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(54) **HAIR CARE PRODUCTS WITH ALKOXYLATED SILICONES AND CATIONIC SILICONES**

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(57) **ABSTRACT**

A foaming hair treatment agent includes alkoxylated silicones and cationic silicones. Together with the production of a fine-pore, creamy, and stable foam, side effects of environmental influences and of oxidative as well as surfactant hair treatments are to be reduced preferably during the oxidative or surfactant hair treatment but also after the oxidative or surfactant hair treatment without impairing the effectiveness of the oxidative or surfactant cosmetics, in particular with respect to color intensity, color fastness, lightening power, or waving effect, and while preventing oil buildup of the keratin fibers and the increased formation of dandruff.

HAIR CARE PRODUCTS WITH ALKOXYLATED SILICONES AND CATIONIC SILICONES

FIELD OF THE INVENTION

[0001] The present invention generally relates to hair treatment agents including alkoxylated silicones and cationic silicones.

BACKGROUND OF THE INVENTION

[0002] In modern hair-care agents, attempts are increasingly being made to apply the product in the form of a foam onto the keratinic fibers. The foam is intended in this context to be creamy with fine pores, and the same time to have a certain volume, and to be sufficiently stable that it is stable during incorporation into the keratinic fibers. These requirements can be met at present only with large quantities of surfactants and/or propellant gases. This type of utilization turns out to be even more difficult when no propellant gas is to be used, but instead the foam is to be generated with the aid of special nozzles in pump dispensers. Only relatively watery, coarse-pored, and low-stability foams are often obtained here—all the more so as the content of care-providing ingredients in the aqueous composition increases.

[0003] Environmental influences and oxidative hair treatments often result in degraded combability properties of the dry and the wet hair. In addition, the shine and moisture balance are disadvantageously influenced by the fact that the external structure of the keratinic fibers has been attacked. A further consequence of repeated treatments of keratinic fibers using surfactant agents and/or oxidizing agents is considerable grease re-absorption by the keratinic fibers, as well as a strong tendency toward increased formation of scalp dandruff.

[0004] It is therefore desirable to prevent the aforementioned disadvantages of the existing art. In addition to generation of a creamy, stable foam with fine pores, the side-effects of environmental influences and of oxidative as well as surfactant-based hair treatments are to be decreased, preferably already during the oxidative or surfactant-based hair treatment but also after the oxidative or surfactant-based hair treatment, without degrading the efficiency of the oxidative or surfactant-based cosmetic, in particular in terms of color intensity, color fastness, lightening performance, or waving effect, and preventing grease re-absorption by the keratinic fibers and increased formation of scalp dandruff.

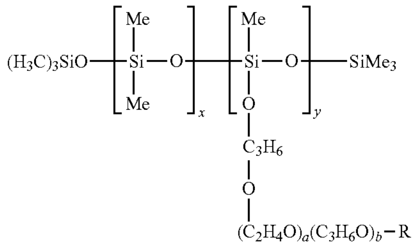
[0005] In addition, the oxidative treatment of keratin-including fibers, in particular human hair, is also to be combined in one step, in the form of a two-in-one product, with the application of an effective protection from environmental influences, for example UV protection.

[0006] Furthermore, other desirable features and characteristics of the present invention will become apparent from the subsequent detailed description of the invention and the appended claims, taken in conjunction with the accompanying drawings and this background of the invention.

BRIEF SUMMARY OF THE INVENTION

[0007] A hair treatment agent including in a suitable cosmetic carrier, based in each case on the total composition of the agent, a) at least one alkoxylated silicone in a total quantity from 0.01 to 10.0 wt %, selected from at least one of the general formulas (Si-6) or (Si-7)

(Si-6)



$$(H_3C)_3SiO-\left[\begin{array}{c}Me\\|\\Si\\|\\Me\end{array}-O\right]_x-\left[\begin{array}{c}Me\\|\\Si\\|\\O\\|\\C_3H_6\\|\\O\\|\\(C_2H_4O)_a(C_3H_6O)_b-R\end{array}-O\right]_y-SiMe_3$$

(Si-7)

$$R'-Si-\left[[OSi(CH_3)_2]_x-(OC_2H_4)_a-(OC_3H_6)_b-OR''\right]_3$$

in which the residue R denotes a hydrogen atom, an alkyl group having 1 to 30 carbon atoms, an alkoxy group having 1 to 12 carbon atoms, or a hydroxyl group, the residues R' and R" signify alkyl groups having 1 to 30 carbon atoms, x denotes an integer from 1 to 100, preferably from 20 to 30, y denotes an integer from 1 to 20, preferably from 2 to 10, and a and b denote integers from 0 to 50, preferably from 10 to 30; and b) at least one cationic aminosilicone having at least three terminal aminofunctional groups, in a total quantity from 0.01 to 5.0 wt %.

DETAILED DESCRIPTION OF THE INVENTION

[0008] The following detailed description of the invention is merely exemplary in nature and is not intended to limit the invention or the application and uses of the invention. Furthermore, there is no intention to be bound by any theory presented in the preceding background of the invention or the following detailed description of the invention.

[0009] It has now been found, surprisingly, that the object is achieved to an outstanding degree by a hair treatment agent that includes an active-agent complex including as essential ingredients at least one alkoxylated silicone and at least one cationic silicone having at least three terminal aminofunctional groups.

[0010] "Hair treatment agents" for purposes of the present invention are, for example, hair shampoos, hair conditioners, conditioning shampoos, hair rinses, hair therapies, hair packs, hair tonics, hair coloring shampoos, or combinations thereof. Compositions that condition the hair, such as hair rinses, hair therapies, hair packs, hair oils and lotions, both as leave-on products, i.e. products that remain on the hair until it is next washed, and as rinse-off products, i.e. products to be rinsed off again a few seconds to a few hours after application, are to understood in particular as being among the hair treatment agents according to the present invention.

[0011] "Combability" is understood according to the present invention as both the combability of the wet fibers and the combability of the dry fibers.

[0012] "Softness" is defined as the tactility of an assemblage of fibers, in which context one skilled in the art sensorially feels and evaluates the "fullness" and "suppleness" parameters of the assemblage.

[0013] "Shapability" is understood as the ability to impart a change in shape to an assemblage of previously treated keratin-including fibers, in particular human hairs. The term "stylability" is also used in hair cosmetics.

[0014] "Restructuring" is to be understood for purposes of the invention as a reduction in the damage to keratinic fibers resulting from a wide variety of influences. Restoration of natural strength plays an essential role here, for example. Restructured fibers are notable for improved shine, improved softness, and easier combability. In addition, they exhibit improved strength and elasticity. Successful restructuring can moreover be demonstrated physically as an increase in melting point as compared with the damaged fiber. The higher the melting point of the hair, the stronger the structure of the fiber.

[0015] "Washing fastness" is to be understood for purposes of the invention as maintenance of the original coloring, in terms of shade and/or intensity, when the keratinic fiber is exposed to the repeated influence of aqueous agents, in particular surfactant-including agents such as shampoos.

[0016] These hair treatment agents according to the present invention yield a voluminous, creamy, stable foam with fine pores, which yields stable foams in particular even in non-aerosols such as pump dispenser systems. In addition, hair treatment agents including this active-agent complex result in an improvement in avivage, an improvement in shine, an improvement in moisture budget, and in protection from oxidative damage and a prevention of grease re-absorption by the keratinic fibers, and in an increase in the washing fastness of colored keratinic fibers, in particular human hair, and in a delay in the formation of dandruff.

[0017] The compositions according to the present invention including the active-agent complex according to the present invention are furthermore notable for an appreciably improved condition of the keratinic fibers in terms of the moisture budget of the keratinic fibers. The active-agent complex according to the present invention furthermore results in appreciable protection of the keratinic fibers from heat effects, for example when blow-drying keratinic fibers. Protection of the surface of keratinic fibers from heat effects is very important especially when straightening irons or hair dryers are used. Lastly, it has been found, surprisingly, that the compositions according to the present invention result in appreciably delayed re-soiling of the keratinic fibers.

[0018] In order to assess the foam qualities, the composition according to the present invention is completely foamed up; and in order to determine stability, the time required for the foam to begin to transition back into an entirely aqueous composition is measured.

[0019] At the same time, the volume of the compositions is measured in the context of foaming. The greater this volume, the better the composition is in terms of volume.

[0020] Immediately after foaming, the creaminess of the foam is assessed sensorially by trained persons. The pore size is also assessed and measured both subjectively and objectively.

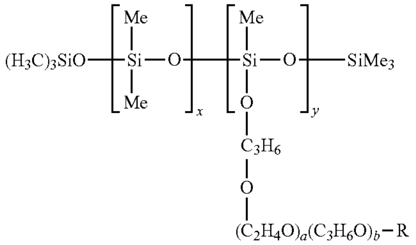
[0021] An "aqueous" cosmetic composition includes at least 50 wt % water.

[0022] "Aqueous alcoholic" cosmetic carriers are to be understood for purposes of the present invention as aqueous solutions including 3 to 70 wt % of a C_1 to C_6 alcohol, in particular methanol, ethanol, or propanol, isopropanol, butanol, isobutanol, tert-butanol, n-pentanol, isopentanols, n-hexanol, isohexanols, glycol, glycerol, 1,2-pentanediol, 1,5-pentanediol, 1,2-hexanediol, or 1,6-hexanediol. The agents according to the present invention can additionally include further organic solvents, for example methoxybutanol, benzyl alcohol, ethyl diglycol, or 1,2-propylene glycol. All water-soluble organic solvents are preferred in this context. Water is particularly preferred.

[0023] A first subject of the present invention is therefore a hair treatment agent including in a suitable cosmetic carrier, based in each case on the total composition of the agent,

[0024] a) at least one alkoxylated silicone in a total quantity from 0.01 to 10.0 wt %, selected from at least one of the general formulas (Si-6) or (Si-7)

(Si-6)



$$(H_3C)_3SiO-\left[\underset{Me}{\overset{Me}{Si}}-O\right]_x-\left[\underset{\underset{\underset{\underset{O}{|}}{C_3H_6}}{|}}{\overset{Me}{Si}}-O\right]_y-SiMe_3 \qquad \text{with the side chain } O-C_3H_6-O-(C_2H_4O)_a(C_3H_6O)_b-R$$

(Si-7)

$$R'-Si-\left[[OSi(CH_3)_2]_x-(OC_2H_4)_a-(OC_3H_6)_b-OR''\right]_3$$

[0025] in which the residue R denotes a hydrogen atom, an alkyl group having 1 to 30 carbon atoms, an alkoxy group having 1 to 12 carbon atoms, or a hydroxyl group, the residues R' and R" signify alkyl groups having 1 to 30 carbon atoms, x denotes an integer from 1 to 100, preferably from 20 to 30, y denotes an integer from 1 to 20, preferably from 2 to 10, and a and b denote integers from 0 to 50, preferably from 10 to 30, and

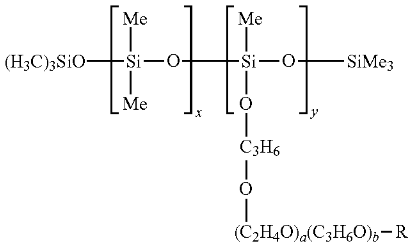
[0026] b) at least one cationic aminosilicone having at least three terminal aminofunctional groups, in a total quantity from 0.01 to 5.0 wt %.

[0027] The use of these combinations results in surprisingly good properties for the treated hair, in particular in improved combability values, improved shine, and improved elasticity, as well as an appreciable increase in the washing resistance of colored hair, and in longer durability simultaneously with better reshaping performance in the context of waving operations such as water waving and permanent waving. In particular, however, a high foam volume with a very creamy foam having fine pores is obtained, which foam is highly stable over the utilization time period.

[0028] Alkoxylated silicones are the first obligatory component of the active-agent combination according to the present invention. Corresponding alkoxylated silicones are selected, for example, from the compounds of formulas (Si-6) and/or (Si-7). Particularly preferred silicone-based water-soluble surfactants are selected from the group of dimethicone copolyols, which are preferably alkoxylated, in particular polyethoxylated and/or polypropoxylated.

[0029] "Dimethicone copolyols" are understood according to the present invention preferably as polyoxyalkylene-modified dimethylpolysiloxanes of the general formulas (Si-6) or (Si-7):

(Si-6)



$$(H_3C)_3SiO-\left[\begin{array}{c}Me\\|\\Si-O\\|\\Me\end{array}\right]_x-\left[\begin{array}{c}Me\\|\\Si-O\\|\\O\\|\\C_3H_6\\|\\O\\|\\(C_2H_4O)_a(C_3H_6O)_b-R\end{array}\right]_y-SiMe_3$$

(Si-7)

$$R'-Si-\left[[OSi(CH_3)_2]_x-(OC_2H_4)_a-(OC_3H_6)_b-OR''\right]_3$$

in which the residue R denotes a hydrogen atom, an alkyl group having 1 to 30 carbon atoms, an alkoxy group having 1 to 12 carbon atoms, or a hydroxyl group, the residues R' and R" signify alkyl groups having 1 to 30 carbon atoms, x denotes an integer from 1 to 100, preferably from 20 to 30, y denotes an integer from 1 to 20, preferably from 2 to 10, and a and b denote integers from 0 to 50, preferably from 10 to 30. The compounds of one of formulas (Si-6) or (Si-7) were previously known by the INCI name Dimethicone Copolyol, having the current INCI names PEG-x Dimethicone (where x=2 to 20, preferably 3 to 17, particularly preferably 5 to 15) and/or PEG/PPG a/b Dimethicone (where a and b are mutually independent and a denotes numbers from 2 to 30, preferably 3 to 30, and particularly preferably 5 to 20, in particular 7 to 18, and b denotes numbers from 0 to 30, preferably 0 to 20, and particularly preferably from 0 to 15 and in particular from 0 to 12).

[0030] Particularly preferred dimethicone copolyols for purposes of the invention are, for example, the products marketed commercially under the trade name SILWET (Union Carbide Corporation) and DOW CORNING. Dimethicone copolyols particularly preferred according to the present invention are Dow Corning 190 and Dow Corning 193 (PEG-12 Dimethicone).

[0031] Dimethicone copolyols are included in the compositions according to the present invention in quantities from 0.01 to 10 wt %, preferably 0.01 to 8 wt %, particularly preferably 0.1 to 7.5 wt %, and in particular 0.1 to 5 wt % dimethicone copolyol, based on the total composition.

[0032] The second obligatory component of the active-agent complex is a cationic aminosilicone. Cationic aminosilicones having at least three terminal aminofunctional groups have only recently been offered commercially. These cationic silicone polymers are notable for the fact that they comprise a silicone skeleton as well as optionally a polyether part and furthermore at least one part having an ammonium structure. Examples of preferred cationic silicone polymers for purposes of the present invention are in particular the compounds having the INCI names: Silicone Quaternium-1, Silicone Quaternium-2, Silicone Quaternium-3, Silicone Quaternium-4, Silicone Quaternium-5, Silicone Quaternium-6, Silicone Quaternium-7, Silicone Quaternium-8, Silicone Quaternium-9, Silicone Quaternium-10, Silicone Quaternium-11, Silicone Quaternium-12, Silicone Quaternium-15, Silicone Quaternium-16, Silicone Quaternium-17, Silicone Quaternium-18, Silicone Quaternium-20, Silicone Quaternium-21, Silicone Quaternium-22, as well as Silicone Quaternium-2 Panthenol Succinate and Silicone Quaternium-16/Glycidyl Dimethicone Crosspolymer. Silicone Quaternium-22 is, in particular, most preferred. This raw material is marketed, for example, by the Evonik company under the commercial name Abil® T-Quat 60.

[0033] Cationic aminofunctional silicone polymers are included in the compositions according to the present invention in quantities from 0.01 to 5 wt %, preferably in quantities from 0.05 to 5 wt %, and very particularly preferably in quantities from 0.1 to 5 wt %. The best results of all are obtained in this context with quantities from 0.1 to 2.5 wt %, based in each case on the total composition of the respective agent.

[0034] In order to intensify the effect according to the present invention, the agents according to the present invention preferably additionally include at least one surfactant; nonionic, anionic, cationic, ampholytic surfactants are suitable in principle. According to the present invention the surfactants can already have an emulsifying effect. The group of ampholytic or also amphoteric surfactants comprises zwitterionic surfactants and ampholytes, and is highly preferred according to the present invention.

