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(54) Title: FRAGRANCES WITH CYCLOPROPYL STRUCTURE

(57) Abstract: Suggested are cyclopropyl derivative according to formula (I) R^1-R^2 wherein R^1 represents a cyclopropyl or C_1-C^6-alkylcyclopropyl residue; R^2 stands for a -CO-R^3 or –$(CH_2)_n$-R^4 radical; R^3 stands for linear or branched C_1-C_6 alkyl; R^4 stands for -CH_2OH or - CH=O; and n stands for an integer of from 1 to 12. The derivatives are characterized by very intense, but also very different scents, depending on their structure.

Fragrances with cyclopropyl structure

AREA OF INVENTION

[0001] The present invention refers to the area of fragrances and perfumeries and concerns new fragrances with cyclopropyl structure.

BACKGROUND OF THE INVENTION

[0002] On the part of the perfume industry, new fragrance creations are permanently needed. However, the creation of a new fragrance or fragrance compositions involves a number of challenges. For example, it is necessary to select a specific composition of a few fragrances from an almost unlimited number of possible structures known from the prior art, in order to satisfy a specific need of the market and provide a product that matches the specific profile required by the customer. Suitable fragrances show a very beneficial performance, but in combination with other fragrances may develop unpleasant and thus detrimental odor aspects, making it difficult or even impossible to use them for the specific purpose.

[0003] A second important problem concerns the need to provide fragrance compositions that are not only consistent with a particular odor profile, but also possess so-called secondary beneficial properties. Indeed, many fragrance compositions known from the market have significant drawbacks in use, such as poor solubility and stability to storage, but also failures in subjective issues such as richness, charisma, and the like. In addition, many known fragrance compositions require high dosages to achieve the desired odor result. Another requirement for fragrances today is high biodegradability as well as dermatological and toxicological safety. Consequently, there is a particularly high demand for providing fragrances that have a large effect on other fragrances even at small dosages and change rather unpleasant odor impressions into positive ones and/or enhance pleasant odor impressions.

RELEVANT PRIOR ART

[0002] A couple of cyclopropyl derivatives are known as fragrances, for example:

[0003] US 2008103085 AA (GIVAUDAN) refers 5-(2,2-dimethyl-cyclopropyl)-3-methyl-pent-2-enenitrile and its use in fragrance or flavor applications.

[0004] US 20111124924 AA (GIVAUDAN) discloses a method for the preparation of cyclopropyl carbinols by cyclopropanation of unsaturated alcoholates, utilising a reagent system selected from (A) magnesium metal and dibromomethane, and (B) dibromomethane and a tertiary Grignard reagent, the reaction being carried out in the presence of an ether solvent. The products are useful as flavors and fragrances.

[0005] US 6,025,527 B (IFF) relates to trimethyl cyclohexenyl cyclopropyl ketones having the structure: wherein one of the dashed lines is a carbon-carbon double bond and the other of the dashed lines is a carbon-carbon single bond, uses thereof in augmenting, enhancing or imparting aromas in or to perfume compositions, colognes and perfumed articles, and mixtures of same with 3-methyl-1-phenylpentanol-5 and/or butanoyl cyclohexane derivatives and/or acetic or propionic acid esters of o-methylphenyl isopropanol.

[0006] US 5,767,305 A and **US 7,074,967** BA (IFF) disclose cyclopropyl carboxylic acid esters and 3-cyclopropyl-1-propanone compounds as fragrances.

[0007] CN 101503345 A (SHANGHAI INST TECHNOLOGY) discloses 2-(2-ethyl-cyclopropyl) aldehyde and a preparation method

OBJECT OF THE INVENTION

[0008] Thus, the underlying problem of the present invention was to provide a new group of fragrances with the additional ability to enhance positive and beneficial fragrance aspects of other fragrances. In particular, the new fragrance should also be characterized by improving the stability, solubility and overall performance of other fragrances, as well as reducing the required dosage. Furthermore, the new fragrance should be renewable as well as stable. Finally, the fragrance compositions themselves should have excellent biodegradability and be harmless to humans and the environment.

BRIEF DESCRIPTION OF THE INVENTION

[0009] A first object of the present invention refers to cyclopropyl derivatives according to formula (I)

R^1-R^2 (I)

wherein

- R^1 represents a cyclopropyl or C_1-C^6-alkylcyclopropyl residue;
- R^2 stands for a -CO-R^3 or $-(CH_2)_n$-R^4 radical;
- R^3 stands for linear or branched C_1-C_6 alkyl;
- R^4 stands for -CH_2OH or -CH=O; and
- n stands for an integer of from 1 to 12.

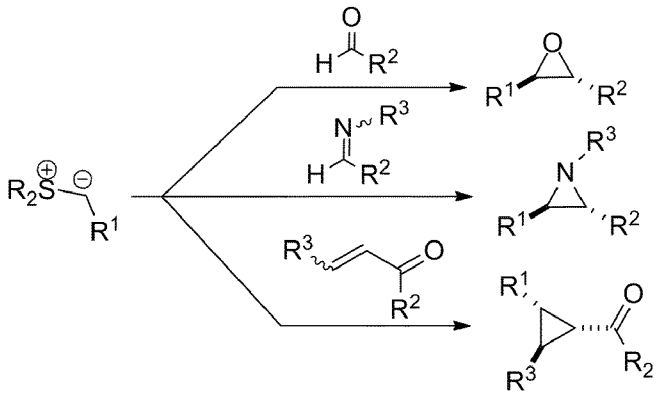
[0013] Surprisingly it was found that cyclopropyl derivatives according to the present invention show very intensive scent notes, such as e.g. minty, fresh, nutty and green which significantly differ by their structure. The derivatives of formula I were found useful for imparting, modifying and/or enhancing a fragrance composition, in particular the positive aspects of a fragrance composition, to make it rounder, more natural, more volume, clearer, fresher,

stronger and/or fruitier. Beyond the primary, namely olfactory, properties, the derivatives of formula I additionally possess positive secondary properties, in particular a high substantivity compared to fragrances with similar olfactory properties, as well as a high stability in certain media and preparations, a high extensibility, and is also biodegradable. Moreover, the new cyclopropyl derivatives are found useful for enhancing the intensity of a fragrance mixture The compounds described herein can therefore be used to impart roundness, naturalness, more volume, clearness, freshness, strength and/or fruitiness to a fragrance composition.

