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[Document Name] Description

[Title of the Invention] Composition containing an oxidizing agent and method for stabilizing an oxidizing agent

TECHNICAL FIELD

[0001]

The present invention relates to a composition containing an oxidizing agent and a method for stabilizing an oxidizing agent, particularly hydrogen peroxide, with improved stability.

BACKGROUND ART

[0002]

Generally, as a hair treatment composition, a hair dyeing agent, a hair bleaching/destaining agent, and a permanent wave agent which exert an effect by mixing a plurality of agents are known. As such a hair treatment agent composition, for example, an oxidative hair dyes composed of a first agent containing an alkaline agent and an oxidative dyes and a second agent containing an oxidizing agent, for example, hydrogen peroxide (composition containing an oxidizing agent) is known.

[0003]

For example, since hydrogen peroxide as an oxidizing agent is an unstable compound and easily decomposed into water and oxygen, it is difficult to maintain a stability of the hydrogen peroxide-containing composition for a long period of time. A composition containing an oxidizing agent is known in the art that uses specific stabilizers to improve the stability of an oxidizing agent. For example, Patent Document 1 discloses a composition for reducing decomposition of hydrogen peroxide containing 1-hydroxyethane-1,1-diphosphonic acid and others. Patent Document 2 discloses a

hydrogen peroxide-containing composition containing pyrrolidone carboxylic acid esters and others.

CITATION LIST

PATENT DOCUMENT

[0004]

Patent Document 1: JP 2007-503409 A

Patent Document 2: JP 3845010 B

SUMMARY OF THE INVENTION

PROBLEM TO BE SOLVED BY THE INVENTION

[0005]

In conventional compositions containing oxidizing agents, further improvement in the stability of oxidizing agents has been required.

The object of the present invention is to provide a composition containing an oxidizing agent and a method for stabilizing an oxidizing agent which can improve the stability of the oxidizing agent.

MEANS FOR SOLVING PROBLEMS

[0006]

The present invention is based on the finding that the stability of the oxidizing agent can be improved by combining a specific acid in a predetermined ratio. The value of mass % indicating the content of the component is a value in a dosage forms including a solubilizing agent such as water when used.

[0007]

In order to achieve the above object, one embodiment of the present invention provides an composition containing an oxidizing agent containing (A) a stannate, (B) an aminocarboxylic acid-based chelating agent and (C) an acid, wherein the mass ratio of the content of the component (B) to the content of the component (A) is 0.01 to 35, and the pH of the composition is 2 to 5.

[0008]

In addition, (D) a cationic surfactant may be contained. In addition, (E) a polyoxyethylene alkyl ether type non-ionic surfactant may be contained. In addition, (F) a hydrocarbon may be contained. It may be used as a hair dyeing agent or a hair bleaching/destaining agent in admixture with an agent containing an alkaline agent.

[0009]

In another embodiment of the present invention, it provides a method for stabilizing an oxidizing agent in a composition containing an oxidizing agent, wherein (A) a stannate salt, (B) an aminocarboxylic acid-based chelating agent, and (C) an acid are added, the mass ratio of the content of the component (B) to the content of component (A) is 0.01 to 35, and the pH of the composition is 2 to 5.

EFFECTS OF THE INVENTION

[0010]

According to the present invention, the stability of the oxidizing agent can be improved.

DETAILED DESCRIPTION OF THE INVENTION

[0011]

One embodiment of the composition containing an oxidizing agent of the present invention will be described below. The composition containing an oxidizing agent is constituted as, for example, a second agent a hair dyeing agent or a hair bleaching/destaining agent containing an alkaline agent and an oxidizing agent. The specific examples of the hair dyeing agent or the hair bleaching/destaining include, for example, a two-agent type hair dyeing agent or hair bleaching/destaining agent, a three-agent type hair dyeing agent or hair bleaching/destaining agent and others. Hereinafter, components of a hair dyeing agent or a hair bleaching/destaining agent containing a second agent constituted as the composition containing an oxidizing agent will be exemplified.

[0012]

<Two-agent type hair bleaching/destaining agent >

The two-agent type hair bleaching/destaining agent is composed of, for example, a first agent containing at least an alkaline agent and a second agent containing at least an oxidizing agent.

[0013]

(Second agent of a two-agent type hair bleaching/destaining agent)

The second agent contains (A) a stannate, (B) an aminocarboxylic acid-based chelating agent, (C) an acid and others in addition to an oxidizing agent. The second agent preferably further contains (D) a cationic surfactant, (E) a polyoxyethylene (hereinafter referred to as "POE") alkyl ether type non-ionic surfactant and (F) a hydrocarbon.

[0014]

The oxidizing agent improves the decolorization of melanin contained in hair. The specific examples of oxidizing agents include, for example, hydrogen peroxide, urea peroxide, melamine peroxide, sodium percarbonate, sodium perborate, potassium perborate, ammonium persulfate, potassium persulfate, sodium persulfate, sodium peroxide, potassium peroxide, magnesium peroxide, barium peroxide, calcium peroxide, strontium peroxide, hydrogen peroxide adduct of sulfate, hydrogen peroxide adduct of phosphate, hydrogen peroxide adduct of pyrophosphate and others. Among the specific examples of these oxidizing agents, only one kind may be contained alone, or two or more kinds may be contained in combination.

[0015]

The lower limit of the content of the oxidizing agent in the second agent is appropriately set, and is preferably 0.1 mass % or more, more preferably 2.0 mass % or more and still more preferably 3.0 mass % or more. When the content of the oxidizing agent is 0.1 mass % or more, the decolorization property of melanin can be further improved. The upper limit of the content of the oxidizing agent in the second agent is appropriately set, and is preferably 15.0 mass % or less, more preferably 9.0 mass % or less and still more preferably 6.0 mass % or less. When the content of the oxidizing agent is 15.0 mass % or less, damage to hair and others can be suppressed.

[0016]

When hydrogen peroxide is added to the second agent as an oxidizing agent, the second agent preferably contains a stabilizing agent, such as ethylene glycol phenyl ether (phenoxyethanol), hydroxyethanediphosphonic acid or salt thereof, in order to improve the stability of the hydrogen peroxide. The specific examples of the hydroxyethanediphosphonates include, for example, tetrasodium hydroxyethanediphosphonate, disodium hydroxyethanediphosphonate and others.

[0017]

(A) The stannate improves the stability of the oxidizing agent. (A) The specific examples of the stannates include, for example, sodium stannate, potassium stannate and others. Of these specific examples of the component (A), only one kind may be contained alone, or two kinds may be contained in combination. The lower limit of the content of the component (A) in the second agent is appropriately set, and is preferably 0.001 mass % or more, more preferably 0.005 mass % or more and still more preferably 0.007 mass % or more. When the content is 0.001 mass % or more, the stability of the oxidizing agent is further improved. The upper limit of the content of the component (A) in the second agent is appropriately set, and is preferably 1 mass % or less, more preferably 0.6 mass % or less and still more preferably 0.45 mass % or less. When the content is 1 mass % or less, the stability of the oxidizing agent is further improved. In addition, the formulation stability of the second agent is further improved.