[0035] In the compositions according to the present invention, these ingredients possibly contribute considerably to stabilizing the viscosity and storage characteristics.

[0036] Particularly suitable zwitterionic surfactants are the so-called betaines, such as the N-alkyl-N,N-dimethylammonium glycinates, for example cocalkyldimethylammonium glycinate, N-acylaminopropyl-N,N-dimethylammonium glycinates, for example cocacylaminopropyldimethylammonium glycinate, and 2-alkyl-3-carboxymethyl-3-hydroxyethylimidazolines, having in each case 8 to 18 carbon atoms in the alkyl or acyl group, as well as cocacylaminoethylhydroxyethylcarboxymethyl glycinate. A preferred zwitterionic surfactant is the fatty acid amide derivative known by the INCI name Cocamidopropyl Betaine.

[0037] "Ampholytic surfactants" (Tampho) are understood as those surface-active compounds which are capable of forming internal salts. Examples of suitable ampholytic surfactants are N-alkyl glycines, N-alkylpropionic acids, N-alkylaminobutyric acids, N-alkyliminodipropionic acids, N-hydroxyethyl-N-alkylamidopropyl glycines, N-alkyl taurines, N-alkyl sarcosines, 2-alkylaminopropionic acids, and alkylaminoacetic acids, having in each case approximately 8 to 24 carbon atoms in the alkyl group. Typical examples of amphoteric or zwitterionic surfactants are alkyl betaines, alkylamidobetaines, aminopropionates, aminoglycinates, imidazolinium betaines, and sulfobetaines.

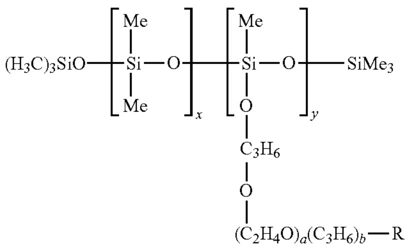
[0038] Particularly preferred ampholytic surfactants are N-cocalkylaminopropionate, cocacylaminoethylaminopropionate, and C_{12} to C_{18} acyl sarcosine. Coco Betaine is a particularly preferred compound.

[0039] These ingredients are used in quantities from 0.01 to 5.0 wt % in terms of the total composition of the agent. Quantities from 0.05 to 5.0 wt % are preferred. Quantities from 0.1 to 5.0 wt % are particularly preferred, and from 0.3 to 3.0 wt % are highly preferred.

[0040] A second subject of the present invention is therefore a hair treatment agent including in a suitable cosmetic carrier, based in each case on the total composition of the agent,

[0041] a) at least one alkoxylated silicone in a total quantity from 0.01 to 10.0 wt %, selected from at least one of the general formulas (Si-6) or (Si-7)

(Si-6)



$$(H_3C)_3SiO-\left[\overset{Me}{\underset{Me}{Si}}-O\right]_x-\left[\overset{Me}{\underset{O-C_3H_6-O-(C_2H_4O)_a(C_3H_6)_b-R}{Si}}-O\right]_y-SiMe_3$$

(Si-7)

$$R'-Si-\left[[OSi(CH_3)_2]_x-(OC_2H_4)_a-(OC_3H_6)_b-OR''\right]_3$$

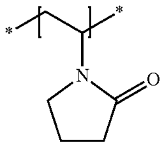
[0042] in which the residue R denotes a hydrogen atom, an alkyl group having 1 to 30 carbon atoms, an alkoxy group having 1 to 12 carbon atoms, or a hydroxyl group, the residues R' and R" signify alkyl groups having 1 to 30 carbon atoms, x denotes an integer from 1 to 100, preferably from 20 to 30, y denotes an integer from 1 to 20, preferably from 2 to 10, and a and b denote integers from 0 to 50, preferably from 10 to 30, and

[0043] b) at least one cationic aminosilicone having at least three terminal aminofunctional groups, in a total quantity from 0.01 to 5.0 wt %, and

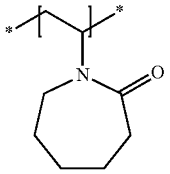
[0044] c) at least one surfactant selected from zwitterionic and/or amphoteric surfactants, in a total quantity from 0.01 to 5.0 wt %.

[0045] As a further highly preferred ingredient, a nonionic polymer is included in the compositions according to the present invention. This polymer is selected from nonionic polymers including at least one structural unit selected from the group of structural units of formulas (M1) to (M3)

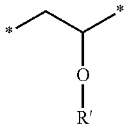
(M1)



(M2)



(M3)



wherein R' denotes a hydrogen atom or a (C_2 to C_{18}) acyl group.

[0046] In the formulas above and all formulas to follow, a chemical bond identified by the symbol * denotes a free valence of the corresponding structural fragment.

[0047] The properties of the composition according to the present invention prove to be particularly advantageous when it is formulated as an aerosol spray, aerosol foam, pump spray, or pump foam. This preferred formulation form will be described in detail later.

[0048] A "nonionic polymer" is understood according to the present invention as a polymer that, in a protic solvent under standard conditions, carries substantially no structural units having cationic or anionic groups that must be compensated for by counter ions to maintain electroneutrality. "Cationic groups" encompass, for example, quaternized ammonium groups and protonated amines. "Anionic groups" encompass, for example, carboxyl groups and sulfonic-acid groups.

[0049] The nonionic polymers as described above are included in the compositions according to the present invention preferably in a quantity from 0.01 to 10.0 wt %, particularly preferably from 0.1 wt % to 10.0 wt %, very particularly preferably from 0.1 wt % to 5.0 wt %, based in each case on the weight of the agent according to the present invention.

[0050] Those nonionic polymers a) having at least one structural element of formula (M3) which carry as R' according to formula (M3) a hydrogen atom, an acetyl group, or a propanoyl group, in particular a hydrogen atom or an acetyl group, are preferably suitable according to the present invention.

[0051] The nonionic polymers according to the present invention are in turn preferably selected from at least one polymer of the group that is constituted from

[0052] homopolymers and nonionic copolymers of N-vinylpyrrolidone,

[0053] polyvinyl alcohol,

[0054] polyvinyl acetate.

[0055] Suitable polyvinylpyrrolidones are, for example, commercial products such as Luviskol® K 90 or Luviskol® K 85 of the BASF SE company.

[0056] Suitable polyvinyl alcohols are marketed, for example, under the commercial designations Elvanol® by Du Pont, or Vinol® 523/540 by the Air Products company.

[0057] Suitable polyvinyl acetate is marketed, for example, as an emulsion under the trade name Vinac® by the Air Products company.

[0058] Compositions that include, as a nonionic polymer, at least one polymer selected from the group that is constituted from

[0059] polyvinylpyrrolidone,

[0060] copolymers of N-vinylpyrrolidone and vinyl esters of carboxylic acids having 2 to 18 carbon atoms, in particular of N-vinylpyrrolidone and vinyl acetate,

are very particularly preferred according to the present invention.

[0061] Those agents which include as a nonionic surfactant, in a cosmetically acceptable carrier,

[0062] polyvinylpyrrolidone,

are furthermore considered very particularly preferred in the context of this embodiment.

[0063] Those agents which include as a nonionic polymer, in a cosmetically acceptable carrier,

[0064] a copolymer that is manufactured from the monomers N-vinylpyrrolidone and vinyl acetate, in particular from no further monomer,

are furthermore considered very particularly preferred in the context of this embodiment.

[0065] It is in turn preferred if the molar ratio of the structural units including the N-vinylpyrrolidone monomer to the structural units of the polymer including the vinyl acetate monomer is in the range from 20 to 80 to 80 to 20, in particular from 30 to 70 to 60 to 40.

[0066] Suitable copolymerizates of vinylpyrrolidone and vinyl acetate are obtainable, for example, from the BASF SE company under the trademarks Luviskol® VA 37, Luviskol® VA 55, Luviskol® VA 64, and Luviskol® VA 73.

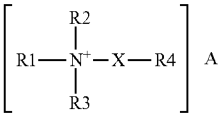
[0067] In addition to the nonionic polymers used, the agents according to the present invention can include at least one further nonionic polymer that is different from the nonionic polymer described previously.

[0068] It is very particularly preferred according to the present invention if the compositions according to the present invention furthermore include at least one quaternary compound. The effectiveness of the agent according to the present invention is thereby further enhanced, and the stability of the composition considerably promoted.

[0069] Cationic compounds are quaternary ammonium compounds. These are, in principle, monomeric cationic or amphoteric ammonium compounds, monomeric amines, aminoamides, polymeric cationic ammonium compounds, and polymeric amphoteric ammonium compounds. From this plurality of possible quaternary ammonium compounds, the following cationic compounds have proven particularly suitable.

[0070] Esterquats in accordance with formula (Tkat1-2) are the first group of particularly preferred cationic compounds.

(Tkat1-2)



$$\left[\, R1 - \overset{R2}{\underset{R3}{N^+}} - X - R4 \,\right] A$$

[0071] Residues R1, R2, and R3 therein are each mutually independent and can be identical or different. Residues R1, R2, and R3 signify:

- **[0072]** a branched or unbranched alkyl residue having 1 to 4 carbon atoms, which can include at least one hydroxyl group, or
- **[0073]** a saturated or unsaturated, branched or unbranched, or cyclic saturated or unsaturated alkyl residue having 6 to 30 carbon atoms, which can include at least one hydroxyl group, or
- **[0074]** an aryl or alkaryl residue, for example phenyl or benzyl,
- **[0075]** the residue (—X—R4), provided that at most two of the residues R1, R2, or R3 can denote this residue.

[0076] The residue —(X—R4) is included at least 1 to 3 times.

[0077] In this, X denotes:

[0078] 1) —(CH2)n-, where n=1 to 20, preferably n=1 to 10, and particularly preferably n=1 to 5, or

[0079] 2) —(CH2-CHR5-O)n-, where n=1 to 200, preferably 1 to 100, particularly preferably 1 to 50, and particularly preferably 1 to 20, where R5 has the meaning of hydrogen, methyl, or ethyl,

[0080] 3) a hydroxyalkyl group having one to four carbon atoms, which can be branched or unbranched and which includes at least one and at most 3 hydroxy groups. Examples of —X— are: CHOH, —$CHCH_2OH$, —CH_2CHOH, —COHCHOH, —CHOHCOH, —$CHCHOHCH_3$, —CH_2COHCH_3, —$CH_2CHOHCH_2$, —$C(CH_2OH)_2$, —$CH_2CHOHCH_2OH$, —CH_2CH_2CHOH, —CH_2COHCH_3, and hydroxybutyl residues, where the bond from —X— to R4 proceeds from the free valence of the relevant carbon atom,

[0081] and R4 denotes:

[0082] 1) R6-O—CO—, in which R6 is a saturated or unsaturated, branched or unbranched, or a cyclic saturated or unsaturated alkyl residue having 6 to 30 carbon atoms, which can include at least one hydroxy group, and which optionally can be further oxyethylated with 1 to 100 ethylene oxide units and/or 1 to 100 propylene oxide units, or

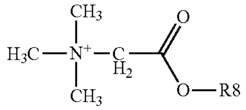
[0083] 2) R7-CO—, in which R7 is a saturated or unsaturated, branched or unbranched, or a cyclic saturated or unsaturated alkyl residue having 6 to 30 carbon atoms, which can include at least one hydroxy group, and which optionally can be further oxyethylated with 1 to 100 ethylene oxide units and/or 1 to 100 propylene oxide units, and

A denotes a physiologically acceptable organic or inorganic anion and is defined at this juncture representatively for all structures including those described hereinafter. The anion of all cationic compounds described is selected from the halide ions fluoride, chloride, bromide, iodide, sulfates of the general formula RSO_3^-, in which R has the meaning of a saturated or unsaturated alkyl residue having 1 to 4 carbon atoms, or anionic residues of organic acids such as maleate, fumarate, oxalate, tartrate, citrate, lactate, or acetate.

[0084] Such products are marketed, for example, under the trademarks Rewoquat®, Stepantex®, Dehyquart®, Armocare®, and Akypoquat®. The products Armocare® VGH-70, Dehyquart® F-75, Dehyquart® C-4046, Dehyquart® L80, Dehyquart® F-30, Dehyquart® AU-35, Rewoquat® WE18, Rewoquat® WE38 DPG, Stepantex® VS 90, and Akypoquat® 131 are examples of these esterquats.

[0085] Further compounds of formula (Tkat1-2) that are particularly preferred according to the present invention conform to formula (Tkat1-2.1), the cationic betaine esters

(Tkat1-2.1)

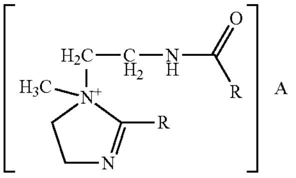


The meaning of R8 corresponds to that of R7.

[0086] The esterquats having the commercial names Armocare® VGH-70, as well as Dehyquart® F-75, Dehyquart® L80, Stepantex® VS 90, and Akypoquat® 131, are particularly preferred.

[0087] Quaternary imidazoline compounds are a further group. Formula (Tkat2) depicted below shows the structure of these compounds:

(Tkat2)



[0088] The residues R denote, mutually independently in each case, a saturated or unsaturated, linear or branched hydrocarbon residue having a chain length from 8 to 30 carbon atoms. The preferred compounds of formula (Tkat2) each include the same hydrocarbon residue for R. The chain length of residues R is preferably 12 to 21 carbon atoms. “A” denotes an anion as described above. Examples that are particularly in accordance with the present invention are obtainable, for example, under the INCI names Quaternium-27, Quaternium-72, Quaternium-83, and Quaternium-91. Quaternium-91 is highly preferred according to the present invention.

[0089] In a particularly preferred embodiment of the invention the agents according to the present invention furthermore include at least one amine and/or cationized amine, in particular an amidoamine and/or a cationized amidoamine, having the following structural formulas:

$$\text{R1-NH—(CH}_2)_n\text{—N}^+\text{R}^2\text{R}^3\text{R}^4\text{A} \qquad \text{(Tkat3)},$$

in which R^1 signifies an acyl or alkyl residue having 6 to 30 carbon atoms which can be branched or unbranched, saturated or unsaturated, and wherein the acyl residue and/or the alkyl residue can include at least one OH group, and

R2, R3, and R4, mutually independently in each case, signify

[0090] 1) hydrogen, or

[0091] 2) an alkyl residue having 1 to 4 carbon atoms, which can be identical or different, saturated or unsaturated, and

[0092] 3) a branched or unbranched hydroxyalkyl group having one to 4 carbon atoms, having at least one and at most three hydroxy groups, for example $—CH_2OH$, $—CH_2CH_2OH$, $—CHOHCHOH$, $—CH_2CHOHCH_3$, $—CH(CH_2OH)_2$, $—COH(CH_2OH)_2$, $—CH_2CHOHCH_2OH$, $—CH_2CH_2CH_2OH$, and hydroxybutyl residues, and

A signifies an anion as described above, and

n signifies an integer between 1 and 10.

[0093] A composition in which the amine and/or the quaternized amine according to the general formulas (Tkat3) is an amidoamine and/or a quaternized amidoamine, in which R1 signifies a branched or unbranched, saturated or unsaturated acyl residue having 6 to 30 carbon atoms, which can include at least one OH group, is preferred. A fatty acid residue made of oils and waxes, in particular natural oils and waxes, is preferred here. Suitable examples thereof are lanolin, beeswax, or candelilla wax.

[0094] Also preferred are those amidoamines and/or quaternized amidoamines in which R2, R3, and/or R4 in formula (Tkat3) signify a residue according to the general formula CH_2CH_2OR5, in which R5 can have the meaning of alkyl residues having 1 to 4 carbon atoms, hydroxyethyl, or hydrogen. The preferred value of n in the general formula (Tkat3) is an integer between 2 and 5.

[0095] The alkylamidoamines both can be present as such, and can be converted by protonation in a correspondingly acidic solution into a quaternary compound in the composition. The cationic alkylamidoamines are preferred according to the present invention.