Cyclopropyl derivatives

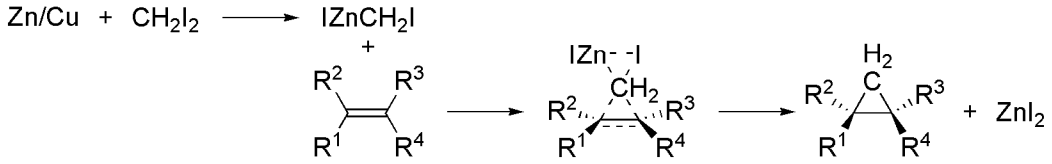
[0010] The preferred derivatives according to the present invention are either cyclopropyl or methyl cyclopropyl derivatives.

[0011] In a first alternative the cyclopropyl derivatives according to the present invention can be obtained by cyclopropanation of the respective olefinic structures known as *Johnson–Corey–Chaykovsky reaction*. The reaction involves addition of a sulfur ylide to a ketone, aldehyde, imine, or enoneto produce the corresponding 3-membered ring. The reaction is diastereoselective favoring *trans* substitution in the product regardless of the initial stereochemistry as shown in the following general scheme:



[0012] The reaction is explained in more detail in a review issued by *Aggarwal et al.* "The complexity of catalysis: origins of enantio- and diastereocontrol in sulfur ylide mediated epoxidation reactions" in **Chemical Communications (21, p2644–2651 (2003) .**

[0013] According to a second alternative the derivatives are also obtainable via *Simmons-Smith reaction* which is an organic cheletropic reaction involving an organozinc carbenoid that reacts with an alkene (or alkyne) to form a cyclopropane. It uses a methylene free radical intermediate that is delivered to both carbons of the alkene simultaneously, therefore the configuration of the double bond is preserved in the product and the reaction is stereospecific. The process is illustrated by the following scheme:



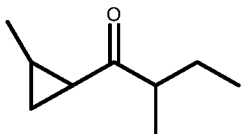
[0014] The Simmons–Smith reaction is generally preferred over other methods of cyclopropanation, however it can be expensive due to the high cost of diiodomethane. Modifications involving cheaper alternatives have been developed, such as dibromo methane or diazomethane and zinc iodide. The reactivity of the system can also be increased by using the Furukawa modification, exchanging the zinc-copper couple for diethylzinc. The reaction is explained in more detail in two papers issued by Simmons et al. in "A new synthesis of cyclopropanes from olefins", **JACS 80(19), p5323-5324 (1958)** and Smith et al. in "A new synthesis of cyclopropanes", **JACS 81(16), p4256-4264 (1959).**

[0015] Preferred species encompass derivatives of formula (I) wherein

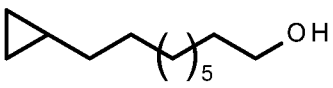
(a) R^2 stands for -CO-R^3 and R^3 for a linear or branched alkyl group with 3 or 4 carbon atoms – preferably obtained according to *Johnson-Corey-Chaykovsky reaction* - or

(b) R^2 stands for $-(CH_2)_n-R^4$, R^4 stands for -CH=O and n for an integer of from 8 to 10 - preferably obtained according to *Simmons-Smith reaction*..

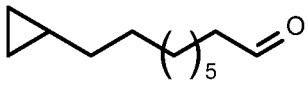
[0016] Particularly preferred are cyclopropyl derivatives according to formula (II), (III) or (IV) or mixtures thereof.



(II)



(III)



(IV)

Manufacturing process

[0017] Another object of the present invention refers to a first process for obtaining cyclopropyl derivatives according to formula (I)

R^1-R^2 (I)

wherein

- R^1 represents a cyclopropyl or C_1-C_6-alkylcyclopropyl residue;
- R^2 stands for a -CO-R^3 radical; and
- R^3 stands for linear or branched C_1-C_6 alkyl;

by means of a *Johnson–Corey–Chaykovsky reaction*, wherein an enone according to formula (V)

CH_3-CH=CH-R^2 (V)

in which R^2 has the above-referenced meaning is subjected to cyclopropanation in the presence of a sulfur ylide having the structure $Me_3S^-Hal^+$ and wherein Hal stands for bromine, chlorine or preferably iodine. The process is preferably conducted in the presence of DMSO and sodium hydride forming a methylsulfinyl carbanion ("dimsyl anionion"), which acts as a powerful nucleophilic agent. The reaction can be conducted in the presence or in the absence of aprotic solvents. A preferred solvent, however, is DCM or chloroform.

[0018] Another object of the present invention refers to a second process for obtaining cyclopropyl derivatives according to formula (I)

R^1-R^2 (I)

wherein

- R^1 represents a cyclopropyl or C_1-C^6-alkylcyclopropyl residue;
- R^2 stands for a–$(CH_2)_n$-R^4 radical;
- R^4 stands for -CH_2OH or -CH=O; and
- n stands for an integer of from 1 to 12

by means of a *Simmons-Smith reaction*, wherein

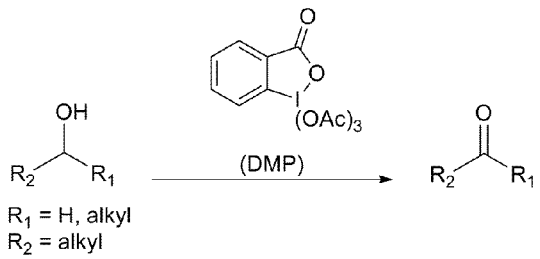
(a) in a first step an ω-unsaturated aliphatic alcohol according to formula (VI)

CH_2=CH-$(CH_2)_n$-CH_2OH

in which n has the above-referenced meanings is subjected to cyclopropanation in the presence of an organozinc carbenoid having the structure Hal-ZnCH_2-Hal and wherein Hal stands for bromine, chlorine or preferably iodine, and optionally

(b) the hydroxyl group of the reaction product obtained from step (i) is subjected to oxidation to form an aldehyde group.