[0018]

(B) The aminocarboxylic acid chelating agent improves the stability of the oxidizing agent. The specific examples of aminocarboxylic acid-based chelating agents include, for example, ethylenediaminetetraacetic acid (EDTA, edetic acid), hydroxyethylenediaminetriacetic acid (HEDTA), dihydroxyethylenediaminediacetic acid (DHEDDA), 1,3-propanediaminetetraacetic acid (1,3PDTA), diethylenetriamine pentaacetic acid (DTPA), triethylenetetramine hexaacetic acid (TTHA), nitrilotriacetic acid (NTA), hydroxyethyliminodiacetic acid (HIMDA), L-aspartic acid-N,N-diacetic acid (ASDA) or salt thereof, or derivatives thereof and salt derivatives thereof. The examples of the salts include an alkali metal salt, for example, a sodium salt, a potassium salt and others. Of these specific examples of the component (B), only one kind may be contained alone, or two kinds may be contained in combination. Among these, EDTA, HEDTA, DTPA or its sodium salt is preferable from the viewpoint of excellent effect of improving the stability of the oxidizing agent.

[0019]

The lower limit of the content of the component (B) in the second agent is appropriately set, and is preferably 0.0001 mass % or more, more preferably 0.001 mass % or more and still more preferably 0.005 mass % or more. When the content is 0.0001 mass % or

more, the stability of the oxidizing agent is further improved. The upper limit of the content of the component (B) in the second agent is appropriately set, and is preferably 1 mass % or less, more preferably 0.5 mass % or less and more preferably 0.25 mass % or less. When the content is 1 mass % or less, the stability of the oxidizing agent is particularly improved.

[0020]

The lower limit of the mass ratio of the content of the component (B) to the content of the component (A) in the second agent is 0.01 or more, preferably 0.03 or more, more preferably 0.03 or more and still more preferably 0.7 or more. The upper limit of the mass ratio is 35 or less, preferably 25 or less, more preferably 20 or less and still more preferably 10 or less. By defining such a mass ratio within the above range, the stability of the oxidizing agent can be further improved.

[0021]

(C) The acids improve the stability of the oxidizing agent. (C) The acid may be an inorganic acid or an organic acid. The specific examples of the inorganic acids include, for example, phosphoric acid, hydrochloric acid, nitric acid, sulfuric acid, boric acid and others. The specific examples of phosphoric acids include, for example, orthophosphoric acid, polyphosphoric acid, pyrophosphate, metaphosphoric acid and others. The specific examples of the organic acids include, for example, citric acid, tartaric acid, lactic acid, malic acid, succinic acid, fumaric acid, maleic acid, gluconic acid, glucuronic acid, benzoic acid and others. Of these specific examples, only one kind may be contained alone, or two or more kinds may be contained in combination. Among these, inorganic acid, citric acid and tartaric acid are preferable from the viewpoint of excellent effect of improving the stability of the oxidizing agent, and phosphoric acid is more preferable.

[0022]

The lower limit of the content of the component (C) in the second agent is appropriately set from the viewpoint of pH adjustment, and is preferably 0.005 mass % or more, more preferably 0.01 mass % or more and still more preferably 0.02 mass % or more. When the content is 0.005 mass % or more, the pH of the second agent is adjusted to an appropriate acidic region, and the stability of the oxidizing agent is further improved. The upper limit of the content of the component (C) in the second agent is appropriately

set from the viewpoint of pH adjustment, and is preferably 2 mass % or less, more preferably 1 mass % or less and still more preferably 0.5 mass % or less. When the content is 2 mass % or less, the pH of the second agent is adjusted to an appropriate acidic region, and the stability of the oxidizing agent is further improved.

[0023]

(D) The cationic surfactants improve the formulation stability of the second agent. (D)

The specific examples of cationic surfactants include, for example, lauryltrimethylammonium chloride, cetyltrimethylammonium chloride, stearyltrimethylammonium chloride, alkyltrimethylammonium chloride, distearyldimethylammonium chloride, cetyltrimethylammonium bromide, stearyltrimethylammonium bromide, ethylsulfate lanolin fatty acid aminopropylethyldimethylammonium, stearyl trimethylammonium saccharin, cetyltrimethylammonium saccharin, methacryloyloxyethyltrimethylammonium chloride, methylbehenyltrimethylammonium sulfate, behenyldimethylamine, behenic acid diethylaminoethylamide, behenic acid dimethylaminopropylamide, behenic acid dimethylaminoethylamide, stearyl dimethylamine, palmitoxypropyldimethylamine, stearoxypropyl dimethylamine, dimethylaminopropylamide stearate and others. The specific examples of alkyltrimethylammonium chlorides include behenyltrimethylammonium chloride, aralkyltrimethylammonium chloride and others. Of these specific examples, only one kind may be contained alone, or two or more kinds may be contained in combination. Among these, lauryltrimethylammonium chloride, cetyltrimethylammonium chloride, stearyltrimethylammonium chloride, alkyltrimethylammonium chloride are preferable from the viewpoint of excellent improvement effect of formulation stability.

[0024]

The lower limit of the content of the component (D) in the second agent is appropriately set, and is preferably 0.01 mass % or more, more preferably 0.02 mass % or more and still more preferably 0.05 mass % or more. When the content is 0.01 mass % or more, the formulation stability of the second agent is further improved. The upper limit of the content of the component (D) in the second agent is appropriately set, and is preferably 5 mass % or less, more preferably 2 mass % or less and still more preferably 1 mass % or less. When the content is 5 mass % or less, the formulation stability of the second

agent is further improved. In addition, the stability of the oxidizing agent is further improved.

[0025]

The lower limit of the mass ratio of the content of the component (A) to the content of the component (D) in the second agent is appropriately set, and is preferably 0.01 or more, more preferably 0.05 or more and still more preferably 0.1 or more. The upper limit of the mass ratio is appropriately set, and is preferably 5 or less, more preferably 4 or less and still more preferably 3 or less. By defining such a mass ratio within the above range, the stability of the oxidizing agent and the formulation stability can be further improved.

[0026]

(E) The POE alkyl ether-type non-ionic surfactants improve the formulation stability of the second agent. (E) The specific examples of POE alkyl ether-type non-ionic surfactants include, for example, POE cetyl ether (cetes), POE stearyl ether (stearless), POE vehenyl ether, POE oleyl ether (oles), POE lauryl ether (laureth), POE octyl dodecyl ether, POE hexyl decyl ether, POE isostearyl ether, POE polyoxypropylene cetyl ether, POE polyoxypropylene decyl tetradecyl ether and others. Of these specific examples, only one kind may be contained alone, or two or more kinds may be contained in combination. Among these, POE cetyl ether (ceteth), POE stearyl ether (stearle), POE lauryl ether (laures) are preferable, and POE cetyl ether (ceteth) is more preferable from the viewpoint of excellent improvement of the formulation stabilities.