[0096] Examples of commercial products of this kind according to the present invention are Witcamine® 100, Incromine® BB, Mackin® 401 and other Mackine® grades, Adogen® S18V and, as permanently cationic aminoamines: Rewoquat® RTM 50, Empigen® CSC, Swanol® Lanoquat DES-50, Rewoquat® UTM 50, Schercoquat® BAS, Lexquat® AMG-BEO, or Incroquat® Behenyl HE.

[0097] The cationic surfactants recited above can be used individually or in any desired combinations with one another, quantities between 0.01 and 10 wt %, preferably quantities from 0.01 to 7.5 wt %, and very particularly preferably quantities from 0.1 to 5.0 wt % being included. The best results of all are obtained with quantities from 0.1 to 3.0 wt %, based in each case on the total composition of the respective agent.

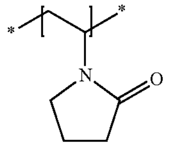
[0098] The cationic and/or amphoteric polymers can be homo- or copolymers or polymers based on natural polymers, the quaternary nitrogen groups being included either in the polymer chain or preferably as a substituent on one or more of the monomers. The ammonium-group-including monomers can be copolymerized with non-cationic monomers. Suitable cationic monomers are unsaturated, radically polymerizable compounds that carry at least one cationic group, in particular ammonium-substituted vinyl monomers such as, for example, trialkylmethacryloxyalkylammonium, trialkylacryloxyalkylammonium, dialkyldiallylammonium, and quaternary vinylammonium monomers having cyclic groups including cationic nitrogens, such as pyridinium, imidazolium, or quaternary pyrrolidones, e.g. alkylvinylimidazolium, alkylvinylpyridinium, or alkyvinylpyrrolidone salts. The alkyl groups of these monomers are preferably lower alkyl groups, for example C1 to C7 alkyl groups, particularly preferably C1 to C3 alkyl groups.

[0099] The ammonium-group-including monomers can be copolymerized with non-cationic monomers. Suitable comonomers are, for example, acrylamide, methacrylamide; alkyl and dialkyl acrylamide, alkyl and dialkyl methacrylamide, alkyl acrylate, alkyl methacrylate, vinylcaprolactone, vinylcaprolactam, vinylpyrrolidone, vinyl esters, e.g. vinyl acetate, vinyl alcohol, propylene glycol, or ethylene glycol, wherein the alkyl groups of these monomers are preferably C1 to C7 alkyl groups, particularly preferably C1 to C3 alkyl groups.

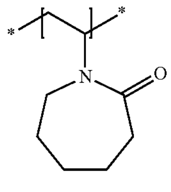
[0100] A highly preferred polymer is obtainable commercially under the name Polyquaternium-74.

[0101] A further preferred cationic polymer comprises at least one structural unit of formula (I), at least one structural unit of formula (II), at least one structural unit of formula (III), and at least one structural unit of formula (IV),

(I)



(II)



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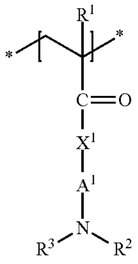
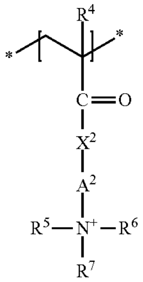
(III)



(IV)



in which

- **[0102]** R^1 and R^4 mutually independently denote a hydrogen atom or a methyl group,
- **[0103]** X^1 and X^2 mutually independently denote an oxygen atom or an NH group,
- **[0104]** A^1 and A^2 mutually independently denote an ethane-1,2-diyl, propane-1,3-diyl, or butane-1,4-diyl group,
- **[0105]** R^2, R^3, R^5, and R^6 mutually independently denote a (C_1 to C_4) alkyl group, R^7 denotes a (C_8 to C_{30}) alkyl group.

[0106] According to the formulas above and all formulas hereinafter, a chemical bond labeled with the symbol * denotes a free valence of the corresponding structural fragment.

[0107] All possible physiologically acceptable anions, for example chloride, bromide, hydrogen sulfate, methyl sulfate, ethyl sulfate, tetrafluoroborate, phosphate, hydrogen phosphate, dihydrogen phosphate or p-toluenesulfonate, triflate, serve to compensate for the positive polymer charge in the agent according to the present invention.

[0108] Examples of (C_1 to C_4) alkyl groups according to the present invention are methyl, ethyl, propyl, isopropyl, butyl, sec-butyl, isobutyl, tert-butyl.

[0109] Examples of (C_8 to C_{30}) alkyl groups according to the present invention are octyl (capryl), decyl (caprinyl), dodecyl (lauryl), tetradecyl (myristyl), hexadecyl (cetyl), octadecyl (stearyl), eicosyl (arachyl), docosyl (behenyl).

[0110] The cationic polymers according to the present invention preferably have a molecular weight from 10,000 g/mol to 50,000,000 g/mol, in particular from 50,000 g/mol to 5,000,000 g/mol, particularly preferably from 75,000 g/mol to 1,000,000 g/mol.

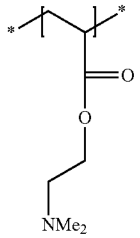
[0111] Agents preferred for purposes of the invention include these above-described cationic polymers in a quantity from 0.1 wt % to 20.0 wt %, particularly preferably from 0.2 wt % to 10.0 wt %, very particularly from 0.5 to 5.0 wt %, based in each case on the weight of the agent.

[0112] The following cationic polymers are employed highly preferably according to the present invention in the agents according to the present invention if the cationic polymers conform, in terms of the aforementioned formulas (I) to (IV), to one or more of the following features:

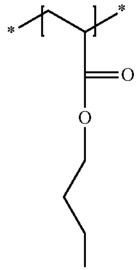
- **[0113]** R^1 and R^4 each signify a methyl group,
- **[0114]** X^1 denotes an NH group,
- **[0115]** X^2 denotes an NH group,
- **[0116]** A^1 and A^2 mutually independently denote ethane-1,2-diyl or propane-1,3-diyl,
- **[0117]** R^2, R^3, R^5, and R^6 mutually independently denote methyl or ethyl (particularly preferably methyl),
- **[0118]** R^7 denotes a (C10 to C24) alkyl group, in particular decyl (caprinyl), dodecyl (lauryl), tetradecyl (myristyl), hexadecyl (cetyl), octadecyl (stearyl), eicosyl (arachyl), or docosyl (behenyl).

[0119] It is preferred according to the present invention to select the structural unit of formula (III) from at least one structural unit of formulas (III-1) to (III-8)

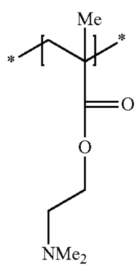
(III-1)



(III-2)



(III-3)



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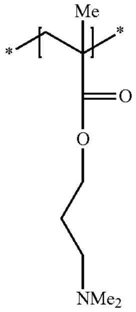
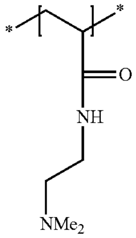
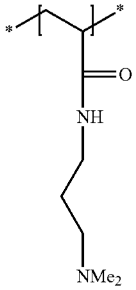
(III-4)



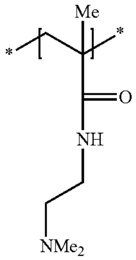
(III-5)



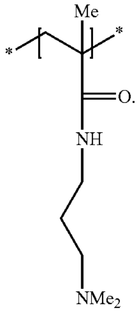
(III-6)



(III-7)



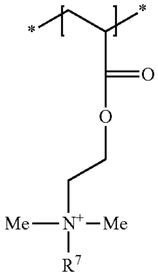
(III-8)



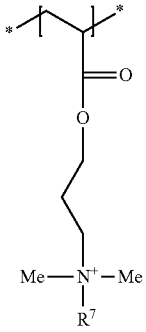
[0120] It moreover proves to be particularly preferred to select as a structural unit of formula (III) the structural unit in accordance with formula (III-7) and/or formula (III-8). The structural unit of formula (III-8) is a very particularly preferred structural unit according to the present invention.

[0121] It has also turned out to be preferred, with regard to achieving the object, if the structural unit of formula (IV) is selected from at least one structural unit of formulas (IV-1) to (IV-8)

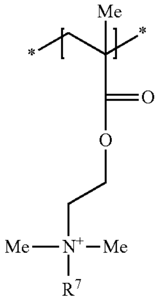
(IV-1)



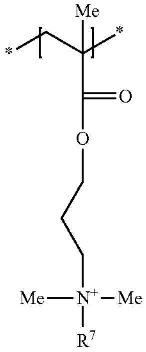
(IV-2)



(IV-3)



(IV-4)



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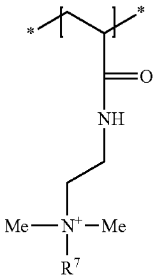
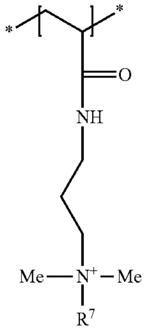
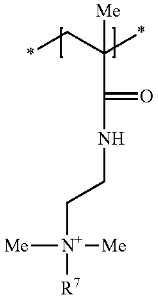
(IV-5)



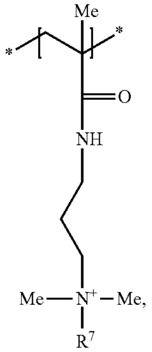
(IV-6)



(IV-7)



(IV-8)

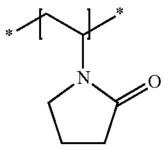


in which R^7 in each case denotes a (C_8 to C_{30}) alkyl group.

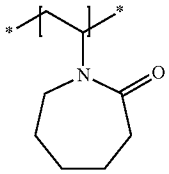
[0122] The structural units of formula (IV-7) and/or of formula (IV-8) are in turn considered a particularly preferred structural unit of formula (IV), R^7 therein denoting in each case octyl (capryl), decyl (caprinyl), dodecyl (lauryl), tetradecyl (myristyl), hexadecyl (cetyl), octadecyl (stearyl), eicosyl (arachyl), or docosyl (behenyl). The structural unit of formula (IV-8) represents according to the present invention a very particularly preferred structural unit of formula (IV).

[0123] A cationic polymer very particularly preferably included in the agent according to the present invention comprises at least one structural unit of formula (I), at least one structural unit of formula (II), at least one structural unit of formula (III-8), and at least one structural unit of formula (IV-8)

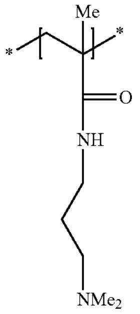
(I)



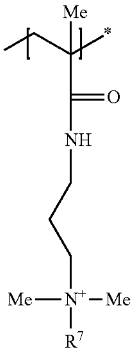
(II)



(III-8)



(IV-8)



in which R^7 denotes octyl (capryl), decyl (caprinyl), dodecyl (lauryl), tetradecyl (myristyl), hexadecyl (cetyl), octadecyl (stearyl), eicosyl (arachyl), or docosyl (behenyl).

[0124] A very particularly preferred cationic polymer according to the present invention is the copolymer of N-vinylpyrrolidone, N-vinylcaprolactam, N-(3-dimethylaminopropyl) methacrylamide, and 3-(methacryloylamino)propyllauryldimethylammonium chloride (INCI name: Polyquaternium-69) that is marketed, for example, by the ISP company under the commercial name Aquastyle® 300 (28 to 32 wt % active substance in ethanol/water mixture, molecular weight 350,000).

[0125] A particularly suitable homopolymer is the poly (methacryloyloxyethyltrimethylammonium) chloride (crosslinked, if desired) having the INCI name Polyquaternium-37. Such products are available commercially, for example, under the designations Rheocare® CTH (Cosmetic Rheologies) and Synthalen® CR (3V Sigma).

[0126] The homopolymer is used preferably in the form of a nonaqueous polymer dispersion. Polymer dispersions of this kind are obtainable commercially under the names Salcare® SC 95 and Salcare® SC 96.

[0127] Suitable cationic polymers that are derived from natural polymers are cationic derivatives of polysaccharides, for example cationic derivatives of cellulose, starch, or guar. Chitosan and chitosan derivatives are also suitable. Cationic polysaccharides have the general formula G-O—B—N+ $R_aR_bR_cA^-$,

G is an anhydroglucose residue, for example starch anhydroglucose or cellulose anhydroglucose;

B is a divalent connecting group, for example alkylene, oxyalkylene, polyoxyalkylene, or hydroxyalkylene;

R_a, R_b and R_e are mutually independently alkyl, aryl, alkylaryl, arylalkyl, alkoxyalkyl, or alkoxyaryl each having up to 18 carbon atoms, the total number of carbon atoms in R_a, R_b, and R_c preferably being a maximum of 20;

A^- is a usual counter anion and is preferably chloride.

[0128] Cationic (i.e. quaternized) celluloses are obtainable on the market with different degrees of substitution, cationic charge densities, nitrogen contents, and molecular weights. For example, Polyquaternium-67 is offered commercially under the names Polymer® SL or Polymer® SK (Amerchol). A further highly preferred cellulose is offered by the Croda company under the commercial name Mirustyle® CP. This is a trimonium and cocodimonium hydroxyethyl cellulose, constituting a derivatized cellulose, having the INCI-name Polyquaternium-72. Polyquaternium-72 can be used both in solid form and already predisssolved in aqueous solution.

[0129] Further cationic celluloses go by the names Polymer JR® 400 (Amerchol, INCI name Polyquaternium-10) and Polymer Quatrisoft® LM-200 (Amerchol, INCI name Polyquaternium-24). Further commercial products are the compounds Celquat® H 100 and Celquat® L 200. Particularly preferred cationic celluloses are Polyquaternium-24, Polyquaternium-67, and Polyquaternium-72.

[0130] Suitable cationic guar derivatives are marketed under the commercial designation Jaguar® and have the INCI name Guar Hydroxypropyltrimonium Chloride. Particularly suitable cationic guar derivatives are additionally available commercially from the Hercules company under the designation N-Hance®. Further cationic guar derivatives are marketed by the Cognis company under the designation Cosmedia®. A preferred cationic guar derivative is the commercial product AquaCat® of the Hercules company. This raw material is a cationic guar derivative that is already predissolved. The cationic guar derivatives are preferred according to the present invention.

[0131] A suitable chitosan is marketed, for example, by the Kyowa Oil & Fat company, Japan, under the trade name Flonac®. A preferred chitosan salt is chitosonium pyrrolidonecarboxylate, which is marketed e.g. under the designation Kytamer® PC by the Amerchol company, USA. Further chitosan derivatives are readily available commercially under the commercial designations Hydagen® CMF, Hydagen® HCMF, and Chitolam® NB/101.

[0132] Further preferred cationic polymers are, for example:

[0133] cationized alkylpolyglycosides,

[0134] cationized honey, for example the commercial product Honeyquat® 50,

[0135] polymeric dimethyldiallylammonium salts and copolymers thereof with esters and amides of acrylic acid and methacrylic acid. The products obtainable commercially under the designations Merquat® 100 (poly (dimethyldiallylammonium) chloride) and Merquat® 550 (dimethyldiallylammonium chloride/acrylamide copolymer) are examples of such cationic polymers, having the INCI name Polyquaternium-7,

[0136] vinylpyrrolidone/vinylimidazolium methochloride copolymers, such as those offered under the designations Luviquat® FC 370, FC 550, and the INCI name Polyquaternium-16, as well as FC 905 and HM 552,

[0137] quaternized vinylpyrrolidone/dimethyl amino ethyl methacrylate, for example vinylpyrrolidone/dimethylaminoethyl methacrylate methosulfate copolymer that is marketed under the commercial names Gafquat® 755 N and Gafquat® 734 by the GAF company, USA, and the INCI name Polyquaternium-11,

[0138] quaternized poly(vinylalcohol),

[0139] and the polymers known by the names Polyquaternium-2, Polyquaternium-17, Polyquaternium-18, and Polyquaternium-27, having quaternary nitrogen atoms in the main polymer chain,

[0140] vinylpyrrolidone/vinylcaprolactam/acrylate terpolymers such as those having acrylic acid esters and acrylic acid amides as a third monomer module, and offered commercially e.g. under the designation Aquaflex® SF 40.

[0141] Particularly preferred amphoteric polymers are copolymers of at least one monomer (Mono1) or (Mono2) with the monomer (Mono3), in particular copolymers of monomers (Mono2) and (Mono3). Amphoteric polymers used very particularly preferably according to the present invention are copolymerizates of diallyldimethylammonium chloride and acrylic acid. These copolymerizates are marketed under the INCI designation Polyquaternium-22, inter alia with the commercial name Merquat® 280 (Nalco).