[0019] Said carbenoids are typically obtained from the reaction of zinc with a methylene halogenide such as for example CH_2I_2. The reaction can be conducted in the presence or in the absence of aprotic solvents. A preferred solvent, however, is DCM or chloroform. The oxidation of the terminal hydroxyl group to form an aldehyde function can be done by any suitable oxidation agent. Particularly preferred, however, is a Dess-Martin oxidation using Dess–Martin periodinane as shown in the following scheme:



[0020] The reaction uses a hypervalent iodine reagent similar to IBX to selectively and mildly oxidize alcohols to aldehydes or ketones. The reaction is commonly conducted in chlorinated solvents such as dichloromethane or chloroform. The reaction can be done at room temperature and is quickly complete. Many other functional groups will not be affected by this reaction.

PERFUME MIXTURE

[0021] Another object of the present invention refers to a perfume mixture comprising the cyclopropyl derivatives as defined above as primary fragrances and at least one secondary fragrance different from said primary fragrances and. Said secondary fragrances can be selected from the group consisting of:

- [(3,7-dimethyl-6-octenyl)-xy]-cetaldehyde,
- 1-(p-menthene-6(2)-yl)-1-propanone,
- 1,2,3,4,5,6,7,8-octahydro-8,8-dimethyl-2-naphthaldehyde,
- 10-undecen-1-al,
- 10-undecen-1-ol,
- 1-decanal,
- 1-dodecanal,
- 1-methyl-3-(4-methylpentyl)-3-cyclohexene-carboxyaldehyde,
- 1-methyl-4-(4-methyl-3-pentenyl)-3-cyclohexene-1-carboxaldehyde,
- 1-nonanal,
- 1-octanal,
- 1-octen-3-ol,
- 1-p-menthene-q-carboxaldehyde,
- 1-undecanal,
- 2-(2-(4-Methyl-3-cyclohexen-1-yl)propyl)-cyclopentanone,
- 2,4,4,7-tetramethyl-oct-6-en-3-one,

- 2,4,6-trimethyl-3-cyclohexene-l-carboxalde-hyde,
- 2,4-dimethyl-3-cyclohexen-1-carboxaldehyde 4-methoxybenzaldehyde,
- 2,4-dimethyl-3-cyclohexen-1-carboxyaldehyde,
- 2,6,10-trimethyl-5,9-undecadienal,
- 2,6,10-trimethyl-9-undecenal, 3-dodecen-1-al,
- 2,6-dimethyl-5-heptenal;
- 2,6-dimethylhept-5-en-1-al,
- 2,6-dimethylheptan-2-ol,
- 2,6-nonadienal,
- 2-acetyl-3,3-di-methyl-norbornan,
- 2-methyl decanal,
- 2-methyl octanal,
- 2-methyl undecanal,
- 2-methyl-3-(4-tertbutyl)propanal,
- 2-methyl-3-(isopropyl-phenyl)propanal,
- 2-methyl-3-(para-methoxy-phenylpropanal),
- 2-methyl-3-phenyl-2-propen-1-al,
- 2-methyl-4-(2,6,6-trimethyl-1-cyclohexen-1-yl)-2-butenal,
- 2-methylbutanol,
- 2-methylpentanol,
- 2-phenoxyethanol,
- 2-phenylpropan-1-al,
- 2-phenylpropanol,
- 2-tert-butycyclohexanol,
- 3-(3,4-methylendioxy-phenyl)-2-methylpropan-1-al,
- 3-(3-isopropylphenyl)-butan-1-al,
- 3-(4-ethylphenyl)-2,2-dimethylpropan-1-al,
- 3-(4-ethylphenyl)-2,2-dimethylpropanal,
- 3-(4-isopropylphenyl)-2-methylpropan-1-al,
- 3-(4-methoxyphenyl)-2-methylpropanal,
- 3-(4-tert-butylphenyl)-2-methyl-propanal,
- 3-(4-tert-butylphenyl)-propanal,

- 3,4-dimethoxybenzaldehyde,
- 3,4-methylendioxybenzaldehyde,
- 3,5,5-trimethylcyclohexanol,
- 3,5,5-trimethylhexanal,
- 3,5,6-trimethyl-3-cyclohexenecarboxaldehyde,
- 3,7-dimethyl-2-methylene-6-octenal,
- 3,7-dimethyl-6-octen-1-al,
- 3,7-dimethyloctan-1-al,
- 3-ethoxy-4-hydroxybenzaldehyde,
- 3-hexanol,
- 3-methoxy-4-hydroxy-benzaldehyde,
- 3-methyl-5-phenyl-1-pentanal,
- 3-methyl-5-phenylpentanol,
- 3-octanol,
- 3-phenyl-2-hexylprop-2-enal,
- 3-phenyl-2-pentylprop-2-en-1-al,
- 3-phenyl-2-propenal,
- 3-phenylprop-2-en-1-al,
- 3-phenylpropanol,
- 3-propyl-bicyclo[2.2.1]-hept-5-ene-2-carbaldehyde,
- 4-(1-ethoxyvinyl)-3,3,5,5-tetramethyl cyclohexanone,
- 4-(3)(4-methyl-3-pentenyl)-3-cyclohexen-carboxaldehyde,
- 4-(4-hydroxy-3-methoxyphenyl)-2-butanone,
- 4-(4-hydroxy-4-methylpentyl)-3-cylohexene-l-carboxal-dehyde,
- 4-(tricyclo[5.2.1.0(2,6)]-decylidene-8)-butanal;
- 4-damascol,
- 4-heptenol,
- 4-hydroxy-3-methoxybenzaldehyde,
- 4-isopropyl benzyaldehyde,
- 4-isopropyl cyclohexanol,
- 4-methoxy benzaldehyde,
- 4-methylphenyl acetaldehyde,