[0027]

The lower limit of the content of the component (E) in the second agent is appropriately set, and is preferably 0.01 mass % or more, more preferably 0.05 mass % or more and still more preferably 0.1 mass % or more. When the content is 0.01 mass % or more, the formulation stability of the second agent is further improved. The upper limit of the content of the component (E) in the second agent is appropriately set, and is preferably 10 mass % or less, more preferably 7 mass % or less and still more preferably 5 mass % or less. When the content is 10 mass % or less, the formulation stability of the second agent is further improved.

[0028]

The lower limit of the mass ratio of the content of the component (A) to the total of the content of the component (D) and the content of the component (E) in the second agent is appropriately set, and preferably 0.001 or more, more preferably 0.002 or more and still more preferably 0.005 or more. The upper limit of such a mass ratio is appropriately set, and is preferably 0.5 or less, more preferably 0.4 or less and still more preferably 0.3 or less. By defining such a mass ratio within the above range, the stability of the oxidizing agent and the formulation stability are further improved.

[0029]

(F) The hydrocarbons improve the formulation stability of the second agent. (F) The specific examples of hydrocarbons include, for example, paraffin, olefin oligomer, polyisobutene, hydrogenated polyisobutene, mineral oil, squalane, polybutene, polyethylene, microcrystalline wax, petrolatum, liquid paraffin, light isoparaffin, light liquid isoparaffin, isoparaffin, α -olefin oligomer, synthetic squalane and others. Of these specific examples, only one kind may be contained alone, or two or more kinds may be contained in combination. Among these, from the viewpoint of excellent improvement effect of formulation stability, hydrocarbons in liquid form at 25 °C, for example, α -olefin oligomer, light isoparaffin, light liquid isoparaffin, synthetic squalane, vegetable squalane, squalane, polybutene, liquid paraffin, polyisobutene, hydrogenated polyisobutene and others are preferable. In addition, α -olefin oligomers, light fluid isoparaffins and fluid paraffins are more preferred.

[0030]

The lower limit of the content of the component (F) in the second agent is appropriately set, and is preferably 0.01 mass % or more, more preferably 0.05 mass % or more and still more preferably 0.5 mass % or more. When the content is 0.01 mass % or more, the formulation stability of the second agent is further improved. The upper limit of the content of the component (F) in the second agent is appropriately set, and is preferably 10 mass % or less, more preferably 7 mass % or less and still more preferably 4 mass % or less. When the content is 10 mass % or less, the formulation stability of the second agent is further improved.

[0031]

The hair bleaching/destaining agent may further contain, if necessary, components other than above, for example, solubilizing agents, water-soluble polymers, inorganic

polymers, oily components other than above, polyhydric alcohols, surfactants other than above, pH adjusting agents other than above, sugars, preservatives, stabilizers, plant extracts, crude drug extracts, vitamins, perfumes, antioxidants, chelating agents other than above, ultraviolet absorbers and others.

[0032]

The solubilizing agent is added, for example, when the second agent is in a liquid state. The examples of solubilizing agents used include, for example, water and organic solvents (solvents). The specific examples of the organic solvents include, for example, ethanol, n-propanol, isopropanol, methylcellosolve, ethylcellosolve, methylcarbitol, ethylcarbitol, benzyl alcohol, phenethylalcohol, γ -phenylpropyl alcohol, cinnamic alcohol, anise alcohol, p-methylbenzyl alcohol, α -dimethylphenethylalcohol, α -phenyl ethanol, ethylene glycol phenyl ether (phenoxyethanol), phenoxypropanol, 2-benzyloxyethanol, N-alkylpyrrolidone, alkylene carbonate, alkyl ether and others. Of these solubilizing agents, only one kind may be contained alone, or two or more kinds may be contained in combination. Among these, water is preferably applied because of its excellent ability to dissolve other components in the second agent. When water is used as the solvent, the content of water in the second agent (at the time of use) is preferably 40 mass % or more, more preferably 50 mass % or more.

[0033]

The water-soluble polymer provides a moderate viscosity to the hair bleaching/destaining. Therefore, the hair bleaching/destaining agent may contain a water-soluble polymer within a range that does not inhibit the effect of the present invention. The examples of the water-soluble polymers include, for example, a natural polymer, a semi-synthetic polymer, a synthetic polymer. The specific examples of natural polymers include, for example, starch, guar gum, locust bean gum, quince seed, carrageenan, galactan, gum arabic, tragacanth gum, pectin, mannan, xanthan gum, dextran, succinoglucan, curdlan, hyaluronic acid, gelatin, casein, albumin, collagen, dextrin, triglucopolysaccharide (pullulan) and others.

[0034]

The specific examples of semisynthetic polymers include, for example, crystalline cellulose, methylcellulose, ethylcellulose, hydroxyethylcellulose, hydroxyethylcellulose dimethyldiallylammonium chloride, hydroxypropylcellulose, carboxymethylcellulose,

sodium carboxymethylcellulose, hydroxypropylmethylcellulose, cationized cellulose, cationized guar gum, starch phosphate ester, propylene glycol alginate ester, alginate and others.

[0035]

The specific examples of synthetic polymers include, for example, polyvinylcaprolactam, polyvinyl alcohol (PVA), polyvinylpyrrolidone (PVP), vinylpyrrolidone-vinyl acetate (VP/VA) copolymers, polyvinyl butyral, polyvinyl methylether, carboxyvinyl polymer, sodium polyacrylate, polyacrylamide, polyethylene oxide, ethylene oxide-propylene oxide block copolymers, acrylic acid/alkyl acrylate copolymers, polydimethylmethylenepiperidinium chloride (polydimethyldimethylene pyrrolidinium chloride) (polyquaternium-6) (Marquat 100: Merck), and copolymers include half esters of itaconic acid and POE alkyl ether, or esters of methacrylic acid and POE alkyl ether and at least one monomer selected from acrylic acid, methacrylic acid and alkyl esters thereof. Of these, only one kind may be contained alone, or two or more kinds may be contained in combination.

[0036]

The specific examples of the inorganic polymers include, for example, bentonite, magnesium aluminum silicate, laponite, hectorite, anhydrous silicic acid and others, Of these, only one kind may be contained alone, or two or more kinds may be contained in combination.

[0037]

The oily component particularly gives the hair a lubricious feel. Therefore, the hair bleaching/destaining agent may further contain an oily component other than the oily component described above within a range that does not inhibit the effect of the present invention. The examples of the oily components include, for example, fats and oils, waxes, ester oils, higher alcohols, higher fatty acids, alkyl glyceryl ethers, silicones and others.

[0038]

The specific examples of oils and fats include, for example, argania spinosa kernel oil, olive oil, tsubaki oil, shea butter, almond oil, safflower oil, sunflower oil, soybean oil, cottonseed oil, sesame oil, corn oil, rapeseed oil, rice bran oil, rice germ oil, grape seed oil, avocado oil, macadamia nut oil, castor oil, coconut oil, evening primrose oil, apricot

kernel oil, persic oil, peach kernel oil, palm oil, egg yolk oil and others. The specific examples of the waxes include, for example, lanolin, beeswax, candelilla wax, carnauba wax, jojoba oil and others.