[0142] Amphoteric polymers based on a comonomer (Mono4) that are used very particularly preferably according to the present invention are terpolymers of diallyldimethylammonium chloride, acrylamide, and acrylic acid. These copolymerizates are marketed under the INCI name Polyquaternium-39, inter alia with the commercial name Merquat® Plus 3330 (Nalco).

[0143] Amphoteric polymers can in general be used according to the present invention both directly and in a salt form that is obtained by neutralizing the polymerizates, for example using an alkali hydroxide.

[0144] The polymers hitherto described represent only some of the polymers usable according to the present invention. To avoid the need to describe all cationic and/or amphoteric polymers suitable according to the present invention, along with their composition, the INCI declarations of the polymers preferred according to the present invention are indicated by way of summary. The polymers preferred according to the present invention bear the INCI names:

Polyquaternium-2, Polyquaternium-4, Polyquaternium-6, Polyquaternium-7, Polyquaternium-10, Polyquaternium-11, Polyquaternium-15, Polyquaternium-16, Polyquaternium-17, Polyquaternium-18, Polyquaternium-22, Polyquaternium-24, Polyquaternium-28, Polyquaternium-32, Polyquaternium-33, Polyquaternium-34, Polyquaternium-35, Polyquaternium-37, Polyquaternium-39, Polyquaternium-41, Polyquaternium-42, Polyquaternium-44, Polyquaternium-47, Polyquaternium-55, Polyquaternium-67, Polyquaternium-68, Polyquaternium-69, Polyquaternium-72, Polyquaternium-74, Polyquaternium-76, Polyquaternium-86, Polyquaternium-89, and Polyquaternium-95, as well as mixtures thereof.

[0145] Particularly preferred cationic polymers bear the INCI names:
Polyquaternium-2, Polyquaternium-4, Polyquaternium-11, Polyquaternium-15, Polyquaternium-16, Polyquaternium-17, Polyquaternium-18, Polyquaternium-28, Polyquaternium-32, Polyquaternium-33, Polyquaternium-34, Polyquaternium-35, Polyquaternium-39, Polyquaternium-41, Polyquaternium-42, Polyquaternium-44, Polyquaternium-47, Polyquaternium-55, Polyquaternium-68, Polyquaternium-69, Polyquaternium-74, Polyquaternium-76, Polyquaternium-86, Polyquaternium-89, and Polyquaternium-95, as well as mixtures thereof.

[0146] The cationic polymers having the names:
Polyquaternium-39, Polyquaternium-44, Polyquaternium-47, Polyquaternium-55, Polyquaternium-68, Polyquaternium-69, Polyquaternium-74, Polyquaternium-76, Polyquaternium-86, Polyquaternium-89, and Polyquaternium-95, as well as mixtures thereof, are highly preferred.

[0147] The cationic polymers recited above can be used individually or in any combinations with one another, quantities between 0.01 and 10 wt %, preferably quantities from 0.01 to 7.5 wt %, and very particularly quantities from 0.1 to 5.0 wt % being included. The best results of all are obtained with quantities from 0.1 to 3.0 wt %, based in each case on the total composition of the respective agent.

[0148] All ingredients usual in cosmetic compositions can furthermore be added to this highly preferred basic framework of ingredients.

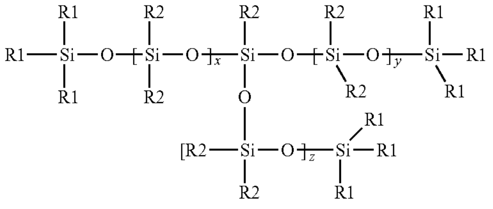
[0149] In addition to the obligatory silicones described above, the compositions according to the present invention can include further silicones. These optional silicones are preferably at least one silicone polymer selected from the group of dimethiconols and/or the group of aminofunctional silicones and/or the group of dimethicones and/or the group of cyclomethicones.

[0150] The dimethicones according to the present invention can be both linear and branched, and also cyclic or cyclic and branched. Linear dimethicones can be represented by the following structural formula (Si1):

$$(SiR^1_3)\text{—}O\text{—}(SiR^2_2\text{—}O\text{—})_x\text{—}(SiR^1_3) \qquad \text{(Si1).}$$

[0151] Branched dimethicones can be represented by the structural formula (Si1.1):

(Si1.1)



[0152] Residues R^1 and R^2 denote, mutually independently in each case, hydrogen, a methyl residue, a C2 to C30 linear, saturated or unsaturated hydrocarbon residue, a phenyl residue, and/or an aryl residue. The numbers x, y, and z are integers and range, mutually independently in each case, from 0 to 50,000. The molecular weights of the dimethicones are between 1000 D and 10,000,000 D. The viscosities are between 100 and 10,000,000 cPs, measured at 25° C. using a glass capillary viscometer in accordance with Dow Corning Corporate Test Method CTM 0004 of Jul. 20, 1970. Preferred viscosities are between 1000 and 5,000,000 cPs; very particularly preferred viscosities are between 10,000 and 3,000,000 cPs. The most preferred range is between 50,000 and 2,000,000 cPs. Viscosities around the range of approximately 60,000 cPs are highly preferred. Reference may be made here, for example, to the product "Dow Corning 200, 60,000 cSt."

[0153] Particularly preferred cosmetic or dermatological preparations according to the present invention are characterized in that they include at least one silicone of formula (Si1.2)

$$(CH_3)_3S[O\text{—}Si(CH_3)_2]_x\text{—}O\text{—}Si(CH_3)_3 \qquad \text{(Si1.2),}$$

in which x denotes a number from 0 to 100, preferably from 0 to 50, more preferably from 0 to 20, and in particular 0 to 10.

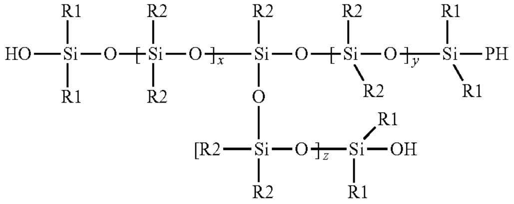
[0154] Dimethicones (Si1) are included in the compositions according to the present invention in quantities from 0.01 to 10 wt %, preferably 0.01 to 8 wt %, particularly preferably 0.1 to 7.5 wt %, and in particular 0.1 to 5 wt %, based on the total composition.

[0155] Lastly, dimethiconols (Si8) are understood as silicone compounds. Dimethiconols according to the present invention can be both linear and branched, and also cyclic or cyclic and branched. Linear dimethiconols can be represented by the following structural formula (Si8-I):

$$(SiOHR^1_2)\text{—}O\text{—}(SiR^2_2\text{—}O\text{—})_x\text{—}(SiOHR^1_2) \qquad \text{(Si8-I).}$$

[0156] Branched dimethiconols can be represented by the structural formula (Si8-II):

(Si8-II)



[0157] Residues R^1 and R^2 denote, mutually independently in each case, hydrogen, a methyl residue, a C2 to C30 linear, saturated or unsaturated hydrocarbon residue, a phenyl residue, and/or an aryl residue. The numbers x, y, and z are integers and range, mutually independently in each case, from 0 to 50,000. The molecular weights of the dimethicones are between 1000 D and 10,000,000 D. The viscosities are between 100 and 10,000,000 cPs, measured at 25° C. using a glass capillary viscometer in accordance with Dow Corning Corporate Test Method CTM 0004 of Jul. 20, 1970. Preferred viscosities are between 1000 and 5,000,000 cPs; very particularly preferred viscosities are between 10,000 and 3,000,000 cPs. The most preferred range is between 50,000 and 2,000,000 cPs.

[0158] The following commercial products are recited as examples of such products: Dow Corning 1-1254 Fluid, Dow Corning 2-9023 Fluid, Dow Corning 2-9026 Fluid, Abil

OSW 5 (Degussa Care Specialties), Dow Corning 1401 Fluid, Dow Corning 1403 Fluid, Dow Corning 1501 Fluid, Dow Corning 1784 HVF Emulsion, Dow Corning 9546 Silicone Elastomer Blend, SM555, SM2725, SM2765, SM2785 (all four aforesaid GE Silicones), Wacker-Belsil CM 1000, Wacker-Belsil CM 3092, Wacker-Belsil CM 5040, Wacker-Belsil DM 3096, Wacker-Belsil DM 3112 VP, Wacker-Belsil DM 8005 VP, Wacker-Belsil DM 60081 VP (all the aforesaid Wacker-Chemie GmbH).

[0159] Dimethiconols (Si8) are in the compositions according to the present invention in quantities from 0.01 to 10 wt %, preferably 0.1 to 8 wt %, particularly preferably 0.1 to 7.5 wt %, and in particular 0.1 to 5 wt % dimethiconol, based on the composition.

[0160] Particularly preferred agents according to the present invention include one or more aminofunctional silicones. Such silicones can be described, for example, by formula (Si-2)

$$M(R_aQ_bSiO_{(4-a-b)/2})_x(R_cSiO_{(4-c)/2})_yM \qquad \text{(Si-2);}$$

in the above formula,

[0161] R is a hydrocarbon or a hydrocarbon residue having 1 to approximately 6 carbon atoms,

[0162] Q is a polar residue of the general formula $—R^1HZ$, in which

[0163] R^1 is a divalent connecting group that is bound to hydrogen and to the Z residue, assembled from carbon and hydrogen atoms, carbon, hydrogen, and oxygen atoms, or carbon, hydrogen, and nitrogen atoms, and

[0164] Z is an organic aminofunctional residue that includes at least one aminofunctional group;

[0165] a assumes values in the range from approximately 0 to approximately 2,

[0166] b assumes values in the range from approximately 1 to approximately 3,

[0167] a+b is less than or equal to 3, and

[0168] c is a number in the range from approximately 1 to approximately 3, and

[0169] x is a number in the range from 1 to approximately 2,000, preferably from approximately 3 to approximately 50, and most preferably from approximately 3 to approximately 25, and

[0170] y is a number in the range from approximately 20 to approximately 10,000, preferably from approximately 125 to approximately 10,000, and most preferably from approximately 150 to approximately 1,000, and

[0171] M is a suitable silicone terminal group as known in the existing art, preferably trimethylsiloxy.

[0172] Z according to formula (Si-2) is an organic aminofunctional residue including at least one functional amino group. One possible formula for the aforesaid Z is $NH(CH_2)_zNH_2$, in which z is an integer greater than or equal to 1. Another possible formula for the aforesaid Z is $—NH(CH_2)_z(CH_2)_{zz}NH$, in which both z and zz mutually independently are an integer greater than or equal to 1, said structure encompassing diamino ring structures such as piperazinyl. The aforesaid Z is most preferably an $—NHCH_2CH_2NH_2$ residue. Another possible formula for the aforesaid Z is $—N(CH_2)_z(CH_2)_{zz}NX_2$ or $—NX_2$, in which each X is selected independently of X_2 from the group consisting of hydrogen and alkyl groups having 1 to 12 carbon atoms, and zz is 0.

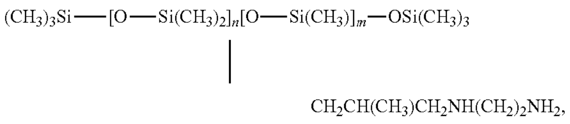
[0173] Q according to formula (Si-2) is most preferably a polar aminofunctional residue of the formula $—CH_2CH_2CH_2NHCH_2CH_2NH_2$.

[0174] In formula (Si-2), a assumes values in the range from 0 to 2, b assumes values in the range from 2 to 3, a+b is less than or equal to 3, and c is a number in the range from 1 to 3.

[0175] Cationic silicone oils, for example the commercially obtainable products Dow Corning (DC) 929 Emulsion, DC2-2078, DC5-7113, SM-2059 (General Electric), and SLM-55067 (Wacker) are suitable according to the present invention.

[0176] Particularly preferred agents according to the present invention are characterized in that they include at least one aminofunctional silicone of formula (Si3-a)

(Si-3a)



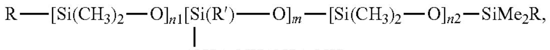
$$(CH_3)_3Si—[O—Si(CH_3)_2]_n[O—\underset{\textstyle CH_2CH(CH_3)CH_2NH(CH_2)_2NH_2,}{Si(CH_3)}]_m—OSi(CH_3)_3$$

in which m and n are numbers whose sum (m+n) is between 1 and 2000, preferably between 50 and 150, wherein n assumes values preferably from 0 to 1999 and in particular from 49 to 149, and m preferably assumes values from 1 to 2000, in particular from 1 to 10.

[0177] These silicones are referred to according to the INCI declaration as Trimethylsilylamodimethicones and are obtainable, for example, under the designation Q2-7224 (manufacturer: Dow Corning; a stabilized trimethylsilylamodimethicone).

[0178] Also particularly preferred are agents according to the present invention that include at least one aminofunctional silicone of formula (Si-3b)

(Si-3b)



$$R—[Si(CH_3)_2—O]_{n1}[\underset{\textstyle (CH_2)_3NH(CH_2)_2NH_2}{Si(R')}—O]_m—[Si(CH_3)_2—O]_{n2}—SiMe_2R,$$

in which

[0179] R denotes —OH, an (optionally ethoxylated and/or propoxylated) (C_1 to C_{20}) alkoxy group, or a $—CH_3$ group,

[0180] R' denotes —OH, a (C_1 to C_{20}) alkoxy group, or a $—CH_3$ group, and

[0181] m, n1, and n2 are numbers whose sum (m+n1+n2) is between 1 and 2000, preferably between 50 and 150, wherein the sum (n1+n2) assumes values preferably from 0 to 1999 and in particular from 49 to 149, and m preferably assumes values from 1 to 2000, in particular from 1 to 10.

[0182] These silicones are referred to according to the INCI declaration as Amodimethicones or as functionalized Amodimethicones, for example Bis(C13-15 Alkoxy) PG Amodimethicone (obtainable e.g. as a commercial product: DC 8500 of the Dow Corning company), Trideceth-9 PG-Amodimethicone (obtainable e.g. as a commercial product: Silcare Silicone SEA of the Clariant company).

[0183] Suitable diquaternary silicones are selected from compounds of the general formula (Si3c)

$$[R^1R^2R^3N^+\text{-}A\text{-}SiR^7R^8—(O—SiR^9R^{10})_n—O—SiR^{11}R^{12}\text{-}A\text{-}N^+R^4R^5R^6]2X^- \qquad \text{(Si3c),}$$

wherein the residues R1 to R6 mutually independently signify C1 to C22 alkyl residues that can include hydroxy groups, and wherein preferably at least one of the residues comprises at least 8 carbon atoms and the remaining residues comprise 1 to 4 carbon atoms, the residues R7 to R12 mutually independently are identical or different and signify C1 to C10 alkyl or phenyl, A signifies a divalent organic connecting group,

n is a number from 0 to 200, preferably from 10 to 120, particularly preferably from 10 to 40,

and X^- is an anion.

[0184] The divalent connecting group is preferably a C1 to C12 alkylene or alkoxyalkylene group that can be substituted with one or more hydroxyl groups.

[0185] Particularly preferably, the group is $—(CH_2)_3—O—CH_2—CH(OH)—CH_2—$.

[0186] The anion X^- can be a halide ion, an acetate, an organic carboxylate, or a compound of the general formula RSO_3^-, in which R has the meaning of C1 to C4 alkyl residues.

[0187] A preferred diquaternary silicone has the general formula (Si3d)

$$[RN^+Me_2\text{-}A\text{-}(SiMe_2O)_n—SiMe_2\text{-}A\text{-}N^+Me_2R]\ 2CH_3COO^- \quad \text{(Si3d)},$$

wherein A is the group $—(CH_2)_3—O—CH_2—CH(OH)—CH_2—$,

R is an alkyl residue having at least 8 carbon atoms, and n is a number from 10 to 120.

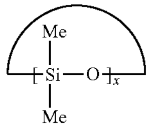
[0188] Suitable silicone polymers having two terminal quaternary ammonium groups are known by the INCI name Quaternium-80. These are dimethylsiloxanes having two terminal trialkylammonium groups. Diquaternary polydimethylsiloxanes of this kind are marketed by the Evonik company under the commercial names Abil® Quat 3270, 3272, and 3474.

