore, it may be said that in order to provide the effects of the present invention, the amount of incorporation of the (C) alkyl glycoside needs to be adjusted to 5% by mass or less.

[0048] (Examples 1 and 7)

Similarly to Example 1, hair cosmetic compositions were prepared by mixing the various samples indicated in Table 6, and "miscibility", "suppression of dripping", and "foaming and bubble quality" were evaluated. In addition, in order to make it easy to compare the various Examples, the amounts of incorporation of the component (A) of each Example in the second agent are additionally presented in the table.

[0049] [Table 6]

		Example 1	Example 7
First agent		(1)-1	(1)-1
Second agent		(2)-1	(2)-7
Amount of incorporation of (A) in second agent		0.5	1.5
Ratio (first agent : second agent)		1 : 1	1 : 1
Evaluation	Miscibility	⊙	△
	Suppression of dripping	⊙	⊙
	Foaming, bubble quality	⊙	⊙
	Emulsion stability of second agent	○	○

[0050] Example 7 is an example in which the (A) higher fatty acid was incorporated into the second agent in an amount of 1.5% by mass. When this is compared with Example 1 in which the (A) higher fatty acid was incorporated in an amount of 0.5% by mass, it was acknowledged that Example 1 exhibited a superior effect in connection with miscibility. Therefore, it may be said that when the (A) higher fatty acid is incorporated in an amount of 1.0% by mass or less, the effects of the present invention are exhibited more effectively.

[0051] (Examples 1 and 8 to 10)

Similarly to Example 1, hair cosmetic compositions were prepared by mixing the various samples indicated in Table 7, and "miscibility", "suppression of dripping", and "foaming and bubble quality" were evaluated. In addition, in order to make it easy to compare the various Examples, the amount of incorporation of the component (B) of each Example in the second agent, and the ratio $C/(A+B)$ of the amount of incorporation of the (C) alkyl glycoside with respect to the sum of the amounts of incorporation of the (A) higher fatty acid and the (B) amphoteric surfactant are additionally presented in the table.

[0052] [Table 7]

		Example 1	Example 8	Example 9	Example 10
First agent		(1)-1	(1)-1	(1)-1	(1)-1
Second agent		(2)-1	(2)-8	(2)-9	(2)-10
Amount of incorporation of (B) in second agent		0.9	1.35	1.8	1.8
C/(A+B)		1.07	0.81	0.65	0.43
Ratio (first agent : second agent)		1 : 1	1 : 1	1 : 1	1 : 1
Evaluation	Miscibility	⊙	○	△	△
	Suppression of dripping	⊙	○	△	△
	Foaming, bubble quality	⊙	⊙	⊙	⊙
	Emulsion stability of second agent	○	○	○	○

[0053] Examples 8 and 9 are examples in which the (B) amphoteric surfactant was incorporated into the second agent in amounts of 1.35% by mass and 1.8% by mass, respectively. As a result, it was recognized that when the amount of incorporation of the (B) amphoteric surfactant is increased, the effects on "miscibility" and "suppression of dripping" are decreased.

Furthermore, Examples 8, 9 and 10 are examples in which the ratio $(C/(A+B))$ was 0.81, 0.65, and 0.43, respectively.

From these results, it can be seen that when the amount of incorporation of the (B) amphoteric surfactant is 1.2% by mass or less, or when the ratio $(C/(A+B))$ is 1.0 or more, the effects of the present invention are exhibited more effectively.

[0054] (Examples 1 and 11 to 13)

Similarly to Example 1, hair cosmetic compositions were prepared by mixing the various samples indicated in Table 8, and "miscibility", "suppression of dripping", and "foaming and bubble quality" were evaluated. In addition, in order to make it easy to compare the various Examples, the viscosity of each Example for the first agent is additionally presented in the table.

[0055] [Table 8]

		Example 1	Example 11	Example 12	Example 13
First agent		(1)-1	(1)-2	(1)-3	(1)-4
(Viscosity of first agent)		13290	22330	6130	33020
Second agent		(2)-1	(2)-1	(2)-1	(2)-1
Ratio (first agent : second agent)		1 : 1	1 : 1	1 : 1	1 : 1
Evaluation	Miscibility	⊙	⊙	⊙	△
	Suppression of dripping	⊙	⊙	○	○
	Foaming, bubble quality	⊙	⊙	⊙	⊙
	Emulsion stability of second agent	○	○	○	○

[0056] In Examples 1 and 11 to 13, various viscosities of the first agent were evaluated. As a result, it can be seen that when the viscosity of the first agent is 7,000 mPa·s to 25,000 mPa·s, the effects of the present invention are exhibited more effectively.

INDUSTRIAL APPLICABILITY

[0057] According to the present invention, a hair cosmetic composition in which a first agent having high viscosity and a second agent having low viscosity can be easily mixed is provided. Furthermore, according to the present invention, there is provided a hair cosmetic composition which does not easily drip at the time of application, foams satisfactorily on the scalp hair, and forms very fine, high-quality bubbles.

The hair cosmetic composition of the present invention is utilized in multi-agent type oxidative hair dyes, bleaching agents, dedyeing agents and the like.

Furthermore, according to the present invention, there is provided a method for using a hair cosmetic composition which can be mixed easily, does not drip, and can produce bubbles of satisfactory bubble quality on the scalp hair.

The method for using a hair cosmetic composition of the present invention is utilized in beauty parlors and the like.

CLAIMS

[Claim 1]

A hair cosmetic composition comprising a first agent containing an alkali agent and a second agent containing an oxidizing agent,

the first agent having a viscosity at 25°C of 5,000 mPa·s to 40,000 mPa·s,

the second agent having a viscosity at 25°C of 100 mPa·s to 6,000 mPa·s and further containing the following components (A) to (C):

(A) a higher fatty acid;

(B) an amphoteric surfactant; and

(C) an alkyl glycoside in an amount of 0.01% to 5% by mass.

[Claim 2]

The hair cosmetic composition according to claim 1, wherein a ratio $(C/(A+B))$ of the amount of incorporation of the (C) alkyl glycoside with respect to the sum of the amounts of incorporation of the (A) higher fatty acid and the (B) amphoteric surfactant is 0.4 to 2.0.

[Claim 3]

The hair cosmetic composition according to claim 1 or 2, wherein the composition comprises the (A) higher fatty acid in an amount of 0.01% to 3% by mass, and comprises the (B) amphoteric surfactant in an amount of 0.01% to 3% by mass.

[Claim 4]

The hair cosmetic composition according to claim 1 or 2, further

comprising (D) an ether type nonionic surfactant having a HLB of 6 to 20.

[Claim 5]

A method for using the hair cosmetic composition according to claim 1 or 2, the method comprising:

a step of shaking the first agent and the second agent in a container and thereby preparing a mixture;

a step of applying the mixture on hair; and

a step of foaming the mixture on the hair to produce bubbles.