[0039]

The specific examples of ester oils include, for example, diisopropyl adipate, isopropyl myristate, cetyl octanoate, isononyl isononanoate, octyldodecyl myristate, isopropyl palmitate, stearyl stearate, myristyl myristate, isotridecyl myristate, 2-ethylhexyl palmitate, octyldecyl lysinolate, cholesteryl/lanosteryl fatty acid having 10 to 30 carbon atoms, cetyl lactate, lanolin acetate, ethylene glycol di-2-ethylhexanoate, pentaerythritol fatty acid esters, dipentaerythritol fatty acid esters, cetyl caprate, glyceryl tricaprilate, diisostearyl malate, dioctyl succinate, cetyl 2-ethylhexanoate, isostearic acid-hardened castor oil and others.

[0040]

The specific examples of higher alcohols include, for example, cetyl alcohol (cetanol), 2-hexyldecanol, stearyl alcohol, isostearyl alcohol, cetostearyl alcohol, oleyl alcohol, arachidyl alcohol, behenyl alcohol, 2-octyldodecanol, lauryl alcohol, myristyl alcohol, decyltetradecanol, lanolin alcohol and others.

[0041]

The specific examples of higher fatty acids include, for example, lauric acid, myristic acid, palmitic acid, stearic acid, behenic acid, isostearic acid, 12-hydroxystearic acid, oleic acid, lanolic fatty acid and others. The specific examples of alkyl glyceryl ethers include, for example, batyl alcohol, chimyl alcohol, ceralkyl alcohol, isostearyl glyceryl ether and others.

[0042]

The specific examples of silicones include, for example, dimethylpolysiloxane (dimethicone), methylphenyl polysiloxane, decamethylcyclopentachloroxane, dodecamethylcyclohexasiloxane, terminal hydroxyl-modified dimethylpolysiloxane, highly polymerized silicone, polyether-modified silicone (e.g., (PEG/PPG/butylene/dimethicone) copolymer), amino-modified silicone, betaine-modified silicone, alkyl-modified silicone, alkoxy-modified silicone, mercapto-modified silicone, carboxy-modified silicone, fluorine-modified silicone and others.

Of these oily components, only one kind may be contained alone, or two or more kinds may be contained in combination.

[0043]

The examples of the polyhydric alcohols include glycol, glycerin and others. The examples of glycols include ethylene glycol, diethylene glycol, triethylene glycol, polyethylene glycol, highly polymerized polyethylene glycol, propylene glycol, dipropylene glycol, polypropylene glycol, isoprene glycol, 1,3-butylene glycol and others. The examples of glycerins include glycerin, diglycerin, polyglycerin and others. Of these polyhydric alcohols, only one kind may be contained alone, or two or more kinds may be contained in combination.

[0044]

The surfactant emulsifies or solubilizes the hair bleaching/destaining agent as an emulsifying agent or an ingredient for solubilizing each ingredient, thereby adjusting the viscosity or improving the viscosity stability when the hair bleaching/destaining agent is used. Therefore, the hair bleaching/destaining agent may contain a surfactant other than the above-mentioned surfactant within a range that does not inhibit the effect of the present invention. Surfactants include anionic surfactants, amphoteric surfactants and non-ionic surfactants other than above.

[0045]

The specific examples of anionic surfactants include, for example, alkyl ether sulfates, alkyl sulfates, alkyl ether sulfates, alkenyl ether sulfates, alkenyl sulfates, olefin sulfonate, alkane sulfonate, saturated or unsaturated fatty acid salts, alkyl or alkenyl ether carboxylates, α -sulfonic fatty acid salts, N-acylamino acid type surfactants, phosphate mono or diester type surfactants, sulfosuccinate esters, N-alkyloylmethyltaurine salts and derivatives thereof. The specific examples of the counter ion of the anionic group of these surfactants include, for example, sodium ion, potassium ion, triethanolamine and others. More specifically, examples of the alkyl ether sulfate ester salts include, for example, sodium POE lauryl ether sulfate. The specific examples of alkyl sulfates include, for example, sodium lauryl sulfate, sodium cetyl sulfate and others. The specific examples of derivatives of alkyl sulfates include, for example, POE sodium lauryl sulfate and others. The specific examples of the sulfosuccinate esters include, for example, lauryl disodium sulfosuccinate and others.

The specific examples of the N-alkyloylmethylethylamine salts include, for example, N-stearoyl-N-methylethylamine sodium and others.

[0046]

The specific examples of the amphoteric surfactants include, for example, cocobetaine, lauramidopropyl betaine, cocamidopropyl betaine, sodium lauroamfoacetate, sodium cocoamfoacetate, palm oil fatty acid amidopropyl betaine, lauryl betaine (lauryl dimethylaminoacetate betaine), sodium lauryl aminopropionate and others.

[0047]

The specific examples of the non-ionic surfactants include, for example, an ether-type non-ionic surfactant other than above, an ester-type non-ionic surfactant, an alkyl glucoside and others. The specific examples of the ether-type non-ionic surfactants include, for example, POE nonylphenyl ether, POE octylphenyl ether and others.

[0048]

The specific examples of ester-type non-ionic surfactants include, for example, POE sorbitan monooleate, POE sorbitan monostearate, POE sorbitan monopalmitate, POE sorbitan monolaurate, POE sorbitan trioleate, POE glyceryl monostearate, POE glyceryl monomyristate, POE sorbit tetraoleate, POE sorbite hexastearate, POE sorbite monolaurate, POE sorbitol beeswax, polyethyleneglycol monooleate, polyethyleneglycol monostearate, polyethyleneglycol monolaurate, lipophilic glyceryl monooleate, lipophilic glyceryl monostearate, self-emulsifying glyceryl monostearate, sorbitan monooleate, sorbitan sesquioleate, sorbitan trioleate, sorbitan monostearate, sorbitan monopalmitate, sorbitan monolaurate, sucrose fatty acid ester, decaglyceryl monolaurate, decaglyceryl monostearate, decaglyceryl monooleate, decaglyceryl monomyristate, POE-reduced lanolin and others.

[0049]

The specific examples of alkyl glucosides include, for example, alkyl (8-16 carbon) glucosides, POE methyl glucosides, POE dioleate methyl glucoside and others. Of these specific examples of surfactants, only one kind may be contained alone, or two or more kinds may be contained in combination.

[0050]

The pH adjusting agent may be formulated to adjust the pH of the hair bleaching/destaining agent. The examples of the pH adjusting agents include salts of

organic acids in addition to the above-mentioned acid components. The specific examples of the salts include, for example, a sodium salt, a potassium salt, an ammonium salt and others. The content of the pH adjusting agent in the second agent is an amount in which the pH of the second agent is in the range of pH 2 to 5, and an amount in the range of pH 2 to 4 is preferable. Adjusting the pH of the second agent to such a range improves the stability of the oxidizing agent contained in the second agent. In addition, the pH of the second agent shall be measured at 25°C of the stock solution of the second agent.