- 4-tert-butyl cyclohexanol,
- 5,9-dimethyl-4,8-decadienal,
- 5-methoxyhexahydro-4,7-methanoindan-1-carboxyaldehyde,
- 5-methoxyhexahydro-4,7-methanoindan-2-carboxyaldehyde,
- 6,10-dimethyl-3-oxa-5,9-undecadien-1-al,
- 6,6-dimethyl-2-norpinene-2-propionaldehyde,
- 6,7-dihydro-1,1,2,3,3-pentamethyl-4(5H)-indanone,
- 6,8-dimethyl-2-nonanol,6-nonen-1-ol,
- 6-isopropyl-deca-hydro-2-naphtone,
- 6-methoxyhexahydro-4,7-methanoindan-1-carboxyaldehyde,
- 6-methoxyhexahydro-4,7-methanoindan-2-carboxyaldehyde,
- 7-hydroxy-3,7-dimethyl octanal,
- 7-methoxy-3,7-dimethyloctan-1-al,
- 9-decen-1-ol,
- 9-decenal,
- acetophenone,
- adoxal,
- allyl cyclohexylpropionate,
- alphalonen,
- ambroxan,
- amylsalicylat,
- anethol,
- anisaldehyde,
- benzaldehyde,
- benzophenone,
- benzyl acetate,
- benzyl acetone,
- benzyl alcohol,
- benzyl salicylate,
- benzylethyl ether,
- bourgeonal,
- buccoxime,

- butyl salicylate,
- campher,
- canthoxal,
- carvone,
- cassione,
- celery cetone
- chlorhydral,
- cinnamalcohol,
- cis-/trans-3,7-dimethyl-2,6-octadien-1-al,
- cis-jasmon,
- citral or its mixtures,
- citronellal,
- citronellol,
- citronellyl oxyacetaldehyde,
- cumal,
- cyclamenaldehyde,
- cyclohexyl salicylate,
- cymal,
- damarose,
- damascenone,
- decanol,
- decyl aldehyde,
- delphone,
- dihydrojasmone,
- dihydromyrcenol,
- dihydrozimtaldehyde,
- dihydro-β-lonone,
- dimethyl benzylcarbinol,
- dimethyl benzylcarbinylacetate,
- dimethyl heptanol,
- dimethyl octanol,
- dimethyl octenone,

- dulcinyl
- ethyl salicylate,
- ethyl vanilin,
- ethylmethylphenyl glycinate,
- eugenol,
- fenchone,
- fleuramone,
- floralozon,
- floramat,
- florhydral,
- gelsone,
- geraniol,
- hedione,
- helional,
- heliotropin,
- heptanol,
- hexahydro-4,7-methanoindan-1-carboxaldehyde,
- hexahydro-8,8-dimethyl-2-naphthaldehyde,
- hexalone,
- hexyl salicylat,
- hydroxycitronellal,
- isoborneol,
- isodamascone,
- isoeugenol,
- isojasmone,
- isopulegol,
- jasmacyclatat,
- koavon,
- laurinaldehyde,
- ligustral,
- lilial citral,
- lilial,

- limonen,
- linalool,
- linalyl acetate,
- livescon,
- lyral,
- m-cymene-7-carboxaldehyde,
- melonal,
- melusat,
- menthol,
- menthone,
- methyl acetophenone,
- methyl cedrenyl ketone,
- methyl cedrylon,
- methyl cedrylone,
- methyl cyclocitrone,
- methyl dihydrojasmonate,
- methyl heptenone,
- methyl lavender ketone,
- methyl-dihydrojasmonate,
- methylnonyl acetaldehyde,
- methyl-β-naphthyl ketone,
- moschus indanone,
- muscone,
- myrtenol,
- n-dodecanal,
- neobutenone,
- nerol,
- n-hexanol,
- nonanol,
- n-undecanal,
- octahydro-4,7-methano-1H-indenecarboxaldehyde;
- octanal,

- octanol,
- o-methoxyzimtaldehyde,
- orivone,
- p-ethyl-α,α-dimethylhydrozimtaldehyde,
- phenol,
- phenoxyacetaldehyde;
- phenoxyisobutyrate,
- phenyl acetaldehyde,
- phenyl salicylat,
- phenylethyl acetate,
- phenylethyl alcohol,
- p-hydroxy phenylbutanone,
- pinen
- plicatone,
- p-menthan-7-ol,
- p-methoxy acetophenone,
- p-methyl phenoxy acetaldehyde,
- p-tert.-bucinal,
- p-tert.-butyl cyclohexanone,
- p-tert.-butyl cyclohexylacetate,
- p-tolyl acetaldehyde;
- styrallyl propionate,
- tetrahydrogeraniol,
- tetrahydrolinalool,
- tetrameran,
- thymol,
- tonalid/moschus plus,
- trans-2-cis-6-nonadienol,
- trans-2-nonen-1-ol,
- trans-2-octenol,
- trans-4-decenal,
- triplal,

- undecanal,
- undecanol,
- undecylenraldehyde,
- vanillin,
- veloutone,
- verdone,
- α.-methyl-3,4-(methylenedioxy)-hydrocinnamaldehyde,
- α-damascone,
- α-methyl benzylalcohol,
- α-methyl-4-(l-methylethyl)benzene-acetaldehyde,
- α-methylphenylacetaldehyde,
- αn-Amylzimtaldehyde,
- α-n-hexyl-cinnamaldehyde,
- α-terpineol,
- β-damascone,
- β-ionon,
- β-terpineol,
- γ-methylionone,
- δ-damascone,

[0022] The perfume mixtures may comprise at least one cyclopropyl derivatives according to the invention and said secondary fragrances in amounts by weight ranging from about 0.01:99.99 to about 10:90, preferably from about 0.1:99.9 to 1:99.

Solvents

[0023] In a preferred embodiment the mixtures according to the present invention may comprise at least one solvent. Suitable solvents are selected from the group consisting of water, ethanol, propylene glycol, dipropylene glycol, glycerol and triethyl citrate. Typically, said at least one solvent is present in the mixture in amounts ranging from about 10 to about 90 wt.-percent and preferably from about 25 to about 50 wt.-percent.

COSMETIC AND PERSONAL CARE FORMULATIONS

[0024] Another object of the present invention concerns a cosmetic or personal care formulation comprising said cyclopropyl derivatives or said perfume mixture, both as described above. Said formulations may comprise said components in amounts ranging from about 0.01 to about 2 wt.-percent and preferably from about 0.1 to 1 wt.-percent – calculated on the formulation. The composition may represent for example a cosmetic cream, lotion, spray, emulsion, ointment, gel or mouse and the like.