[0189] Hair treatment agents preferred according to the present invention are characterized in that they include, based on their weight, 0.01 to 10 wt %, preferably 0.01 to 8 wt %, particularly preferably 0.1 to 7.5 wt %, and in particular 0.2 to 5 wt % aminofunctional silicone(s) and/or diquaternary silicone.

[0190] Polyammonium-polysiloxane compounds are a further silicone according to the present invention having amino functions. Polyammonium-polysiloxane compounds can be acquired, for example, from GE Bayer Silicones under the commercial name Baysilone®. The products having the designations Baysilone TP 3911, SME 253, and SFE 839 are preferred in this context. It is very particularly preferred to use Baysilone TP 3911 as an active component of the compositions according to the present invention. Polyammonium-polysiloxane compounds are used in the compositions according to the present invention in a quantity from 0.01 to 10 wt %, preferably 0.01 to 7.5, particularly preferably 0.01 to 5.0 wt %, very particularly preferably from 0.05 to 2.5 wt %, referring in each case to the total composition.

[0191] The cyclic dimethicones referred to according to INCI as Cyclomethicones are also usable with preference according to the present invention. Cosmetic or dermatological preparations according to the present invention that include at least one silicone of formula (Si-4)

(Si-4)



in which x denotes a number from 3 to 200, preferably from 3 to 10, more preferably from 3 to 7, and in particular 3, 4, 5, or 6, are preferred here.

[0192] Agents likewise preferred according to the present invention are characterized in that they include at least one silicone of formula (Si-5)

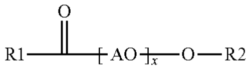
$$R_3Si\text{-}[O—SiR_2]_x—(CH_2)_n—[O—SiR_2]_y—O—SiR_3 \quad \text{(Si-5)},$$

in which R denotes identical or different residues from the group —H, phenyl, benzyl, $—CH_2—CH(CH_3)Ph$, C_{1-20} alkyl residues, preferably $—CH_3$, $—CH_2CH_3$, $—CH_2CH_2CH_3$, $—CH(CH_3)_2$, $—CH_2CH_2CH_2H_3$, $—CH_2CH(CH_3)_2$, $—CH(CH_3)CH_2CH_3$, $—C(CH_3)_3$, x and y respectively denote a number from 0 to 200, preferably from 0 to 10, more preferably from 0 to 7, and in particular 0, 1, 2, 3, 4, 5, or 6, and n denotes a number from 0 to 10, preferably from 1 to 8, and in particular 2, 3, 4, 5, 6.

[0193] Ester oils can be included with particular preference as oily substances in the active-agent combination according to the present invention. Ester oils are defined as follows:

[0194] "Ester oils" are to be understood as esters of C_6 to C_{30} fatty acids with C_2 to C_{30} fatty alcohols. The monoesters of fatty acids with alcohols having 2 to 24 carbon atoms are preferred. Examples of fatty-acid components used in the esters are hexanoic acid, octanoic acid, 2-ethylhexanoic acid, decanoic acid, lauric acid, isotridecanoic acid, myristic acid, palmitic acid, palmitoleic acid, stearic acid, isostearic acid, oleic acid, elaidic acid, petroselinic acid, linoleic acid, linolenic acid, eleostearic acid, arachidic acid, gadoleic acid, behenic acid, and erucic acid, as well as industrial mixtures thereof. Examples of the fatty-alcohol components in the ester oils are isopropyl alcohol, capronyl alcohol, capryl alcohol, 2-ethylhexyl alcohol, caprinyl alcohol, lauryl alcohol, isotridecyl alcohol, myristyl alcohol, cetyl alcohol, palmoleyl alcohol, stearyl alcohol, isostearyl alcohol, oleyl alcohol, elaidyl alcohol, petroselinyl alcohol, linolyl alcohol, linolenyl alcohol, eleostearyl alcohol, arachyl alcohol, gadoleyl alcohol, behenyl alcohol, erucyl alcohol, and brassidyl alcohol, as well as industrial mixtures thereof. Isopropyl myristate (Rilanit® IPM), isononanoic acid C16-18 alkyl ester (Cetiol® SN), 2-ethylhexyl palmitate (Cegesoft® 24), stearic acid 2-ethylhexyl ester (Cetiol® 868), cetyl oleate, glycerol tricaprylate, coconut fatty alcohol caprinate/caprylate (Cetiol® LC), n-butyl stearate, oleyl erucate (Cetiol® J 600), isopropyl palmitate (Rilanit® IPP), oleyl oleate (Cetiol®), lauric acid hexyl ester (Cetiol® A), di-n-butyl adipate (Cetiol® B), myristyl myristate (Cetiol® MM), cetearyl isononanoate (Cetiol® SN), oleic acid decyl ester (Cetiol® V) are particularly preferred according to the present invention.

[0195] The ester oils can of course also be alkoxylated with ethylene oxide, propylene oxide, or mixtures of ethylene oxide and propylene oxide. The alkoxylation can be located both on the fatty-alcohol part and on the fatty-acid part, and also on both parts, of the ester oils. It is preferred according to the present invention, however, if the fatty alcohol was first alkoxylated and then was esterified with fatty acid. Formula (D4-II) depicts these compounds in generalized fashion.



(D4-II)

$$R1-C(=O)-[AO]_x-O-R2$$

[0196] R1 here denotes a saturated or unsaturated, branched or unbranched, cyclic saturated or cyclic unsaturated acyl residue having 6 to 30 carbon atoms,

AO denotes ethylene oxide, propylene oxide, or butylene oxide,

X denotes a number between 1 and 200, preferably 1 and 100, particularly preferably between 1 and 50, very particularly preferably between 1 and 20, highly preferably between 1 and 10, and most preferably between 1 and 5,

R2 denotes a saturated or unsaturated, branched or unbranched, cyclic saturated or cyclic unsaturated alkyl, alkenyl, alkinyl, phenyl, or benzyl residue having 6 to 30 carbon atoms. Examples of fatty-acid components used as residue R1 in the esters are hexanoic acid, octanoic acid, 2-ethylhexanoic acid, decanoic acid, lauric acid, isotridecanoic acid, myristic acid, palmitic acid, palmitoleic acid, stearic acid, isostearic acid, oleic acid, elaidic acid, petroselinic acid, linoleic acid, linolenic acid, eleostearic acid, arachidic acid, gadoleic acid, behenic acid, and erucic acid, as well as industrial mixtures thereof. Examples of the fatty-alcohol components as residue R2 in the ester oils are benzyl alcohol, isopropyl alcohol, capronyl alcohol, capryl alcohol, 2-ethylhexyl alcohol, caprinyl alcohol, lauryl alcohol, isotridecyl alcohol, myristyl alcohol, cetyl alcohol, palmoleyl alcohol, stearyl alcohol, isostearyl alcohol, oleyl alcohol, elaidyl alcohol, petroselinyl alcohol, linolyl alcohol, linolenyl alcohol, eleostearyl alcohol, arachyl alcohol, gadoleyl alcohol, behenyl alcohol, erucyl alcohol, and brassidyl alcohol, as well as industrial mixtures thereof. An ester oil that is particularly preferred according to the present invention is obtainable, for example, under the INCI name PPG-3 Benzyl Ether Myristate.

[0197] Also to be understood as ester oils are:

[0198] dicarboxylic acid esters such as di-n-butyl adipate, di-(2-ethylhexyl) adipate, di-(2-ethylhexyl) succinate, and diisotridecyl acelaate, as well as diol esters such as ethylene glycol dioleate, ethylene glycol diisotridecanoate, propylene glycol di-(2-ethylhexanoate), propylene glycol diisostearate, propylene glycol dipelargonate, butanediol diisostearate, neopentyl glycol dicaprylate, as well as

[0199] symmetrical, asymmetrical, or cyclic esters of carbonic acid with fatty alcohols, for example glycerol carbonate or dicaprylyl carbonate (Cetiol® CC),

[0200] fatty acid triesters of saturated and/or unsaturated linear and/or branched fatty acids with glycerol,

[0201] fatty acid partial glycerides, i.e. monoglycerides, diglycerides, and industrial mixtures thereof. Typical examples are mono- and/or diglycerides based on hexanoic acid, octanoic acid, 2-ethylhexanoic acid, decanoic acid, lauric acid, isotridecanoic acid, myristic acid, palmitic acid, palmoleic acid, stearic acid, isostearic acid, oleic acid, elaidic acid, petroselinic acid, linoleic acid, linolenic acid, eleostearic acid, arachidic acid, gadoleic acid, behenic acid and erucic acid, as well as industrial mixtures thereof. Oleic acid monoglycerides are preferably used.

[0202] Ester oils are used in the agents according to the present invention in a quantity from 0.01 to 20 wt %, preferably 0.01 to 10.0 wt %, particularly preferably 0.01 to 7.5 wt %, highly preferably from 0.1 to 5.0 wt %. It is of course also possible according to the present invention to use several ester oils simultaneously.

[0203] Further oily substances according to the present invention are:

[0204] Vegetable oils. Examples of such oils are sunflower oil, olive oil, soy oil, rapeseed oil, almond oil, jojoba oil, orange oil, wheat germ oil, peach-kernel oil, and the liquid components of coconut oil. Also suitable, however, are other triglyceride oils such as the liquid components of beef tallow, as well as synthetic triglyceride oils.

[0205] Liquid paraffin oils, isoparaffin oils, and synthetic hydrocarbons, as well as di-n-alkyl ethers having a total of between 12 and 36 carbon atoms, in particular 12 to 24 carbon atoms, for example di-n-octyl ether, di-n-decyl ether, di-n-nonyl ether, di-n-undecyl ether, di-n-dodecyl ether, n-hexyl-n-octyl ether, n-octyl-n-decyl ether, n-decyl-n-undecyl ether, n-undecyl-n-dodecyl ether, and n-hexyl-n-undecyl ether, as well as di-tert-butyl ether, diisopentyl ether, di-3-ethyldecyl ether, tert-butyl-n-octyl ether, isopentyl-n-octyl ether, and 2-methylpentyl-n-octyl ether. The compounds 1,3-di-(2-ethylhexyl)cyclohexane (Cetiol® S) and di-n-octyl ether (Cetiol® OE), available as commercial products, can be preferred.

[0206] Natural oils used are, for example, amaranth seed oil, apricot kernel oil, argan oil, avocado oil, babassu oil, cottonseed oil, borage seed oil, camelina oil, thistle oil, peanut oil, pomegranate seed oil, grapefruit seed oil, hemp oil, hazelnut oil, elderberry seed oil, blackcurrant seed oil, jojoba oil, cocoa butter, linseed oil, *macadamia* nut oil, corn oil, almond oil, marula oil, evening primrose oil, olive oil, palm oil, rapeseed oil, rice oil, sea buckthorn pulp oil, sea buckthorn seed oil, sesame oil, shea butter, soy oil, sunflower oil, grapeseed oil, walnut oil, or wild rose oil.

[0207] The hair treatment agents according to the present invention of course also include, besides the active-agent combination according to the present invention, further constituents usual in cosmetic compositions. Selection of these constituents is generally based on the intended use of the hair treatment agents. In the case of a shampoo, for example, further surface-active substances will be included. In the case of hair therapies, further cationic compounds and further care-providing substances will be optionally included.

[0208] In many cases the agents include at least one surface-active substance; both anionic as well as zwitterionic, ampholytic, nonionic, and cationic surface-active substances are suitable in principle. Selection of the surface-active substances is based on the nature of the agent.

[0209] All anionic surface-active substances suitable for use on the human body are suitable as anionic surfactants (Tanion) in preparations according to the present invention. Typical examples of anionic surfactants are:

[0210] linear and branched fatty acids having 8 to 30 carbon atoms (soaps),

[0211] ether carboxylic acids of the formula R—O—$(CH_2—CH_2O)_x—CH_2—COOH$, in which R is a linear alkyl group having 8 to 30 carbon atoms and x=0 or is 1 to 16, and salts thereof,

[0212] acyl sarcosides having 8 to 24 carbon atoms in the acyl group,

[0213] acyl taurides having 8 to 24 carbon atoms in the acyl group,

[0214] acyl isethionates having 8 to 24 carbon atoms in the acyl group,

[0215] sulfosuccinic acid mono- and dialkyl esters having 8 to 24 carbon atoms in the alkyl group, and sulfosuccinic acid monoalkylpolyoxyethyl esters having 8 to 24 carbon atoms in the alkyl group and 1 to 6 oxyethyl groups,

[0216] linear alkanesulfonates having 8 to 24 carbon atoms;

[0217] linear alpha-olefinsulfonates having 8 to 24 carbon atoms,

[0218] alpha-sulfo fatty acid methyl esters of fatty acids having 8 to 30 carbon atoms,

[0219] alkyl sulfates and alkyl polyglycol ether sulfates of the formula $R—O(CH_2—CH_2—O)_x—OSO_3H$, in which R is a preferably linear alkyl group having 8 to 30 carbon atoms and x=0 or is 1 to 12,

[0220] hydroxysulfonates substantially corresponding to at least one of the two following formulas, or mixtures thereof, as well as salts thereof:

$$CH_3—(CH_2)_y—CHOH—(CH_2)_p—(CH—SO_3M)\text{-}(CH_2)_z—CH_2—O—(C_nH_{2n}O)_x—H, \text{ and/or}$$

$$CH_3—(CH_2)_y—(CH—SO_3M)\text{-}(CH_2)_p—CHOH—(CH_2)_z—CH_2—O—(C_nH_{2n}O)_x—H,$$

[0221] wherein in both formulas y and z=0 or are integers from 1 to 18, p=0, 1, or 2, and the sum (y+z+p) is a number from 12 to 18, x=0 or is a number from 1 to 30, and n is an integer from 2 to 4, and M=hydrogen or alkali, in particular sodium, potassium, lithium, alkaline earth, in particular magnesium, calcium, zinc, and/or an ammonium ion, which optionally can be substituted, in particular mono-, di-, tri- or tetraammonium ions having C1 to C4 alkyl, alkenyl, or aryl residues,

[0222] sulfated hydroxyalkylpolyethylene glycol ethers and/or hydroxyalkylenepropylene glycol ethers of the formula $R^1—(CHOSO_3M)\text{-}CHR^3—(OCHR^4—CH_2)_n—OR^2$, where R^1 denotes a linear alkyl residue having 1 to 24 carbon atoms, R^2 a linear or branched, saturated alkyl residue having 1 to 24 carbon atoms, R^3 denotes hydrogen or a linear alkyl residue having 1 to 24 carbon atoms, R^4 denotes hydrogen or a methyl residue, and M denotes hydrogen, ammonium, alkylammonium, alkanolammonium, in which the alkyl and alkanol residues each comprise 1 to 4 carbon atoms, or a metal atom selected from lithium, sodium, potassium, calcium, or magnesium, and n denotes a number in the range from 0 to 12, and furthermore the total number of carbon atoms included in R^1 and R^3 is 2 to 44,

[0223] sulfonates of unsaturated fatty acids having 8 to 24 carbon atoms and 1 to 6 double bonds,

[0224] esters of tartaric acid and citric acid with alcohols that represent addition products of approximately 2 to 15 molecules of ethylene oxide and/or propylene oxide with fatty alcohols having 8 to 22 carbon atoms,

[0225] alkyl and/or alkenyl ether phosphates of the formula

$$R^1(OCH_2CH_2)_nO(PO—OX)—OR^2$$

[0226] in which R^1 preferably denotes an aliphatic hydrocarbon residue having 8 to 30 carbon atoms, R^2 denotes hydrogen, a $(CH_2CH_2O)_nR^2$ residue, or X, n denotes numbers from 1 to 10, and X denotes hydrogen, an alkali or alkaline earth metal, or $NR^3N^4N^5N^6$, where R^3 to R^6 mutually independently denote hydrogen or a C_1 to C_4 hydrocarbon residue,

[0227] sulfated fatty acid alkylene glycol esters of the formula

$$RCO(AlkO)_nSO_3M,$$

[0228] in which RCO— denotes a linear or branched, aliphatic, saturated and/or unsaturated acyl residue having 6 to 22 carbon atoms, Alk denotes CH_2CH_2, $CHCH_3CH_2$, and/or CH_2CHCH_3, n denotes numbers from 0.5 to 5, and M denotes a metal, such as an alkali metal, in particular sodium, potassium, lithium, an alkaline earth metal, in particular magnesium, calcium, zinc, or an ammonium ion such as $^+NR^3N^4N^5N^6$, where R^3 to R^6 mutually independently denote hydrogen or a C_1 to C_4 hydrocarbon residue,

[0229] monoglyceride sulfates and monoglyceride ether sulfates of the formula $R^8OC—(OCH_2CH_2)_x—OCH_2\text{-}[CHO(CH_2CH_2O)_yH]\text{-}CH_2O(CH_2CH_2O)_z—SO_3X$, in which R^8CO denotes a linear or branched acyl residue having 6 to 22 carbon atoms, x, y, and z in total denote 0 or numbers from 1 to 30, preferably 2 to 10, and X denotes an alkali or alkaline earth metal. Typical examples of monoglyceride (ether) sulfates suitable for purposes of the invention are the reaction products of lauric acid monoglyceride, coconut fatty acid monoglyceride, palmitic acid monoglyceride, stearic acid monoglyceride, oleic acid monoglyceride, and tallow fatty acid monoglyceride, and ethylene oxide adducts thereof with sulfur trioxide or chlorosulfonic acid in the form of sodium salts thereof. It is preferable to use monoglyceride sulfates in which R^8CO denotes a linear acyl residue having 8 to 18 carbon atoms,

[0230] amide ether carboxylic acids, $R^1—CO—NR^2—CH_2CH_2—O—(CH_2CH_2O)_nCH_2COOM$, where R^1 is a straight-chain or branched alkyl or alkenyl residue having a number of carbon atoms in the chain from 2 to 30, n denotes an integer from 1 to 20, and R^2 denotes hydrogen, a methyl, ethyl, propyl, isopropyl, n-butyl, tert-butyl, or isobutyl residue and M denotes hydrogen or a metal, such as an alkali metal, in particular sodium, potassium, lithium, an alkaline earth metal, in particular magnesium, calcium, zinc, or an ammonium ion, such as $^+NR^3N^4N^5N^6$, where R^3 to R^6 mutually independently denote hydrogen or a C1 to C4 hydrocarbon residue. Products of this kind are obtainable, for example, from the Chem-Y company under the product designation Akypo®.