[0051]

The specific examples of sugars include, for example, monosaccharides such as glucose and galactose, disaccharides such as maltose, sucrose, fructose and trehalose, sugar alcohols and others. The specific examples of preservatives include, for example, paraben, methylparaben, sodium benzoate and others. The specific examples of the stabilizers include, for example, phenacetin, 8-hydroxyquinoline, acetanilide, sodium pyrophosphate, barbituric acid, uric acid, tannic acid and others. The specific examples of the antioxidants include, for example, ascorbic acids, sulfites and others. The specific examples of the chelating agents include, for example, hydroxyethanediphosphonic acid (HED P) or salt thereof and others.

[0052]

The dosage form of the second agent is not particularly limited, and as a specific examples of the dosage forms at 25 °C includes, for example, a liquid form such as an aqueous solution or an emulsion, a gel form, a foam form, a cream form and others. In addition, aerosols, non-aerosols and others may be used, and in the case of non-aerosols, various forms such as a squeeze former type and a pump former type may be further used. In the case of aerosols, known propellants and blowing agents can be applied. The specific examples of the propellant or the blowing agents include, for example, liquefied petroleum gas (LPG), dimethylether (DME), nitrogen gas, carbon dioxide gas and others. Only one of these may be used, or two or more kinds may be used in combination.

[0053]

(First agent of a two-agent type hair bleaching/destaining agents)

The first agent contains an alkaline agent. The alkaline agent contained in the first agent promotes the action of the oxidizing agent contained in the second agent, and functions to improve the bleaching effect and/or the destaining effect of the hair. In the hair dyeing agent described later, the hair dyeing property is improved.

[0054]

The specific examples of the alkaline agents include, for example, ammonia, alkanolamine, silicate, carbonate, bicarbonate, metasilicate, sulfate, chloride, phosphate, organic amine, basic amino acid, alkali metal or alkaline earth metal hydroxide and others. The specific examples of alkanolamines include, for example, monoethanolamine, triethanolamine and others. The specific examples of the silicates include, for example, sodium silicate, potassium silicate and others. The specific examples of carbonates include, for example, sodium carbonate, ammonium carbonate and others. The specific examples of the bicarbonates include, for example, sodium bicarbonate, ammonium bicarbonate and others. The specific examples of the metasilicates include, for example, sodium metasilicate, potassium metasilicate and others. The specific examples of the sulfates include, for example, ammonium sulfate and others. The specific examples of the chlorides include, for example, ammonium chloride and others. The specific examples of the phosphates include, for example, ammonium dihydrogen phosphate, diammonium hydrogen phosphate, sodium dihydrogen phosphate, disodium hydrogen phosphate, trisodium phosphate and others. The specific examples of organic amines include, for example, 2-amino-2-methyl-1-propanol (AMP), 2-amino-2-methyl-1,3-propanediol, guanidine, 1-amino-2-propanol (MIPA) and others. The specific examples of the basic amino acids include, for example, arginine, lysine and others. The specific examples of the hydroxide of the alkali metal or alkaline earth metals include, for example, sodium hydroxide, potassium hydroxide and others. Of these alkaline agents, only one kind may be contained alone, or two or more kinds may be contained in combination. Among these, ammonia, ammonium salt, alkanolamine and carbonate are preferably used from the viewpoint of excellent effect of improving the lightness of hair.

[0055]

The content of the hair bleaching/destaining agent, that is, the alkaline agent in the mixture of the first agent and the second agent at the time of use, when the hair

bleaching/destaining agent is applied to the normal bleaching/destaining treatment, is preferably added in an amount having a pH in the range of 7 to 12, more preferably in an amount having a pH in the range of pH 9 to 12. By setting the pH of the mixture to 7 or more, the action of the oxidizing agent included in the second agent can be promoted. By setting the pH of the mixture to 12 or less, it is possible to suppress damage to the hair due to application of the hair bleaching/destaining agent. In addition, the pH of the hair bleaching/destaining agent shall be measured at 25°C of the stock solution of the hair bleaching/destaining agent.

[0056]

The first agent is generally contained in the hair bleaching/destaining agent, and may contain components which do not inhibit the action of the above-mentioned components. For example, a component contained in the above-mentioned second agent may be appropriately contained within a range that does not inhibit the effect of the present invention.

[0057]

The dosage form of the first agent is not particularly limited, and specific examples of the dosage forms at 25 °C includes, for example, a liquid such as an aqueous solution or emulsion, a gel form, a foam form, a cream form, a solid form and others. In addition, an aerosol, non-aerosol and others may be used. In the case of aerosols, known propellants and blowing agents can be applied. Solid forms include powdery, granular, tablet and others. In the case of solid dosage forms, dispersing agents, for example, metal stearates such as calcium stearate, magnesium stearate, sodium sulfate, talc, lactose, hydroxypropylcellulose having a low degree of substitution may also be added. Only one of these may be used, or two or more kinds may be used in combination.

[0058]

<Three-agent type hair bleaching/destaining agent>

The three-agent type hair bleaching/destaining agent is, for example, a first agent having the same composition as the first agent of the above-mentioned two-agent type hair bleaching/destaining agent, a second agent having the same composition as the second agent of the above-mentioned two-agent type hair bleaching/destaining agent and a third agent containing at least percarbonate. The three-agent hair

bleaching/destaining agent is constructed as described above further improves lightness because percarbonate is used in combination as an oxidizing agent.

[0059]

(Third agent of a three-agent type hair bleaching/destaining agent)

The third agent can be added a dispersant and others in addition to the percarbonate. Percarbonates improve the oxidizing action and further improve the lightness of the hair after hair treatment. The specific examples of the percarbonates include sodium percarbonate, potassium percarbonate and others. Of these specific examples, only one kind may be contained alone, or two or more kinds may be contained in combination.

[0060]

The dosage form of the third agent is preferably a solid form at 25 °C from the viewpoint of formulation stability. Solid forms include powdery, granular, tablet and others. In addition, the third agent may contain components which are generally contained in the hair bleaching/destaining agent and which do not inhibit the action of the above-mentioned components. For example, the components contained in the above-mentioned first and second agents may be appropriately contained within a range that does not inhibit the effect of the present invention.

[0061]

<Two-agent type hair dyeing agent>

The two-agent type hair dyeing agent are composed of, for example, a first agent containing at least an alkaline agent and an oxidizing agent and a second agent containing at least an oxidizing agent. Hereinafter, the difference from the hair bleaching/destaining agent described above will be mainly explained.

[0062]

(Second agent of a two-agent type hair dyeing agent)

The second agent of the hair dyeing agent has, for example, the same composition as the second agent of the hair bleaching/destaining agent described above.