[0025] The preparations according to the invention may contain antidandruff agents, irritation-preventing agents, irritation-inhibiting agents, antioxidants, adstringents, perspiration-inhibiting agents, antiseptic agents, ant-statics, binders, buffers, carrier materials, chelating agents, cell stimulants, cleansing agents, care agents, deodorizing agents, antiperspirants, softeners, emulsifiers, enzymes, essential oils, fibres, film-forming agents, fixatives, foam-forming agents, foam stabilizers, substances for preventing foaming, foam boosters, gelling agents, gel-forming agents, hair care agents, hair-setting agents, hair-straightening agents, moisture-donating agents, moisturizing substances, moisture-retaining substances, bleaching agents, strengthening agents, stain-removing agents, optically brightening agents, impregnating agents, dirt-repellent agents, friction-reducing agents, lubricants, moisturizing creams, ointments, opacifying agents, plasticizing agents, covering agents, polish, gloss agents, polymers, powders, proteins, re-oiling agents, abrading agents, silicones, hair promotion agents, cooling agents, skin-cooling agents, warming agents, skin-warming agents, stabilizers, UV-absorbing agents, UV filters, detergents, thickeners, vitamins, oils, waxes, fats, phospholipids, saturated fatty acids, mono- or polyunsaturated fatty acids, α-hydroxy acids, polyhydroxyfatty acids, liquefiers, dyestuffs, colour-protecting agents, pigments, odoriferous substances, polyols, surfactants, electrolytes, organic solvents or silicone derivatives and the like as additional auxiliaries and additives.

Surfactants

[0026] Preferred auxiliaries and additives are anionic and/or amphoteric or zwitterionic surfactants. Non-ionic and cationic surfactants can be also present in the composition. Suitable examples are mentioned along with the paragraph dealing with emulsifiers.

[0027] Typical examples for anionic and zwitterionic surfactants encompass: Almondamidopropylamine Oxide, Almondamidopropyl Betaine, Aminopropyl Laurylglutamine, Ammonium C12-15 Alkyl Sulfate, Ammonium C12-16 Alkyl Sulfate, Ammonium Capryleth Sulfate, Ammonium Cocomonoglyceride Sulfate, Ammonium Coco-Sulfate, Ammonium Cocoyl Isethionate, Ammonium Cocoyl Sarcosinate, Ammonium C12-15 Pareth Sulfate, Ammonium C9-10 Perfluoroalkylsulfonate, Ammonium Dinonyl Sulfosuccinate, Ammonium Dodecylbenzenesulfonate, Ammonium Isostearate, Ammonium Laureth-6 Carboxylate, Ammonium Laureth-8 Carboxylate, Ammonium Laureth Sulfate, Ammonium Laureth-5 Sulfate, Ammonium Laureth-7 Sulfate, Ammonium Laureth-9 Sulfate, Ammonium Laureth-12 Sulfate, Ammonium

Lauroyl Sarcosinate, Ammonium Lauryl Sulfate, Ammonium Lauryl Sulfosuccinate, Ammonium Myreth Sulfate, Ammonium Myristyl Sulfate, Ammonium Nonoxynol-4 Sulfate, Ammonium Nonoxynol-30 Sulfate, Ammonium Oleate, Ammonium Palm Kernel Sulfate, Ammonium Stearate, Ammonium Tallate, AMPD-Isostearoyl Hydrolyzed Collagen, AMPD-Rosin Hydrolyzed Collagen, AMP-Isostearoyl Hydrolyzed Collagen, AMP-Isostearoyl Hydrolyzed Keratin, AMP-Isostearoyl Hydrolyzed Soy Protein, AMP-Isostearoyl Hydrolyzed Wheat Protein, Apricotamidopropyl Betaine, Arachidic Acid, Arginine Hexyldecyl Phosphate, Avocadamidopropyl Betaine, Avocado Oil Glycereth-8 Esters, Babassu Acid, Babassuamidopropylamine Oxide, Babassuamidopropyl Betaine, Beeswax Acid, Behenamidopropyl Betaine, Behenamine Oxide, Beheneth-25, Beheneth-30, Behenic Acid, Behenyl Betaine, Bis- Butyldimethicone Polyglyceryl-3, Butoxynol-5 Carboxylic Acid, Butoxynol-19 Carboxylic Acid, Butyldimoniumhydroxypropyl Butylglucosides Chloride, Butyldimoniumhydroxypropyl Laurylglucosides Chloride, Butyl Glucoside, Butylglucoside Caprate, Butylglucosides Hydroxypropyltrimonium Chloride, Butyloctanoic Acid, C18-36 Acid, C20-40 Acid, C30-50 Acid, C16-22 Acid Amide MEA, Calcium Dodecylbenzenesulfonate, Calcium Lauroyl Taurate, C9-16 Alkane/Cycloalkane, C10-14 Alkyl Benzenesulfonic Acid, C12-14 Alkyl Diaminoethylglycine HCL, C9-15 Alkyl Phosphate, Candida Bombicola/Glucose/Methyl Rapeseedate Ferment, Canolamidopropyl Betaine, Capric Acid, Caproic Acid, Caproyl Ethyl Glucoside, Capryl/Capramidopropyl Betaine, Capryleth-4 Carboxylic Acid, Capryleth-6 Carboxylic Acid, Capryleth-9 Carboxylic Acid, Caprylic Acid, Capryloyl Collagen Amino Acids, Capryloyl Glycine, Capryloyl Hydrolyzed Collagen, Capryloyl Hydrolyzed Keratin, Capryloyl Keratin Amino Acids, Capryloyl Silk Amino Acids, Caprylyl/Capryl Glucoside, Caprylyl/Capryl Wheat Bran/Straw Glycosides, Caprylyl Glucoside, Caprylyl Glyceryl Ether, Caprylyl Pyrrolidone, Carnitine, Ceteareth-20, Ceteareth-23, Ceteareth-24, Ceteareth-25, Ceteareth-27, Ceteareth-28, Ceteareth-29, Ceteareth-30, Ceteareth-33, Ceteareth-34, Ceteareth-40, Ceteareth-50, Ceteareth-55, Ceteareth-60, Ceteareth-80, Ceteareth-100, Ceteareth-25 Carboxylic Acid, Ceteareth-2 Phosphate, Ceteareth-4 Phosphate, Ceteareth-5 Phosphate, Ceteareth-10 Phosphate, Ceteth-20, Ceteth-23, Ceteth-24, Ceteth-25, Ceteth-30, Ceteth-40, Ceteth-45, Ceteth-150, Ceteth-8 Phosphate, Ceteth-10 Phosphate, Ceteth-20 Phosphate, Cetoleth-22, Cetoleth-24, Cetoleth-25, Cetoleth-30, Cetyl Betaine, Chrysanthemum Sinense Flower Extract, C12-14 Hydroxyalkyl Hydroxyethyl Beta-Alanine, C12-14 Hydroxyalkyl Hydroxyethyl Sarcosine, Cocamidoethyl Betaine, Cocamidopropylamine Oxide, Cocamidopropyl Betainamide MEA Chloride, Cocamidopropyl Betaine, Cocamidopropyl Hydroxysultaine, Cocamine Oxide, Cocaminobutyric Acid, Cocaminopropionic Acid, Coceth-7 Carboxylic Acid, Coceth-4 Glucoside, Cocoamphodipropionic Acid, Cocobetainamido Amphopropionate, Coco-Betaine, Cocodimonium Hydroxypropyl Hydrolyzed Rice Protein, Cocodimonium Hydroxypropyl Hydrolyzed Soy Protein, Cocodimonium Hydroxypropyl Hydrolyzed Wheat Protein, Coco-Glucoside, Cocoglucosides Hydroxypropyltrimonium Chloride, Coco-Hydroxysultaine, Coco-Morpholine Oxide, Coconut Acid, Coconut Oil Glycereth-8 Esters, Coco/Oleamidopropyl Betaine, Coco-Sultaine, Coco/Sunfloweramidopropyl Betaine, Cocoylcholine Methosulfate, Cocoyl Glutamic Acid, Cocoyl Hydrolyzed Collagen, Cocoyl Hydrolyzed Keratin, Cocoyl Hydrolyzed Oat Protein, Cocoyl Hydrolyzed Rice Protein, Cocoyl Hydrolyzed