[0231] Acyl glutamates of the formula $XOOC—CH_2CH_2CH(C(NH)OR)—COOX$, in which RCO denotes a linear or branched acyl residue having 6 to 22 carbon atoms and 0 and/or 1, 2, or 3 double bonds, and X denotes hydrogen, an alkali metal and/or alkaline earth metal, ammonium, alkylammonium, alkanolammonium, or glucammonium,

[0232] condensation products of a water-soluble salt of a water-soluble protein hydrolysate with a C8 to C30 fatty acid. Such products have been commercially obtainable for some time under the trade names Lamepon®, Maypon®, Gluadin®, Hostapon® KCG, or Amisoft®,

[0233] alkyl- and/or alkenyloligoglycoside carboxylates, sulfates, phosphates, and/or isethionates,

[0234] acyl lactylates, and

[0235] hydroxy mixed ether sulfates.

[0236] If the mild anionic surfactants include polyglycol ether chains, it is very particularly preferred that they exhibit a restricted homolog distribution. It is further preferred in the case of mild anionic surfactants having polyglycol ether units that the number of glycol ether groups be equal to 1 to 20, preferably 2 to 15, particularly preferably 2 to 12. Particularly mild anionic surfactants having polyglycol ether groups without a restricted homolog distribution can also be obtained, for example, if on the one hand the number of polyglycol ether groups is equal to 4 to 12, and Zn or Mg ions are selected as a counter ion. One example thereof is the commercial product Texapon® ASV.

[0237] Nonionic surfactants (Tnio) are, for example,

[0238] addition products of 2 to 50 mol ethylene oxide and/or 0 to 5 mol propylene oxide with linear and branched fatty alcohols having 6 to 30 carbon atoms, the fatty alcohol polyglycol ethers or fatty alcohol polypropylene glycol ethers, or mixed fatty alcohol polyethers,

[0239] addition products of 2 to 50 mol ethylene oxide and/or 0 to 5 mol propylene oxide with linear and branched fatty acids having 6 to 30 carbon atoms, the fatty acid polyglycol ethers or fatty acid polypropylene glycol ethers, or mixed fatty acid polyethers,

[0240] addition products of 2 to 50 mol ethylene oxide and/or 0 to 5 mol propylene oxide with linear and branched alkylphenols having 8 to 15 carbon atoms in the alkyl group, the alkylphenol polyglycol ethers or alkylphenol polypropylene glycol ethers, or mixed alkylphenol polyethers,

[0241] addition products, end-capped with a methyl or C_2 to C_6 alkyl residue, of 2 to 50 mol ethylene oxide and/or 0 to 5 mol propylene oxide with linear and branched fatty alcohols having 8 to 30 carbon atoms, with fatty acids having 8 to 30 carbon atoms, and with alkylphenols having 8 to 15 carbon atoms in the alkyl group, for example the grades obtainable under the marketing designations Dehydrol® LS, Dehydrol® LT (Cognis),

[0242] C_{12} to C_{30} fatty acid mono- and diesters of addition products of 1 to 30 mol ethylene oxide with glycerol,

[0243] addition products of 5 to 60 mol ethylene oxide with castor oil and hardened castor oil,

[0244] polyol fatty acid esters, for example the commercial product Hydagen® HSP (Cognis), or Sovermol® grades (Cognis),

[0245] alkoxylated triglycerides,

[0246] alkoxylated fatty acid alkyl esters of formula (Tnio-I)

$$R^1CO—(OCH_2CHR^2)_wOR^3 \qquad \text{(Tnio-I)},$$

[0247] in which R^1CO denotes a linear or branched, saturated and/or unsaturated acyl residue having 6 to 22 carbon atoms, R^2 denotes hydrogen or methyl, R^3 denotes linear or branched alkyl residues having 1 to 4 carbon atoms, and w denotes numbers from 1 to 20,

[0248] amine oxides,

[0249] hydroxy mixed ethers, $R^1O[CH_2CH(CH_3)O]_x(CH_2CHR^2O)_y[CH_2CH(OH)R^3]_z$ where R^1 denotes a linear or branched, saturated or unsaturated alkyl and/or alkenyl residue having 2 to 30 carbon atoms, R^2 denotes hydrogen, a methyl, ethyl, propyl, or isopropyl residue, R^3 denotes a linear or branched alkyl residue having 2 to 30 carbon atoms, x denotes 0 or a number from 1 to 20, Y denotes a number from 1 to 30, and z denotes the number 1, 2, 3, 4 or 5,

[0250] sorbitan fatty acid esters and addition products of ethylene oxide with sorbitan fatty acid esters, for example polysorbates,

[0251] sugar fatty acid esters and addition products of ethylene oxide with sugar fatty acid esters,

[0252] addition products of ethylene oxide with fatty acid alkanolamides and fatty amines,

[0253] sugar surfactants of the alkyl- and alkenyloligoglycoside types,

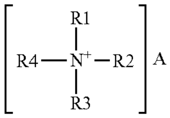
[0254] sugar surfactants of the fatty acid N-alkylpolyhydroxyalkylamide types,

[0255] fatty acid amide polyglycol ethers, fatty amine polygycol ethers,

[0256] mixed ethers or mixed formulas and polysorbates.

[0257] Cationic surfactants of formula (Tkat1) can additionally be used.

(Tkat1)



$$\left[\begin{array}{c} R1 \\ | \\ R4—N^+—R2 \\ | \\ R3 \end{array}\right] A$$

[0258] In formula (Tkat1), R1, R2, R3, and R4, mutually independently in each case, denote hydrogen, a methyl group, a phenyl group, a benzyl group, a saturated, branched or unbranched alkyl residue having a chain length from 8 to 30 carbon atoms, which optionally can be substituted with one or more hydroxy groups. "A" denotes a physiologically acceptable anion, for example halides such as chloride or bromide, as well as methosulfates.

[0259] Examples of compounds of formula (Tkat1) are lauryltrimethylammonium chloride, cetyltrimethylammonium chloride, cetyltrimethylammonium bromide, cetyltrimethylammonium methosulfate, dicetyldimethylammonium chloride, tricetylmethylammonium chloride, stearyltrimethylammonium chloride, distearyldimethylammonium chloride, lauryldimethylbenzylammonium chloride, behenyltrimethylammonium chloride, behenyltrimethylammonium bromide, behenyltrimethylammonium methosulfate.

[0260] Surfactants (T) are used in quantities from 0.05 to 45 wt %, preferably 0.1 to 30 wt %, and very particularly preferably from 0.5 to 25 wt %, based on the total agent used according to the present invention.

[0261] Emulsifier agents usable according to the present invention are, for example:

[0262] addition products of 4 to 30 mol ethylene oxide and/or 0 to 5 mol propylene oxide with linear fatty alcohols having 8 to 22 carbon atoms, with fatty acids having 12 to 22 carbon atoms, and with alkylphenols having 8 to 15 carbon atoms in the alkyl group,

- **[0263]** C_{12} to C_{22} fatty acid mono- and diesters of addition products of 1 to 30 mol ethylene oxide with polyols having 3 to 6 carbon atoms, in particular with glycerol,
- **[0264]** addition products of ethylene oxide and polyglycerol with methylglucoside fatty acid esters, fatty acid alkanolamides, and fatty acid glucamides,
- **[0265]** C_8 to C_{22} alkylmono- and oligoglycosides and ethoxylated analogs thereof, wherein degrees of oligomerization from 1.1 to 5, in particular 1.2 to 2.0, and glucose as a sugar component, are preferred,
- **[0266]** mixtures of alkyl(oligo)glucosides and fatty alcohols, for example the commercially obtainable product Montanov® 68,
- **[0267]** addition products of 5 to 60 mol ethylene oxide with castor oil and hardened castor oil,
- **[0268]** partial esters of polyols having 3 to 6 carbon atoms with saturated fatty acids having 8 to 22 carbon atoms,
- **[0269]** sterols, both from animal tissue (zoosterols, cholesterol, lanosterol) and from vegetable fats (phytosterols, ergosterol, stigmasterol, sitosterol), or from fungi and yeasts (mycosterols),
- **[0270]** phospholipids (lecithins, phosphatidylcholines),
- **[0271]** fatty acid esters of sugars and sugar alcohols, such as sorbitol,
- **[0272]** polyglycerols and polyglycerol derivatives, for example polyglycerol poly-12-hydroxystearate (commercial product Dehymuls® PGPH).

[0273] The agents according to the present invention include emulsifier agents preferably in quantities from 0.1 to 25 wt %, in particular 0.5 to 15 wt %, based on the total agent.

[0274] With particular preference, the compositions according to the present invention include fatty substances (Fat) as a further active agent. “Fatty substances” (Fat) are to be understood as fatty acids, fatty alcohols, natural and synthetic waxes, which can be present both in solid form and in liquid form in aqueous dispersion, and natural and synthetic cosmetic oil components.

[0275] The fatty acids (Fatac) that can be used are linear and/or branched, saturated and/or unsaturated fatty acids having 6 to 30 carbon atoms. Fatty acids having 10 to 22 carbon atoms are preferred. Among those that might be recited are, for example, isostearic acids, such as the commercial products Emersol® 871 and Emersol® 875, and isopalmitic acids such as the commercial product Edenor® IP 95, as well as all other fatty acids marketed under the Edenor® commercial designations (Cognis). Further typical examples of such fatty acids are hexanoic acid, octanoic acid, 2-ethylhexanoic acid, decanoic acid, lauric acid, isotridecanoic acid, myristic acid, palmitic acid, palmitoleic acid, stearic acid, isostearic acid, oleic acid, elaidic acid, petroselinic acid, linoleic acid, linolenic acid, eleostearic acid, arachidic acid, gadoleic acid, behenic acid, and erucic acid, as well as industrial mixtures thereof. The fatty acid cuts that are obtainable from coconut oil or palm oil are usually particularly preferred; the use of stearic acid is, as a rule, particularly preferred.

[0276] The quantity used is 0.1 to 15 wt % based on the total agent. The quantity is preferably 0.5 to 10 wt %, and quantities from 1 to 5 wt % can be very particularly advantageous.

[0277] Fatty alcohols (Fatal) that can be used are saturated, mono- or polyunsaturated, branched or unbranched fatty alcohols having C_6 to C_{30}, preferably C_{10} to C_{22}, and very particularly preferably C_{12} to C_{22} carbon atoms. Usable in the context of the invention are, for example, decanol, octanol, octenol, dodecenol, decenol, octadienol, dodecadienol, decadienol, oleyl alcohol, erucyl alcohol, ricinol alcohol, stearyl alcohol, isostearyl alcohol, cetyl alcohol, lauryl alcohol, myristyl alcohol, arachidyl alcohol, capryl alcohol, caprinyl alcohol, linoleyl alcohol, linolenyl alcohol, and behenyl alcohol, as well as Guerbet alcohols thereof, this listing being intended to be exemplary and not limiting in nature. Fatty alcohols derive, however, from preferably natural fatty acids; it is usually possible to proceed by recovery from esters of the fatty acids by reduction. Also usable according to the present invention are those fatty alcohol cuts which represent a mixture of different fatty alcohols. Such substances are, for example, available for purchase under the designations Stenol®, e.g. Stenol® 1618, or Lanette®, e.g. Lanette® 0, or Lorol®, e.g. Lorol® C8, Lorol® C14, Lorol® C18, Lorol® C8-18, HD-Ocenol®, Crodacol®, e.g. Crodacol® CS, Novol®, Eutanol® G, Guerbitol® 16, Guerbitol® 18, Guerbitol® 20, Isofol® 12, Isofol® 16, Isofol® 24, Isofol® 36, Isocarb® 12, Isocarb® 16, or Isocarb® 24. It is of course also possible according to the present invention to use wool-wax alcohols such as those available for purchase under the designations Corona®, White Swan®, Coronet®, or Fluilan®. The fatty alcohols are used in quantities from 0.1 to 30 wt % based on the total preparation, preferably in quantities from 0.1 to 20 wt %.

[0278] Natural or synthetic waxes (Fatwax) that can be used according to the present invention are solid paraffins or isoparaffins, carnauba waxes, beeswaxes, candelilla waxes, ozocerites, ceresin, spermaceti, sunflower wax, fruit waxes such as, for example, apple wax or citrus wax, microcrystalline waxes made from PE or PP. Such waxes are obtainable, for example, via Kahl & Co., Trittau.

[0279] The quantity used is 0.1 to 50 wt % based on the total agent, preferably 0.1 to 20 wt %, and particularly preferably 0.1 to 15 wt % based on the total agent.

[0280] The total quantity of oil and fat components in the agents according to the present invention is usually 0.5 to 75 wt % based on the total agent. Quantities from 0.5 to 35 wt % are preferred according to the present invention.

[0281] Protein hydrolysates and/or derivatives thereof (P) are a further synergistic active agent according to the present invention in the compositions according to the present invention having the active-agent complex according to the present invention.

[0282] Protein hydrolysates of both vegetable and animal origin, or of marine or synthetic origin, can be used according to the present invention.

[0283] Animal protein hydrolysates are, for example, protein hydrolysates of elastin, collagen, keratin, silk, and milk protein, which can also be present in the form of salts. Such products are marketed, for example, under the trademarks Dehylan® (Cognis), Promois® (Interorgana), Collapuron® (Cognis), Nutrilan® (Cognis), Gelita-Sol® (Deutsche Gelatine Fabriken Stoess & Co), Lexein® (Inolex), and Kerasol® (Croda).

[0284] Also preferred according to the present invention are vegetable protein hydrolysates such as, for example, soy, almond, pea, moringa, potato, and wheat protein hydrolysates. Such products are obtainable, for example, under the trademarks Gluadin® (Cognis), DiaMin® (Diamalt), Lexein® (Inolex), Hydrosoy® (Croda), Hydrolupin® (Croda), Hydrosesame® (Croda), Hydrotritium® (Croda), Crotein® (Croda), and Puricare® LS 9658 of the Laboratoires Sérobiologiques company.