(First agent of a two-agent type hair dyeing agent)

The first agent of dyeing agent contains, for example, an alkaline agent and an oxidizing dye. The examples of the alkaline agent contained in the first agent are the same as those described above in the hair bleaching/destaining agent described above, specific examples of the alkaline agent used. Oxidizing dyes are compounds that can develop

color due to oxidative polymerization with an oxidizing agent and are classified as dye intermediates and couplers, wherein the oxidizing dyes preferably comprise dye intermediates and couplers.

[0063]

The examples of dye intermediates include, for example, p-phenylenediamine, toluene-2,5-diamine (paratoluylenediamine), N-phenyl-p-phenylenediamine, 4,4'-diaminodiphenylamine, p-aminophenol, o-aminophenol, p-methylaminophenol, N,N-bis(2-hydroxyethyl)-p-phenylenediamine, 2-hydroxyethyl-p-phenylenediamine, o-chloro-p-phenylenediamine, 4-amino-m-cresol, 2-amino-4-hydroxyethylaminoanisole, 2,4-diaminophenol, 1-hydroxyethyl-4,5-diaminopyrazole or salt thereof and others. The specific examples of the salts include, for example, a hydrochloride salt, a sulfate salt and others. Among the specific examples of these dye intermediates, only one kind may be contained alone, or two or more kinds may be contained in combination.

[0064]

The coupler develops color by binding to a dye intermediate. The examples of couplers include, for example, resorcin, 5-amino-o-cresol, m-aminophenol, α -naphthol, 5-(2-hydroxyethylamino)-2-methylphenol, m-phenylenediamine, 2,4-diaminophenoxyethanol, toluene-3,4-diamine, 2,6-diaminopyridine, diphenylamine, N,N-diethyl-m-aminophenol, phenylmethylpyrazolone, 1,5-dihydroxynaphthalene or salt thereof and others. The specific examples of the salts include, for example, a hydrochloride salt, a sulfate salt and others. Among the specific examples of these couplers, only one kind may be contained alone, or two or more kinds may be contained in combination. The oxidizing dye is preferably composed of at least one selected from the above specific examples of the dye intermediates and at least one selected from the above specific examples of couplers, since the color tone of the hair can be varied. The first agent may suitably contain, as a dye other than the above-mentioned oxidizing dye, an oxidizing dye listed in, for example, the "Standard for quasi-drugs raw materials" (published in June 2006, Yakuji Nippo, Ltd.).

[0065]

The lower limit of the content of the oxidizing dye in the hair dyeing agent is appropriately set, and is preferably 0.01 mass % or more, more preferably 0.1 mass %

or more and still more preferably 0.5 mass % or more. When the content of the oxidizing dye is 0.01 mass % or more, the hue can be particularly improved.

[0066]

The upper limit of the content of the oxidizing dye in the hair dyeing agent is appropriately set, and is preferably 10 mass % or less, more preferably 7 mass % or less and still more preferably 5 mass % or less. When the content of the oxidizing dye is 10 mass % or less, the solubility in the solubilizing agent can be improved particularly when the solubilizing agent is used.

[0067]

The first agent may further contain components other than above as necessary, for example, components included in the first and second agents of the hair bleaching/destaining agent described above.

<Three-agent type hair dyeing agent>

The three-agent type hair dyeing agent is composed of, for example, a first agent having the same composition as the first agent of the two-agent type hair dyeing agent described above, a second agent having the same composition as the second agent of the two-agent type hair dyeing agent described above, and a third agent containing at least percarbonate. The three-agent type hair dyeing agent constructed in this manner further improves lightness because percarbonate is used in combination as an oxidizing agent.

[0068]

(Third agent of a three-agent type hair dyeing agent)

The third agent of the hair dyeing agent has, for example, the same composition as the third agent of the hair bleaching/destaining agent described above. Percarbonates improve the oxidizing action and improve the lightness of the hair after hair treatment. Then, the gray hair concealment property is improved.

[0069]

Next, a method of use when the composition containing the oxidizing agent of the present embodiment is applied as a hair dyeing agent or a hair bleaching/destaining agent composed of a plurality of agents will be described below.

First, the hair dyeing agent or the hair bleaching/destaining agent composed of the above-mentioned plural agents is mixed, whereby mixture for a hair dyeing agent, hair bleaching/destaining agent containing an alkali agent, an oxidizing agent and others is

prepared, and then applied to the hair. The mixing method is not particularly limited, and for example, a stirring bar, a brush and others may be used to stir the mixture by hand, or a stirrer, an electric stirrer and others may be used. When the dosage form of the mixture is foamed, shaking and foaming may be performed. For the application of the hair dyeing agent or the mixture of the hair bleaching/destaining agent to the hair, it is possible to apply a known method, for example, a method in which the hair is applied to a thin gloved hand, a comb or a brush. In the case of the aerosol type, after the plurality of agents are discharged in the form of bubbles, the mixture may be applied to the hair, or the agents may be mixed on the hair while being applied to the hair.

[0070]

After a predetermined period of time has elapsed after the mixture has been applied to the hair, the step of rinsing the mixture applied to the hair with water is carried out according to conventional methods. Next, a step of washing the hair and rinsing with water is preferably performed using a shampooing composition in a conventional manner. The shampoo composition is not particularly limited as long as it is applied for cleaning hair, and a known shampoo composition can be applied. Next step the hair is rinsed and flushed with water, preferably using a rinsing composition according to conventional methods. The composition for rinsing is not particularly limited as long as it is applied for rinsing hair, and a known composition for rinsing can be applied. As the treatment step using the rinsing composition, a known rinsing composition can be applied. Next, a step of drying the hair is performed, preferably according to conventional methods.

[0071]

According to the composition containing the oxidizing agent of the above embodiment, the following effects can be obtained.

(1) The composition containing the oxidizing agent of the present embodiment contains components (A) to (C) in addition to the oxidizing agent. Thus, the stability of the oxidizing agent, in particular hydrogen peroxide, is improved.

In addition, the effect can be sufficiently exhibited without lowering the effect of hair dyeing or bleaching/destaining.

[0072]

(2) The composition containing the oxidizing agent of the present embodiment contains components (D) to (F). Thus, the formulation stability of the composition containing the oxidizing agent is improved. In particular, even when a large amount of (A) stannate is added, it is possible to suppress the decrease of the formulation stability derived from (A) stannate.

[0073]

The above embodiment may be modified as follows.

In the above-mentioned hair dyeing agent, as a dye other than the above-mentioned oxidizing dye, for example, a direct dye listed in the "Standard for quasi-drugs raw materials" (published in June 2006, Yakuji Nippo, Ltd.) may be appropriately contained within a range that does not inhibit the effect of the present invention.

[0074]

In the composition containing the oxidizing agent of the above embodiment, the components (A) to (F) may be added in the composition containing the oxidizing agent at the time of storage, and some of other components constituting each agent may be constructed as a separate agent to further increase the number of dosage forms. Also in such a construction, the stability of the oxidizing agent and the formulation stability can be improved.