Silk, Cocoyl Hydrolyzed Soy Protein, Cocoyl Hydrolyzed Wheat Protein, Cocoyl Sarcosine, Corn Acid, Cottonseed Acid, Cottonseed Oil Glycereth-8 Esters, C10-16 Pareth-1, C10-16 Pareth-2, C11-13 Pareth-6, C11-13 Pareth-9, C11-13 Pareth-10, C11-15 Pareth-30, C11-15 Pareth-40, C12-13 Pareth-1, C12-13 Pareth- 23, C12-14 Pareth-5, C12-14 Pareth-9, C13-15 Pareth-21, C14-15 Pareth-8, C20-22 Pareth-30, C20- 40 Pareth-40, C20-40 Pareth-95, C22-24 Pareth-33, C30-50 Pareth-40, C9-11 Pareth-6 Carboxylic Acid, C9-11 Pareth-8 Carboxylic Acid, C11-15 Pareth-7 Carboxylic Acid, C12-13 Pareth-5 Carboxylic Acid, C12-13 Pareth-7 Carboxylic Acid, C12-13 Pareth-8 Carboxylic Acid, C12-13 Pareth-12 Carboxylic Acid, C12-15 Pareth-7 Carboxylic Acid, C12-15 Pareth-8 Carboxylic Acid, C12-15 Pareth- 12 Carboxylic Acid, C14-15 Pareth-8 Carboxylic Acid, C6-10 Pareth-4 Phosphate, C12-13 Pareth-2 Phosphate, C12-13 Pareth-10 Phosphate, C12-15 Pareth-6 Phosphate, C12-15 Pareth-8 Phosphate, C12-15 Pareth-10 Phosphate, C12-16 Pareth-6 Phosphate, C4-18 Perfluoroalkylethyl Thiohydroxypropyltrimonium Chloride, Cupuassuamidopropyl Betaine, DEA-C12-13 Alkyl Sulfate, DEA-C12-15 Alkyl Sulfate, DEA-Ceteareth-2 Phosphate, DEA-Cetyl Sulfate, DEA- Cocoamphodipropionate, DEA-C12-13 Pareth-3 Sulfate, DEA-Cyclocarboxypropyloleate, DEA- Dodecylbenzenesulfonate, DEA-Isostearate, DEA-Laureth Sulfate, DEA-Lauryl Sulfate, DEA- Linoleate, DEA-Methyl Myristate Sulfonate, DEA-Myreth Sulfate, DEA-Myristate, DEA-Myristyl Sulfate, DEA-Oleth-5 Phosphate, DEA-Oleth-20 Phosphate, DEA PG-Oleate, Deceth-7 Carboxylic Acid, Deceth-7 Glucoside, Deceth-9 Phosphate, Decylamine Oxide, Decyl Betaine, Decyl Glucoside, Decyltetradeceth-30, Decyltetradecylamine Oxide, Diammonium Lauramido-MEA Sulfosuccinate, Diammonium Lauryl Sulfosuccinate, Diammonium Oleamido PEG-2 Sulfosuccinate, Dibutoxymethane, Di-CI 2-15 Pareth-2 Phosphate, Di-CI 2-15 Pareth-4 Phosphate, Di-CI 2-15 Pareth-6 Phosphate, Di- C12-15 Pareth-8 Phosphate, Di-CI 2-15 Pareth-10 Phosphate, Didodecyl Butanetetracarboxylate, Diethylamine Laureth Sulfate, Diethylhexyl Sodium Sulfosuccinate, Dihydroxyethyl C8-10 Alkoxypropylamine Oxide, Dihydroxyethyl C9-11 Alkoxypropylamine Oxide, Dihydroxyethyl C12-15 Alkoxypropylamine Oxide, Dihydroxyethyl Cocamine Oxide, Dihydroxyethyl Lauramine Oxide, Dihydroxyethyl Stearamine Oxide, Dihydroxyethyl Tallowamine Oxide, Dimethicone PEG-7 Phosphate, Dimethicone PEG-10 Phosphate, Dimethicone PEG/PPG-7/4 Phosphate, Dimethicone PEG/PPG-12/4 Phosphate, Dimethicone/Polyglycerin-3 Crosspolymer, Dimethicone Propyl PG- Betaine, Dimyristyl Phosphate, Dioleoylamidoethyl Hydroxyethylmonium Methosulfate, DIPA- Hydrogenated Cocoate, DIPA-Lanolate, DIPA-Myristate, Dipotassium Capryloyl Glutamate, Dipotassium Lauryl Sulfosuccinate, Dipotassium Undecylenoyl Glutamate, Disodium Babassuamido MEA-Sulfosuccinate, Disodium Caproamphodiacetate, Disodium Caproamphodipropionate, Disodium Capryloamphodiacetate, Disodium Capryloamphodipropionate, Disodium Capryloyl Glutamate, Disodium Cetearyl Sulfosuccinate, Disodium Cetyl Phenyl Ether Disulfonate, Disodium Cetyl Sulfosuccinate, Disodium Cocamido MEA-Sulfosuccinate, Disodium Cocamido MIPA PEG-4 Sulfosuccinate, Disodium Cocamido MIPA-Sulfosuccinate, Disodium Cocamido PEG-3 Sulfosuccinate, Disodium Coceth-3 Sulfosuccinate, Disodium Cocoamphocarboxyethylhydroxypropylsulfonate, Disodium Cocoamphodiacetate, Disodium Cocoamphodipropionate, Disodium Coco-Glucoside Sulfosuccinate, Disodium Coco-Sulfosuccinate, Disodium Cocoyl Butyl