[0285] Further protein hydrolysates preferred according to the present invention are of marine origin. These include, for example, collagen hydrolysates from fish or algae, as well as protein hydrolysates from mussels or pearl hydrolysates. Examples of pearl extracts according to the present invention are the commercial products Pearl Protein Extract BG® or Crodarom® Pearl.

[0286] Cationized protein hydrolysates are further to be included among the protein hydrolysates and derivatives thereof, in which context the underlying protein hydrolysate can derive from animals, for example from collagen, milk, or keratin, from plants, for example from wheat, corn, rice, potatoes, soy, or almonds, from marine life forms, for example from fish collagen or algae, or from biotechnologically obtained protein hydrolysates. Typical examples that may be recited of cationic protein hydrolysates and derivatives according to the present invention are the products listed under the INCI names in the "International Cosmetic Ingredient Dictionary and Handbook" (seventh edition 1997, The Cosmetic, Toiletry, and Fragrance Association, 1101 17th Street, N.W., Suite 300, Washington, D.C. 20036-4702) and available commercially.

[0287] Protein hydrolysates (P) are included in the compositions in concentrations from 0.001 wt % to 20 wt %, preferably from 0.05 wt % to 15 wt %, and very particularly preferably in quantities from 0.05 wt % to 5 wt %.

[0288] A further preferred group of ingredients of the compositions according to the present invention having the active-agent complex according to the present invention is vitamins, provitamins, or vitamin precursors.

[0289] Vitamins, provitamins, and vitamin precursors that are allocated to groups A, B, C, E, F, and H are particularly preferred.

[0290] The group of substances referred to as "vitamin A" includes retinol (vitamin A_1) as well as 3,4-didehydroretinol (vitamin A_2). β-Carotene is the provitamin of retinol. Vitamin A components that are suitable according to the present invention are, for example, vitamin A acid and esters thereof, vitamin A aldehyde, and vitamin A alcohol, as well as esters thereof such as the palmitate and acetate. The agents according to the present invention include the vitamin A component preferably in quantities from 0.05 to 1 wt %, based on the total preparation.

[0291] Members of the vitamin B group or vitamin B complex are, among others:

Vitamin B_1 (thiamine)

Vitamin B_2 (riboflavin)

[0292] Vitamin B_3. The compounds nicotinic acid and nicotinic acid amide (niacinamide) are often listed under this designation. Nicotinic acid amide is preferred according to the present invention; it is included in the agents used according to the present invention preferably in quantities from 0.05 to 1 wt % based on the total agent.

[0293] Vitamin B_5 (pantothenic acid, panthenol, and pantolactone). In the context of this group, panthenol and/or pantolactone are preferably used. Derivatives of panthenol that are usable according to the present invention are, in particular, the esters and ethers of panthenol as well as cationically derivatized panthenols. Individual representatives are, for example, panthenol triacetate, panthenol monoethyl ether and the monoacetate thereof, as well as cationic panthenol derivatives. Pantothenic acid is used in the present invention preferably as a derivative in the form of more-stable calcium salts and sodium salts (calcium pantothenate, sodium pantothenate).

[0294] Vitamin B_6 (pyridoxine as well as pyridoxamine and pyridoxal).

[0295] The aforesaid compounds of the vitamin B type, in particular vitamin B_3, B_5, and B_6, are included in the agents according to the present invention preferably in quantities from 0.05 to 10 wt % based on the total agent. Quantities from 0.1 to 5 wt % are particularly preferred.

[0296] Vitamin C (ascorbic acid). Vitamin C is employed in the agents according to the present invention preferably in quantities from 0.1 to 3 wt % based on the total agent. Utilization in the form of the palmitic acid ester, glucosides, or phosphates can be preferred. Utilization in combination with tocopherols can likewise be preferred.

[0297] Vitamin E (tocopherols, in particular α-tocopherol). Tocopherol and its derivatives, which include in particular esters such as the acetate, nicotinate, phosphate, and succinate, are included in the agents according to the present invention preferably in quantities from 0.05 to 1 wt % based on the total agent.

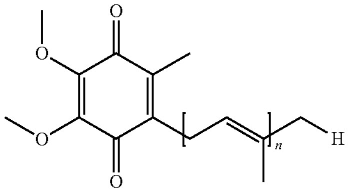
[0298] Vitamin F. The term "vitamin F" is usually understood to mean essential fatty acids, in particular linoleic acid, linolenic acid, and arachidonic acid.

[0299] Vitamin H. "Vitamin H" refers to the compound (3aS,4S,6aR)-2-oxohexahydrothienol[3,4-d]-imidazole-4-valeric acid, for which the trivial name "biotin" has, however, now become established. Biotin is included in the agents according to the present invention preferably in quantities from 0.0001 to 1.0 wt %, in particular in quantities from 0.001 to 0.01 wt %.

[0300] The compositions according to the present invention preferably include vitamins, provitamins, and vitamin precursors from groups A, B, E, and H. Panthenol, pantolactone, pyridoxine and derivatives thereof, as well as nicotinic acid amide and biotin, are particularly preferred.

[0301] A particularly preferred group of ingredients in the cosmetic compositions according to the present invention are the betaines recited as follows: carnitine, carnitine tartrate, carnitine magnesium citrate, acetylcarnitine, betalaines, 1,1-dimethylproline, choline, choline chloride, choline bitartrate, choline dihydrogen citrate, and the compound N,N,N-trimethylglycine referred to in the literature as "betaine."

[0302] In a further embodiment preferred according to the present invention, the compositions according to the present invention include bioquinones. In agents according to the present invention, "suitable bioquinones" are to be understood as one or more ubiquinone(s) and/or plastoquinone(s). The ubiquinones preferred according to the present invention have the following formula:



where n —6,7,8,9, or 10.

[0303] Coenzyme Q-10 is most preferred in this context.

[0304] Preferred compositions according to the present invention include purine and/or purine derivatives within narrower quantitative ranges. Cosmetic agents preferred according to the present invention are characterized here in that they include, based on their weight, 0.001 to 2.5 wt %, preferably 0.0025 to 1 wt %, particularly preferably 0.005 to 0.5 wt %, and in particular 0.01 to 0.1 wt % purine(s) and/or purine derivative(s). Cosmetic agents preferred according to the present invention are characterized in that they include purine, adenine, guanine, uric acid, hypoxanthine, 6-purinethiol, 6-thioguanine, xanthine, caffeine, theobromine, or theophylline. In hair-cosmetic preparations, caffeine is most preferred.

[0305] In a further preferred embodiment of the present invention the cosmetic agent includes ectoin ((S)-2-methyl-1,4,5,6-tetrahydro-4-pyrimidinecarboxylic acid).

[0306] Agents that include, based on their weight, 0.00001 to 10.0 wt %, preferably 0.0001 to 5.0 wt %, and in particular 0.001 to 3 wt % active agents from the group constituted by carnitine, coenzyme Q-10, ectoin, a vitamin of the B series, a purine, and derivatives or physiologically acceptable salts thereof, are particularly preferred according to the present invention.

[0307] A very particularly preferred care-providing additive in the hair treatment agents according to the present invention is taurine. “Taurine” is understood exclusively as 2-aminoethanesulfonic acid, and a “derivative” as the explicitly recited derivatives of taurine. The derivatives of taurine are understood as N-monomethyl taurine, N,N-dimethyl taurine, taurine lysylate, taurine tartrate, taurine omithate, lysyl taurine, and ornithyl taurine.

[0308] Agents according to the present invention that include, based on their weight, 0.0001 to 10.0 wt %, preferably 0.0005 to 5.0 wt %, particularly preferably 0.001 to 2.0 wt %, and in particular 0.001 to 1.0 wt % taurine and/or a derivative of taurine, are particularly preferred.

[0309] The effect of the compositions according to the present invention can be further enhanced by means of a 2-pyrrolidinone-5-carboxylic acid and derivatives thereof (J). The sodium, potassium, calcium, magnesium, or ammonium salts, in which the ammonium ion carries, beside hydrogen, one to three C_1 to C_4 alkyl groups, are preferred. The sodium salt is very particularly preferred. The quantities employed in the agents according to the present invention are 0.05 to 10 wt % based on the total agent, particularly preferably 0.1 to 5, and in particular 0.1 to 3 wt %.

[0310] The use of plant extracts as care-providing substances allows the hair treatment agents according to the present invention to be formulated in particularly near-natural fashion but nevertheless very effectively in terms of their care-providing performance. It can in fact be possible to dispense with preservatives that are otherwise usual. Preferred above all according to the present invention are the extracts from green tea, oak bark, stinging nettle, witch hazel, hops, henna, chamomile, burdock, horsetail, whitethorn, linden blossom, almond, aloe vera, pine, horse chestnut, sandalwood, juniper, coconut, mango, apricot, lemon, wheat, kiwi, melon, orange, grapefruit, sage, rosemary, birch, mallow, valerian, lady’s smock, wild thyme, yarrow, thyme, melissa, restharrow, coltsfoot, hibiscus, meristem, ginseng, coffee, cocoa, moring a, ginger root, and Ayurvedic plant extracts such as, for example, *Aegle marmelos* (bilwa), *Cyperus rotundus* (nagar motha), *Emblica officinalis* (amalki), *Morida citrifolia* (ashyuka), *Tinospora cordifolia* (guduchi), *Santalum album* (chandana), *Crocus sativus* (kumkuma), *Cinnamonum zeylanicum*, and *Nelumbo nucifera* (kamala), sweet grasses such as wheat, barley, rye, oats, spelt, corn, the various types of millet (proso millet, finger millet, foxtail millet as examples), sugar cane, ryegrass, meadow foxtail, false oatgrass, bentgrass, meadow fescue, moor grass, bamboo, cottongrass, pennisetums, Andropogonodeae (Imperata cylindrica, also known as blood grass or cogon grass), buffalo grass, cord grass, dog’s tooth grass, lovegrass, *Cymbopogon* (citronella grass), Oryzeae (rice), Zizania (wild rice), marram grass, blue oatgrass, soft-grasses, quaking grasses, speargrasses, couch grasses and *Echinacea*, in particular *Echinacea purpurea* (L.) Moench, all types of vine, and pericarp of *Litchi chinensis*.

[0311] The plant extracts can be used according to the present invention in both pure and dilute form. If they are used in dilute form, they usually include approx. 2 to 80 wt % active substance and, as a solvent, the extraction agent or extraction agent mixture used to recover them.

[0312] It can occasionally be necessary to use anionic polymers. Examples of anionic monomers from which such polymers can be made are acrylic acid, methacrylic acid, crotonic acid, maleic acid anhydride, and 2-acrylamido-2-methylpropanesulfonic acid. The acid groups in this context can be present entirely or partly as a sodium, potassium, ammonium, mono- or triethanolammonium salt. Preferred monomers are 2-acrylamido-2-methylpropanesulfonic acid and acrylic acid.

[0313] Anionic polymers that include 2-acrylamido-2-methylpropanesulfonic acid as the only monomer or co-monomer have proven to be very particularly effective, wherein the sulfonic acid group can be present entirely or partly as a sodium, potassium, ammonium, mono- or triethanolammonium salt.

[0314] The homopolymer of 2-acrylamido-2-methylpropanesulfonic acid that is obtainable commercially, for example, under the designation Rheothik® 11-80 is particularly preferred.

[0315] Preferred nonionogenic monomers are acrylamide, methacrylamide, acrylic acid esters, methacrylic acid esters, vinylpyrrolidone, vinyl ethers, and vinyl esters.

[0316] Preferred anionic copolymers are acrylic acid/acrylamide copolymers as well as, in particular, polyacrylamide copolymers with sulfonic-acid-group-including monomers. A polymer of this kind is included in the commercial product Sepigel® 305 of the SEPPIC company.

[0317] Anionic homopolymers that are likewise preferred are uncrosslinked and crosslinked polyacrylic acids. Allyl ethers of pentaerythritol, of sucrose, and of propylene can be preferred crosslinking agents. Such compounds are obtainable commercially, for example, under the trademark Carbopol®.

[0318] Copolymers of maleic acid anhydride and methyl vinyl ether, in particular those having crosslinks, are also color-preserving polymers. A maleic acid/methyl vinyl ether copolymer crosslinked with 1,9-decadiene is obtainable commercially under the designation Stabileze® QM.

[0319] Anionic polymers are included in the agents according to the present invention preferably in quantities from 0.05 to 10 wt % based on the total agent. Quantities from 0.1 to 5 wt % are particularly preferred.

[0320] In a further embodiment, the agents according to the present invention can include nonionogenic polymers.

[0321] Suitable nonionogenic polymers are, for example:

[0322] Cellulose ethers such as hydroxypropyl cellulose, hydroxyethyl cellulose, and methylhydroxypropyl cellulose, such as those marketed, for example, under the trademarks Culminal® and Benecel® (AQUALON) and Natrosol® grades (Hercules).

[0323] Starch and derivatives thereof, in particular starch ethers, for example Structure® XL (National Starch), a multifunctional, salt-tolerant starch,

[0324] shellac.

[0325] Nonionic polymers are included in the compositions according to the present invention preferably in quantities from 0.05 to 10 wt % based on the total agent. Quantities from 0.1 to 5 wt % are particularly preferred.

[0326] In a further embodiment, the agents according to the present invention should additionally include at least one UV light protection filter. UVB filters can be oil-soluble or water-soluble.

[0327] The following are to be recited, for example, as oil-soluble substances:

[0328] 3-benzylidene camphor, e.g. 3-(4-methylbenzylidene) camphor,

[0329] 4-aminobenzoic acid derivatives, preferably 4-(dimethylamino)benzoic acid

[0330] 2-ethylhexyl ester, 4-(dimethylamino)benzoic acid octyl ester, and 4-(dimethylamino)benzoic acid amyl ester,

[0331] esters of cinnamic acid, preferably 4-methoxycinnamic acid 2-ethylhexyl ester, 4-methoxycinnamic acid propyl ester, 4-methoxycinnamic acid isoamyl ester, 2-cyano-3-phenylcinnamic acid 2-ethylhexyl ester (octocrylene),

[0332] esters of salicylic acid, preferably salicylic acid 2-ethylhexyl ester, salicylic acid 4-isopropylbenzyl ester, salicylic acid homomethyl ester,

[0333] derivatives of benzophenone, preferably 2-hydroxy-4-methoxybenzophenone, 2-hydroxy-4-methoxy-4'-methylbenzophenone, 2,2'-dihydroxy-4-methoxybenzophenone,

[0334] esters of benzalmalonic acid, preferably 4-methoxybenzalmalonic acid di-2-ethylhexyl ester,

[0335] triazine derivatives, for example 2,4,6-trianilino-(p-carbo-2'-ethyl-1'-hexyloxy)-1,3,5-triazine and octyltriazone,

[0336] propane-1,3-diones, for example 1-(4-tert-butylphenyl)-3-(4'-methoxyphenyl)propane-1,3-dione.

[0337] Suitable water-soluble substances are:

[0338] 2-phenylbenzimidazole-5-sulfonic acid and alkali, alkaline earth, ammonium, alkylammonium, alkanolammonium, and glucammonium salts thereof,

[0339] sulfonic acid derivatives of benzophenones, preferably 2-hydroxy-4-methoxybenzophenone-5-sulfonic acid and salts thereof,

[0340] sulfonic acid derivatives of 3-benzylidene camphor, for example 4-(2-oxo-3-bornylidenemethyl)benzenesulfonic acid and 2-methyl-5-(2-oxo-3-bornylidene)sulfonic acid and salts thereof.

[0341] Typical UV-A filters that are suitable are, in particular, derivatives of benzoylmethane, for example 1-(4'-tert-butylphenyl)-3-(4'-methoxyphenyl)propane-1,3-dione or 1-phenyl-3-(4'-isopropylphenyl)propane-1,3-dione. The UV-A and UV-B filters can of course also be used in mixtures. Besides the soluble substances recited, insoluble pigments are also suitable for this purpose, in particular finely dispersed metal oxides or salts, for example titanium oxide, zinc oxide, iron oxide, aluminum oxide, cerium oxide, zirconium oxide, silicates (talc), barium sulfate, and zinc stearate. The particles should have an average diameter of less than 100 nm, preferably between 5 and 50 nm, and in particular between 15 and 30 nm. They can have a spherical shape, but those particles which possess an ellipsoidal shape or one otherwise deviating from a spherical form can also be used.