[0075]

In the hair dyeing agent or hair bleaching/destaining agent of the above embodiment, as long as the effect of the present invention is achieved, a part of each component contained in each agent constituting the above-mentioned hair dyeing agent or hair bleaching/destaining agent may be constituted as a separate agent, and the number of dosage forms may be increased.

[0076]

For example, in the first agent of the hair dyeing agent or the hair bleaching/destaining agent described above, the alkali agent and the composition other than the alkali agent may be separately formed as a separate agent. In addition, it may be constituted as a multi-agent type hair dyeing agent or hair bleaching/destaining agent in which an agent containing an oxidation aid such as persulfate salt is further combined.

[0077]

In the above embodiment, the dosage form of the mixture in which each agent is mixed is not particularly limited, specific examples of the dosage form at 25 °C, for example, an emulsion, a liquid such as an aqueous solution or a milky lotion, a gel form, a foam form, a cream form and others.

[0078]

The composition containing the oxidizing agent of the above embodiment was constituted as a multiagent type hair dyeing agent or a second agent of hair bleaching/destaining agent. The composition containing the oxidizing agent may be constructed as a second agent of a permanent wave agent containing an oxidizing agent in addition to the above embodiment. Also in such a construction, the stability of the oxidizing agent, particularly hydrogen peroxide, in the second agent is improved. In addition, the permanent wave effect can be sufficiently exhibited without decreasing the permanent wave effect.

[0079]

Applying the above embodiment, the composition containing the oxidizing agent is added (A) a stannate, (B) an aminocarboxylic acid-based chelating agent and (C) an acid so that the mass ratio of the content of the component (B) to the content of the component A is 0.01 to 35, and is adjusted to pH 2 to 5, thus, a method for stabilizing the oxidizing agent may be constituted.

EXPERIMENTALS

[0080]

Next, examples and comparative examples will be given to more specifically explain the above-mentioned embodiments. Incidentally, the present invention is not limited to the construction described in the example section.

A first agent of an oxidative hair dyeing agent and a second agent as a composition containing an oxidizing agent containing each component shown in Tables 1 to 4 were prepared. The numerical values in the columns showing the components in the respective tables indicate the content of the components in the columns, and the unit thereof is mass %. In the tables, "(A)" to "(F)" denote compounds corresponding to the components (A) to (F) described in the claims of the present application. Values in parentheses for compound name POE indicate the number of moles of E.O. The first

agent and the second agent of the oxidative hair dyes shown in Tables 1 to 4 were mixed at a mass ratio of 1:1 to prepare a creamy oxidative hair dye.

[0081]

The obtained oxidative hair dyeing agent was applied to black and white hair bundles (10 cm, Beaulax Co.,Ltd.) (hereinafter simply referred to as hair bundles) using a brush, and left at 30 °C for 30 minutes. Next, the oxidized hair dye attached to the hair bundle was rinsed with water, and then the hair bundle was treated twice with shampoos (bigen treatment shampoo for shampoo composition, Hoya Co., Ltd.) and once with rinse (bigen treatment rinse for rinse composition, Hoya Co., Ltd.). In addition each of the shampoo composition and the rinse composition is washed with water for each treatment. Subsequently, the hair bundle was dried with warm air and left to stand for one day. The stability of the oxidizing agent in the second agent prior to mixing with the first agent and the formulation stability of the second agent were evaluated by the method described below.

[0082]

(The stability of the oxidizing agent)

The hydrogen peroxide as an oxidizing agent in the second agent was placed in a polyethylene container and left at 60 °C for 7 days, and then the amount of hydrogen peroxide remaining was quantified by oxidation-reduction titration to calculate the amount of hydrogen peroxide remaining. The evaluation criteria were carried out in the following four stages. The evaluation results were as follows: 99 mass % or more of hydrogen peroxide remaining ratio compared with immediately after preparation was "good: 4", "98 mass % or more and less than 99 mass % are "acceptable: 3", "96 mass % or more and less than 98 mass % are "slightly defective: 2", and "96 mass % or less than 98% is "defective: 1".

[0083]

(The formulation stability of the second agent)

The formulation stability of the second agent in liquid form was judged by visually evaluating the separation state of the second agent by five panelists after placing it in a polyethylene container and leaving it at 50 °C for one day. The scores were graded in five grades, excellent (5 points) for no separation at all, good (4 points) for slight

separation, acceptable (3 points) for little separation, slightly defective (2 points) for a little separation, defective (1 point) for many separation. The average value was calculated for the scoring results of each panelist, and the average value is 4.6 points or more as "excellent: 5", 3.6 points or more and less than 4.6 points as "good: 4", 2.6 points or more and less than 3.6 points as " acceptable: 3", 1.6 points or more and less than 2.6,points as " slightly defective: 2", less than 1.6 as "defective: 1" as an evaluation result.

[0084]

[Table 1]

The Second agent (ingredient name)	Examples										
	1	2	3	4	5	6	7	8	9	10	11
(A) 35 mass % hydrogen peroxide	16.6	16.6	16.6	16.6	16.6	16.6	16.6	16.6	16.6	16.6	16.6
(A) Sodium stannate	0.01	0.4	0.0014	0.5	0.01	0.01	0.01	0.01	0.01	0.01	0.01
(B) Trisodium hydroxyethylenediamine triacetate solution	0.04	0.04	0.04	0.04	0.0001	0.004	0.01	0.2	0.3	-	0.04
(B) Tetrasodium edetate tetrahydrate	-	-	-	-	-	-	-	-	-	0.04	-
(C) Phosphoric acid	0.1	0.65	0.04	0.7	0.01	0.05	0.06	0.3	0.48	0.1	-
(C) Citric acid	-	-	-	-	-	-	-	-	-	-	0.3
(D) Stearyltrimethylammonium chloride	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
(E) POE(2)Cetyl ether	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
(E) POE(21)Lauryl ether	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
(F) Liquid paraffin	1	1	1	1	1	1	1	1	1	1	1
(F) Cetanol	1	1	1	1	1	1	1	1	1	1	1
(F) POE-reduced lanolin	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
(F) lipophilic glyceryl monostearate	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
(F) Propylene glycol	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
(F) Phenoxyethanol	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
(F) Purified water	Remaining amount	Remaining amount	Remaining amount	Remaining amount	Remaining amount	Remaining amount	Remaining amount	Remaining amount	Remaining amount	Remaining amount	Remaining amount
(F) Total	100	100	100	100	100	100	100	100	100	100	100
(F) Component (B) / Component (A) mass ratio	4.0	0.1	28.6	0.08	0.01	0.4	1.0	20.0	30.0	4.0	4.0
(F) Component (A) / Component (D) mass ratio	0.1	4.0	0.014	5.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1
(F) Component (A) / Component (D) + (E) mass ratio	0.009	0.36	0.0013	0.45	0.009	0.009	0.009	0.009	0.009	0.009	0.009
(F) pH of the stock solution of the second agent	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5
(F) Evaluation											
(F) Stability of oxidizing agent (Evaluation 1-4)	4	4	3	3	3	3	4	4	3	4	3
(F) Formulation stability (Evaluation 1-5)	5	5	5	3	5	5	5	5	5	5	5