Gluceth-10 Sulfosuccinate, Disodium Cocoyl Glutamate, Disodium C12-14 Pareth-1 Sulfosuccinate, Disodium C12-14 Pareth-2 Sulfosuccinate, Disodium C12-15 Pareth Sulfosuccinate, Disodium C12-14 Sec-Pareth-3 Sulfosuccinate, Disodium C12-14 Sec-Pareth-5 Sulfosuccinate, Disodium C12-14 Sec-Pareth-7 Sulfosuccinate, Disodium C12-14 Sec-Pareth-9 Sulfosuccinate, Disodium C12-14 Sec-Pareth-12 Sulfosuccinate, Disodium Deceth-5 Sulfosuccinate, Disodium Deceth-6 Sulfosuccinate, Disodium Decyl Phenyl Ether Disulfonate, Disodium Dihydroxyethyl Sulfosuccinylundecylenate, Disodium Ethylene Dicocamide PEG-15 Disulfate, Disodium Hydrogenated Cottonseed Glyceride Sulfosuccinate, Disodium Hydrogenated Tallow Glutamate, Disodium Hydroxydecyl Sorbitol Citrate, Disodium Isodecyl Sulfosuccinate, Disodium Isostearamido MEA-Sulfosuccinate, Disodium Isostearamido MIPA-Sulfosuccinate, Disodium Isostearoamphodiacetate, Disodium Isostearoamphodipropionate, Disodium Isostearyl Sulfosuccinate, Disodium Laneth-5 Sulfosuccinate, Disodium Lauramido MEA-Sulfosuccinate, Disodium Lauramido MIPA Glycol Sulfosuccinate, Disodium Lauramido PEG-2 Sulfosuccinate, Disodium Lauramido PEG-5 Sulfosuccinate, Disodium Laureth-5 Carboxyamphodiacetate, Disodium Laureth-7 Citrate, Disodium Laureth Sulfosuccinate, Disodium Laureth-6 Sulfosuccinate, Disodium Laureth-9 Sulfosuccinate, Disodium Laureth-12 Sulfosuccinate, Disodium Lauriminobishydroxypropylsulfonate, Disodium Lauriminodiacetate, Disodium Lauriminodipropionate, Disodium Lauriminodipropionate Tocopheryl Phosphates, Disodium Lauroamphodiacetate, Disodium Lauroamphodipropionate, Disodium N- Lauroyl Aspartate, Disodium Lauroyl Glutamate, Disodium Lauryl Phenyl Ether Disulfonate, Disodium Lauryl Sulfosuccinate, Disodium Myristamido MEA-Sulfosuccinate, Disodium Nonoxynol-10 Sulfosuccinate, Disodium Oleamido MEA-Sulfosuccinate, Disodium Oleamido MIPA-Sulfosuccinate, Disodium Oleamido PEG-2 Sulfosuccinate, Disodium Oleoamphodipropionate, Disodium Oleth-3 Sulfosuccinate, Disodium Oleyl Phosphate, Disodium Oleyl Sulfosuccinate, Disodium Palmitamido PEG-2 Sulfosuccinate, Disodium Palmitoleamido PEG-2 Sulfosuccinate, Disodium PEG-4 Cocamido MIPA-Sulfosuccinate, Disodium PEG-12 Dimethicone Sulfosuccinate, Disodium PEG-8 Palm Glycerides Sulfosuccinate, Disodium PPG-2-Isodeceth-7 Carboxyamphodiacetate, Disodium Ricinoleamido MEA-Sulfosuccinate, Disodium Sitostereth-14 Sulfosuccinate, Disodium Soyamphodiacetate, Disodium Stearamido MEA-Sulfosuccinate, Disodium Steariminodipropionate, Disodium Stearoamphodiacetate, Disodium Stearoyl Glutamate, Disodium Stearyl Sulfosuccinamate, Disodium Stearyl Sulfosuccinate, Disodium 2-Sulfolaurate, Disodium 2-Sulfopalmitate, Disodium Tallamido MEA-Sulfosuccinate, Disodium Tallowamido MEA-Sulfosuccinate, Disodium Tallowamphodiacetate, Disodium Tallowiminodipropionate, Disodium Tallow Sulfosuccinamate, Disodium Tridecylsulfosuccinate, Disodium Undecylenamido MEA-Sulfosuccinate, Disodium Undecylenamido PEG-2 Sulfosuccinate, Disodium Undecylenoyl Glutamate, Disodium Wheat Germamido MEA-Sulfosuccinate, Disodium Wheat Germamido PEG-2 Sulfosuccinate, Disodium Wheatgermamphodiacetate, Di-TEA-Cocamide Diacetate, Di-TEA-Oleamido PEG-2 Sulfosuccinate, Di-TEA-Palmitoyl Aspartate, Ditridecyl Sodium Sulfosuccinate, Dodecylbenzene Sulfonic Acid, Erucamidopropyl Hydroxysultaine, Ethylhexeth-3 Carboxylic Acid, Ethyl PEG-15 Cocamine Sulfate, Glyceryl Capryl Ether, Hexyldecanoic Acid, Hydrogenated Coconut Acid, Hydrogenated Laneth-25, Hydrogenated Men-