[0342] The cosmetic agents can additionally include further active agents, adjuvants, and additives, for example:

[0343] structuring agents such as maleic acid and lactic acid,

[0344] swelling agents such as urea, allantoin, carbonates, or hydantoin,

[0345] dimethylisosorbide and cyclodextrins,

[0346] dyes for coloring the agent,

[0347] anti-dandruff active agents such as piroctone olamine, zinc omadine, and climbazole, complexing agents such as EDTA, NTA, β-alaninediacetic acid, and phosphonic acids,

[0348] opacifiers such as latex, styrene/PVP and styrene/acrylamide copolymers,

[0349] luster agents such as ethylene glycol mono- and distearate as well as PEG-3 distearate,

[0350] pigments,

[0351] stabilizing agents for hydrogen peroxide and other oxidizing agents,

[0352] propellants such as propane/butane mixtures, N_2O, dimethyl ether, CO_2, and air,

[0353] antioxidants

[0354] perfume oils, scents, and fragrances.

[0355] With regard to further optional components as well as the quantities of those components used, reference is made expressly to the relevant manuals known to one skilled in the art.

[0356] A further subject of the invention is therefore a method for hair treatment in which a hair treatment agent according to claim **1** is applied onto the hair and is rinsed off the hair after a contact time.

[0357] The contact time is preferably from a few seconds to 100 minutes, particularly preferably 1 to 50 minutes, and very particularly preferably 1 to 30 minutes.

[0358] Also in accordance with the invention is a method in which a cosmetic agent according to claim **1** is applied onto the hair and remains there. "Remains on the hair" is understood according to the present invention to mean that the agent is not rinsed out of the hair again immediately after it is applied. Instead, in this case the agent remains on the hair for more than 100 minutes, until the hair is next washed.

[0359] Lastly, the use of a composition as described above to reduce and/or delay dandruff on the scalp is in accordance with the invention.

[0360] The agents according to the present invention are configured preferably as a pump spray, aerosol spray, pump foam, or aerosol foam.

[0361] For this, the agents according to the present invention are packaged in a delivery apparatus that is either a pressurized-gas includeer additionally filled with a propellant ("aerosol includeer") or a non-aerosol includeer.

[0362] The pressurized-gas includeers with which a product is distributed through a valve as a result of the internal gas pressure of the includeer are referred to by definition as "aerosol includeers." A "non-aerosol includeer" is defined, conversely to the "aerosol" definition, as a vessel under standard pressure with which a product is distributed by means of mechanical action by way of a pump system.

[0363] The agents according to the present invention are preferably formulated as an aerosol hair foam or aerosol hair spray. The agent according to the present invention therefore preferably additionally includes at least one propellant.

[0364] Propellants suitable according to the present invention are selected, for example, from N_2O, dimethyl ether, CO_2, air, alkanes having 3 to 5 carbon atoms such as propane, n-butane, isobutane, n-pentane, and isopentane, and mixtures thereof. Dimethyl ether, propane, n-butane, isobutane, and mixtures thereof are preferred.

[0365] In accordance with a preferred embodiment, the aforesaid alkanes, mixtures of the aforesaid alkanes, or mixtures of the aforesaid alkanes with dimethyl ether are used as the only propellant. The invention also expressly encompasses, however, the concurrent use of propellants of the fluorochlorocarbon type, but in particular fluorocarbons.

[0366] For a given spray apparatus, the sizes of the aerosol droplets or foam bubbles, and the respective size distribution, can be adjusted by way of the quantitative ratio of propellant to the other constituents of the preparations.

[0367] The quantity of propellant used varies as a function of the specific composition of the agent, the packaging used, and the desired type of product (e.g. hair spray or hair foam). When conventional spray apparatuses are used, aerosol foam products include the propellant preferably in quantities from 1 to 35 wt % based on the total product. Quantities from 2 to 30 wt %, in particular from 3 to 15 wt %, are particularly preferred. Aerosol sprays generally include larger quantities of propellant. In this case the propellant is used preferably in a quantity from 30 to 98 wt % based on the total product. Quantities from 40 to 95 wt %, in particular from 50 to 95 wt %, are particularly preferred.

[0368] The aerosol products can be manufactured in usual fashion. As a rule all the constituents of the respective agent, with the exception of the propellant, are introduced into a suitable pressure-tight includeer. The latter is then sealed with a valve. Lastly, the desired quantity of propellant is introduced using conventional techniques.

[0369] Isopentane is preferably suitable as a propellant for foaming gel-type agents in a two-chamber aerosol includeer, said propellant being incorporated into the agents according to the present invention and being packaged in the first chamber of the two-chamber aerosol includeer. Packaged in the second chamber of the two-chamber aerosol includeer is at least one further propellant, different from isopentane, that builds up in the two-chamber aerosol includeer a higher pressure than the isopentane. The propellants of the second chamber are preferably selected from N_2O, dimethyl ether, CO_2, air, alkanes having 3 or 4 carbon atoms (such as propane, n-butane, isobutane), as well as mixtures thereof.

[0370] A preferred embodiment of the agents according to the present invention is aerosol hair foams or aerosol hair sprays including the agent according to the present invention described previously, and at least one propellant.

[0371] Preferred agents according to the present invention and propellants of the aerosol hair foam or aerosol hair spray, as well as the respective quantities of propellant, correspond to the statements already made above.

[0372] Highly preferred compositions according to the present invention are, however, formulated as non-aerosols. As already discussed, this requires special pumps and delivery systems. The skilled artisan is very familiar with these. Known and outstandingly suitable systems are made available, for example, by Airspray International BV, for example under the Airfoamer product designation.

[0373] For the formulation as a non-aerosol foam in a suitable includeer having a suitable delivery and pumping mechanism, the foam is generally produced by means of a fine-mesh sieve in the pump head with the aid of air simultaneously aspirated by the pump. It is advantageous for this if the total composition according to the present invention has a viscosity from 1 to 35,000, more advantageously from 1 to 10,000, even more preferably from 1 to 5000, and most preferably from 2 to 500 mPas. The viscosity is measured in this context using methods familiar to one skilled in the art.

[0374] The examples that follow are intended to explain the subject matter of the present invention without, however, limiting it.

EXAMPLES

[0375] Unless otherwise indicated, all quantity indications are parts by weight. The following formulas were furnished using known manufacturing methods.

[0376] Care-providing spray, also usable in foam form and/or as a hair therapy:

	K1	K2	K3	K4	K5	K6	K7	K8	K9	K10	K11
Polymer JR 400	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
Armocare VGH 70	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Stearamidopropy 1 Dimethylamine	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
PVP/VA Copolymer 60/40	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Polyquaternium-74	0.5	—	—	—	—	—	—	—	—	—	—
Polyquaternium-69	—	0.5	—	—	—	—	—	—	—	0.5	—
Polyquaternium-39	—	—	0.5	—	—	—	—	—	—	—	—
Polyquaternium-72	—	—	—	0.5	—	—	—	—	—	0.3	0.3
Polyquaternium-16	—	—	—	—	0.5	—	—	—	—	—	—
Polyquaternium-55	—	—	—	—	—	0.5	—	—	—	—	—
Polyquaternium-44	—	—	—	—	—	—	0.5	—	—	—	—
Polyquaternium-68	—	—	—	—	—	—	—	0.5	—	—	—
Polyquaternium-89	—	—	—	—	—	—	—	—	0.5	—	0.3
Panthenol	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
Cetrimonium Chloride	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Ceteareth-25	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
Protein hydrolysate	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
Dow Corning 193	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
Silicone Quaternium-22	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5

-continued

	K1	K2	K3	K4	K5	K6	K7	K8	K9	K10	K11
Coco Betaine	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Water, preservatives, and opt. perfume oils	to 100	to 100	to 100	to 100	to 100	to 100	to 100	to 100	to 100	to 100	to 100

The pH values of all formulas were set to 2 to 6.

[0377] For application as a foam, the relevant formulation is either introduced along with a propellant gas into an aerosol includeer, or discharged as a foam from a pump bottle using a corresponding pump attachment, for example an Airfoamer.

[0378] For application as a hair treatment or cream, a fatty alcohol such as cetyl stearyl alcohol and/or ethylene glycol distearate and/or glycerol monostearate is additionally added, in quantities from 0.2 to 5.0 wt %, to the formulas listed above.

[0379] Shampoo:

	S1	S2	S3	S4	S5	S6	S7	S8	S9	S10	S11
Texapon ® N70	15.0	15.0	15.0	15.0	15.0	15.0	15.0	15.0	15.0	15.0	15.0
Arlypon ® F	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15
Antil ® 141	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15
Disodium Coco-amphodiacetate	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Polyquaternium-74	0.5	—	—	—	—	—	—	—	—	—	—
Polyquaternium-69	—	0.5	—	—	—	—	—	—	—	0.5	—
Polyquaternium-39	—	—	0.5	—	—	—	—	—	—	—	—
Polyquaternium-72	—	—	—	0.5	—	—	—	—	—	0.3	0.3
Polyquaternium-16	—	—	—	—	0.5	—	—	—	—	—	—
Polyquaternium-55	—	—	—	—	—	0.5	—	—	—	—	—
Polyquaternium-44	—	—	—	—	—	—	0.5	—	—	—	—
Polyquaternium-68	—	—	—	—	—	—	—	0.5	—	—	—
Polyquaternium-89	—	—	—	—	—	—	—	—	0.5	—	0.3
Cetiol ® HE	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Panthenol	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
Dow Corning ® 193	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Silicone Quaternium-22	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Protein hydrolysate	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Cremophor ® HRE 60	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Water, preservatives, and opt. perfume oils	to 100	to 100	to 100	to 100	to 100	to 100	to 100	to 100	to 100	to 100	to 100

The pH values of all formulas were set to 4.5 to 5.8.

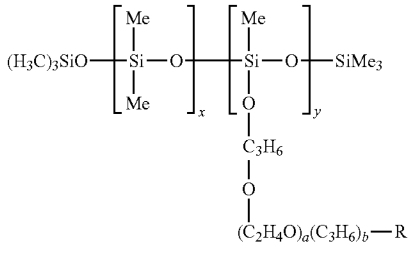
[0380] While at least one exemplary embodiment has been presented in the foregoing detailed description of the invention, it should be appreciated that a vast number of variations exist. It should also be appreciated that the exemplary embodiment or exemplary embodiments are only examples, and are not intended to limit the scope, applicability, or configuration of the invention in any way. Rather, the foregoing detailed description will provide those skilled in the art with a convenient road map for implementing an exemplary embodiment of the invention, it being understood that various changes may be made in the function and arrangement of elements described in an exemplary embodiment without departing from the scope of the invention as set forth in the appended claims and their legal equivalents.

What is claimed is:

1. A hair treatment agent including in a suitable cosmetic carrier, based in each case on the total composition of the agent,

a) at least one alkoxylated silicone in a total quantity from 0.01 to 10.0 wt %, selected from at least one of the general formulas (Si-6) or (Si-7)

(Si-6)



$$(H_3C)_3SiO-\left[\overset{Me}{\underset{Me}{Si}}-O\right]_x-\left[\overset{Me}{\underset{O-C_3H_6-O-(C_2H_4O)_a(C_3H_6)_b-R}{Si}}-O\right]_y-SiMe_3$$

(Si-7)

$$R'-Si-\left[[OSi(CH_3)_2]_x-(OC_2H_4)_a-(OC_3H_6)_b-OR''\right]_3$$

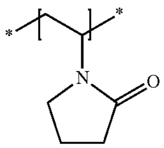
in which the residue R denotes a hydrogen atom, an alkyl group having 1 to 30 carbon atoms, an alkoxy group having 1 to 12 carbon atoms, or a hydroxyl group, the residues R' and R" signify alkyl groups having 1 to 30 carbon atoms, x denotes an integer from 1 to 100, preferably from 20 to 30, y denotes an integer from 1 to 20, preferably from 2 to 10, and a and b denote integers from 0 to 50, preferably from 10 to 30, and

b) at least one cationic aminosilicone having at least three terminal aminofunctional groups, in a total quantity from 0.01 to 5.0 wt %.

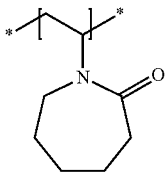
2. The hair treatment agent according to claim **1**, further comprising at least one surfactant selected from zwitterionic and/or amphoteric surfactants in a total quantity from 0.01 to 5.0 wt %.

3. The hair treatment agent according to claim **1**, further including at least one nonionic polymer selected from nonionic polymers including at least one structural unit selected from the group of structural units of formulas (M1) to (M3),

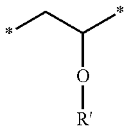
(M1)



(M2)



(M3)

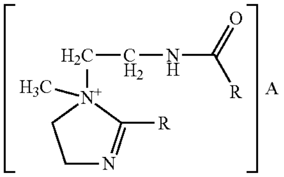


wherein R' denotes a hydrogen atom or a (C_2 to C_{18}) acyl group, in a total quantity from 0.01 to 10.0 wt %.

4. The hair treatment agent according to claim **1**, further comprising at least one quaternary ammonium compound selected from at least one of the groups of

i) esterquats,

ii) quaternary imidazolines of formula (Tkat2),



in which the residues R mutually independently each denote a saturated or unsaturated, linear or branched hydrocarbon residue having a chain length from 8 to 30 carbon atoms, and A denotes a physiologically acceptable anion,

iii) amines and/or cationized amines,

iv) poly(methacryloyloxyethyltrimethylammonium) compounds,

v) quaternized cellulose derivatives, in particular Polyquaternium-10, Polyquaternium-24, Polyquaternium-27, Polyquaternium-67, Polyquaternium-72,

vi) cationic alkylpolyglycosides,

vii) cationized honey,

viii) cationic guar derivatives,

ix) chitosan,

x) polymeric dimethyldiallylammonium salts and copolymers thereof with esters and amides of acrylic acid and methacrylic acid,

xi) copolymers of vinylpyrrolidone with quaternized derivatives of dialkylaminoalkyl acrylate and dialkylaminoalkyl methacrylate,

xii) vinylpyrrolidone/vinylimidazolium methochloride copolymers,

xiii) quaternized polyvinyl alcohol, and

xiv) Polyquaternium-74,

as well as mixtures thereof, is furthermore included, in a total quantity from 0.1 to 10.0 wt % based on the weight of the total composition.

5. The hair treatment agent according to claim **1**, wherein the cationic aminosilicone is selected from the group cconsisting of Silicone Quaternium-1, Silicone Quaternium-2, Silicone Quaternium-3, Silicone Quaternium-4, Silicone Quaternium-5, Silicone Quaternium-6, Silicone Quaternium-7, Silicone Quaternium-8, Silicone Quaternium-9, Silicone Quaternium-10, Silicone Quaternium-11, Silicone Quaternium-12, Silicone Quaternium-15, Silicone Quaternium-16, Silicone Quaternium-17, Silicone Quaternium-18, Silicone Quaternium-20, Silicone Quaternium-21, and Silicone Quaternium-22.

6. The hair treatment agent according to claim **1**, wherein the cationic aminosilicone is Silicone Quaternium-22.

7. The hair treatment agent according to claim **1**, wherein the nonionic polymer is a copolymer of N-vinylpyrrolidone and vinyl esters of carboxylic acids having 2 to 18 carbon atoms.

8. The hair treatment agent according to claim **1**, further including at least one active agent selected from the group consisting of carnitine, taurine, coenzyme Q-10, ectoin, a purine and derivatives thereof, and a vitamin of the B series.

9. The hair treatment agent according to claim **3**, wherein the quaternary ammonium compound is at least one compound selected from the group consisting of Stearamidopropyl Dimethylamine, Distearoylethyl Hydroxyethylmonium Methosulfate, Dicocoyl Hydroxyethylmonium Methosulfate, Dipalmitoylethyl Dimonium Chloride, Quaternium-27, Quaternium-91, and Behenoyl PG-Trimonium Chloride.

10. A method for treating keratinic fibers, comprising:

applying a cosmetic composition in accordance with claim **1** is applied onto the keratinic fibers, and

rinsing the cosmetic composition out again after a contact time from a few seconds to 45 minutes.

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