[0085]

[Table 2]

The second agent (ingredient name)		Examples								
		12	13	14	15	16	17	18	19	20
	35 mass % hydrogen peroxide	16.6	16.6	16.6	16.6	16.6	16.6	16.6	16.6	16.6
(A)	Sodium stannate	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
(B)	Trisodium hydroxyethylenediamine triacetate solution	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04
(C)	Phosphoric acid	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
(D)	Stearyltrimethylammonium chloride	0.05	1	0.1	0.1	0.1	0.1	-	0.1	0.1
(E)	POE(2)Cetyl ether	0.5	0.5	0.05	2.5	0.5	0.5	0.5	-	0.5
	POE(21)Lauryl ether	0.5	0.5	0.05	2.5	0.5	0.5	0.5	-	0.5
(F)	Liquid paraffin	1	1	1	1	0.1	5	1	1	-
	Cetanol	1	1	1	1	1	1	1	1	1
	POE-reduced lanolin	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
	lipophilic glyceryl monostearate	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
	Propylene glycol	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
	Phenoxyethanol	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
	Purified water	Remaining amount	Remaining amount	Remaining amount	Remaining amount	Remaining amount	Remaining amount	Remaining amount	Remaining amount	Remaining amount
	Total	100	100	100	100	100	100	100	100	100
	Component (B) / Component (A) mass ratio	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
	Component (A) / Component (D) mass ratio	0.2	0.01	0.1	0.1	0.1	0.1	-	0.1	0.1
	Component (A) / Component (D)+(E) mass ratio	0.01	0.005	0.05	0.002	0.009	0.009	0.01	0.1	0.009
	pH of the stock solution of the second agent	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5
Evaluation										
Stability of oxidizing agent (Evaluation 1-4)		4	3	4	4	4	4	4	4	4
Formulation stability (Evaluation 1-5)		3	4	4	4	4	4	3	3	3

[0086]

[Table 3]

The second agent (ingredient name)		Comparative example			
		1	2	3	4
	35 mass % hydrogen peroxide	16.6	16.6	16.6	16.6
(A)	Sodium stannate	-	0.01	0.01	0.01
(B)	Trisodium hydroxyethylenediamine triacetate solution	0.04	-	0.4	0.2
(C)	Phosphoric acid	0.1	0.1	0.55	0.08
(D)	Stearyltrimethylammonium chloride	0.1	0.1	0.1	0.1
(E)	POE(2)Cetyl ether	0.5	0.5	0.5	0.5
	POE(21)Lauryl ether	0.5	0.5	0.5	0.5
(F)	Liquid paraffin	1	1	1	1
	Cetanol	1	1	1	1
	POE-reduced lanolin	0.2	0.2	0.2	0.2
	lipophilic glyceryl monostearate	0.1	0.1	0.1	0.1
	Propylene glycol	0.5	0.5	0.5	0.5
	Phenoxyethanol	0.1	0.1	0.1	0.1
	Purified water	Remaining amount	Remaining amount	Remaining amount	Remaining amount
	Total	100	100	100	100
	Component (B) / Component (A) mass ratio	-	-	40.0	20.0
	Component (A) / Component (D) mass ratio	-	0.1	0.1	0.1
	Component (A) / Component (D)+E mass ratio	-	0.009	0.009	0.009
	pH of the stock solution of the second agent	2.5	2.5	2.5	6
Evaluation					
Stability of oxidizing agent (Evaluation 1-4)		2	2	1	1
Formulation stability (Evaluation 1-5)		5	4	4	4

[0087]

[Table 4]

The first agent (ingredient name)	
Resorcin	0.5
2,4-Dihydroxybenzoic acid	0.33
p-Phenylenediamine	0.4
p-Aminophenol	0.2
Paratolylenediamine	0.2
α -Naphthol	0.2
m-Aminophenol	0.2
5-Amino-o-cresol	0.2
28 mass % ammonia solution	4.0
70 mass % monoethanolamine	10.0
Ammonium bicarbonate	1.5
POE(2)Stearyl ether	0.50
POE(30)Cetyl ether	0.75
POE(2)Cetyl ether	0.75
POE(50)Oleyl ether	0.50
Stearyltrimethylammonium chloride	0.25
Petrolatum	0.5
Lanolin	0.5
Liquid paraffin	0.5
Microcrystalline wax	0.5
Cetyl octanoate	0.5
Stearyl stearate	0.5
Cetanol	3.0
Behenyl alcohol	1.0
Stearyl alcohol	3.0
Ascorbic acid	0.5
Polydimethylmethylenepiperidinium chloride solution (Polydimethyldimethylenepyrrolidinium chloride solution)	0.5
Amodimethicone	0.5
Shear butter	0.1
Jojoba oil	0.1
Olive oil	0.1
Purified water	Appropriate amount
Total	100

As shown in Tables 1 and 2, it was confirmed that the results of each example were more than possible for each evaluation item. As shown in Table 3, in comparative example 1 containing no component (A), it was confirmed that the evaluation of the stability of the oxidizing agent was inferior to each example. In comparative example 2 containing no component (B), it was confirmed that the evaluation of the stability of the oxidizing agent was inferior to each example. In comparative example 3 in which the mass ratio of the content of the component (B) to the content of the component (A) exceeds 35, it was confirmed that the evaluation of the stability of the oxidizing agent was inferior for each example. In comparative example 4 in which the pH of the second agent was 6, it was confirmed that the evaluation of the stability of the oxidizing agent was inferior to each example.

Claims

[Claim 1]

A composition containing an oxidizing agent containing (A) a stannate, (B) an aminocarboxylic acid-based chelating agent and (C) an acid, wherein the mass ratio of the content of the component (B) to the content of the component (A) is 0.01 to 35, and the pH of the composition is 2 to 5.

[Claim 2]

The composition containing the oxidizing agent according to claim 1, wherein further containing (D) a cationic surfactant.

[Claim 3]

The composition containing the oxidizing agent according to claim 1 or 2, wherein further containing (E) a polyoxyethylene alkyl ether type non-ionic surfactant.

[Claim 4]

The composition containing the oxidizing agent according to any one of claims 1 to 3, wherein further containing (F) a hydrocarbon.

[Claim 5]

The composition containing the oxidizing agent according to any one of claims 1 to 4, wherein which is used as a hair dyeing agent or a hair bleaching/destaining agent in admixture with an agent containing an alkaline agent.

[Claim 6]

A method for stabilizing an oxidizing agent, wherein (A) a stannate, (B) an aminocarboxylic acid-based chelating agent and (C) an acid are added in a composition containing an oxidizing agent, wherein a mass ratio of the content of the component (B) to the content of the component (A) is 0.01 to 35, and the pH of the composition is 2 to 5.