haden Acid, Hydrogenated Palm Acid, Hydrogenated Palm Kernel Amine Oxide, Hydrogenated Tallow Acid, Hydrogenated Tallowamine Oxide, Hydrogenated Tallow Betaine, Hydrogenated Talloweth-25, Hydrogenated Tallowoyl Glutamic Acid, Hydrolyzed Candida Bombicola Extract, Hydroxyceteth-60, Hydroxyethyl Acetomonium PG-Dimethicone, Hydroxyethylbutylamine Laureth Sulfate, Hydroxyethyl Carboxymethyl Cocamidopropylamine, Hydroxyethyl Hydroxypropyl C12-15 Alkoxypropylamine Oxide, Hydroxylauryl/Hydroxymyristyl Betaine, Hydroxystearic Acid, Hydroxysuccinimidyl C10-40 Isoalkyl Acidate, Hydroxysuccinimidyl C21-22 Isoalkyl Acidate, Hydroxysultaines, IPDI/PEG-15 Soyamine Oxide Copolymer, IPDI/PEG-15 Soyethonium Ethosulfate Copolymer, IPDI/PEG-15 Soy Glycinate Copolymer, Isoceteth-30, Isolaureth-4 Phosphate, Isopolyglyceryl-3 Dimethicone, Isopolyglyceryl-3 Dimethiconol, Isopropanolamine Lanolate, Isopropylamine Dodecylbenzenesulfonate, Isostearamidopropylamine Oxide, Isostearamidopropyl Betaine, Isostearamidopropyl Morpholine Oxide, Isosteareth-8, Isosteareth-16, Isosteareth-22, Isosteareth-25, Isosteareth-50, Isostearic Acid, Isostearoyl Hydrolyzed Collagen, Jojoba Oil PEG-150 Esters, Jojoba Wax PEG-80 Esters, Jojoba Wax PEG-120 Esters, Laneth-20, Laneth-25, Laneth-40, Laneth-50, Laneth-60, Laneth-75, Lanolin Acid, Lauramidopropylamine Oxide, Lauramidopropyl Betaine, Lauramidopropyl Hydroxysultaine, Lauramine Oxide, Lauraminopropionic Acid, Laurdimoniumhydroxypropyl Decylglucosides Chloride, Laurdimoniumhydroxypropyl Laurylglucosides Chloride, Laureth-16, Laureth-20, Laureth-21, Laureth-23, Laureth-25, Laureth-30, Laureth-38, Laureth-40, Laureth-3 Carboxylic Acid, Laureth-4 Carboxylic Acid, Laureth-5 Carboxylic Acid, Laureth- 6 Carboxylic Acid, Laureth-8 Carboxylic Acid, Laureth-10 Carboxylic Acid, Laureth-11 Carboxylic Acid, Laureth-12 Carboxylic Acid, Laureth-13 Carboxylic Acid, Laureth-14 Carboxylic Acid, Laureth-17 Carboxylic Acid, Laureth-6 Citrate, Laureth-7 Citrate, Laureth-1 Phosphate, Laureth-2 Phosphate, Laureth-3 Phosphate, Laureth-4 Phosphate, Laureth-7 Phosphate, Laureth-8 Phosphate, Laureth-7 Tartrate, Laurie Acid, Laurimino Bispropanediol, Lauriminodipropionic Acid, Lauroamphodipropionic Acid, Lauroyl Beta-Alanine, Lauroyl Collagen Amino Acids, Lauroyl Ethyltrimonium Methosulfate, Lauroyl Hydrolyzed Collagen, Lauroyl Hydrolyzed Elastin, Lauroyl Methyl Glucamide, Lauroyl Sarcosine, Lauroyl Silk Amino Acids, Lauryl Betaine, Lauryl Dimethicone/Polyglycerin-3 Crosspolymer, Lauryldimoniumhydroxypropyl Cocoglucosides Chloride, Lauryl Glucoside, Laurylglucosides Hydroxypropyltrimonium Chloride, Lauryl Glycol Hydroxypropyl Ether, Lauryl Hydroxysultaine, Lauryl Malamide, Lauryl Methylglucamide, Lauryl/Myristyl Glycol Hydroxypropyl Ether, Lauryl/Myristyl Wheat Bran/Straw Glycosides, Lauryl Polyglyceryl-3 Polydimethylsiloxyethyl Dimethicone, Lauryl Pyrrolidone, Lauryl Sultaine, Linoleic Acid, Linolenic Acid, Linseed Acid, Lysine Cocoate, Macadamia Seed Oil Glycereth-8 Esters, Magnesium Coceth Sulfate, Magnesium Coco-Sulfate, Magnesium Isododecylbenzenesulfonate, Magnesium Laureth-11 Carboxylate, Magnesium Laureth Sulfate, Magnesium Laureth-5 Sulfate, Magnesium Laureth-8 Sulfate, Magnesium Laureth-16 Sulfate, Magnesium Laureth-3 Sulfosuccinate, Magnesium Lauryl Hydroxypropyl Sulfonate, Magnesium Lauryl Sulfate, Magnesium Methyl Cocoyl Taurate, Magnesium Myreth Sulfate, Magnesium Oleth Sulfate, Magnesium/TEA-Coco-Sulfate, Manicouagan Clay, MEA-Cocoate, MEA-Laureth-6 Carboxylate, MEA- Laureth Sulfate, MEA-Lauryl Sulfate, MEA PPG-6 Laureth-7 Carboxylate,

MEA-PPG-8-Steareth-7 Carboxylate, MEA-Undecylenate, Meroxapol 108, Meroxapol 174, Meroxapol 178, Meroxapol 254, Meroxapol 255, Meroxapol 258, Meroxapol 314, Methoxy PEG-450 Amidoglutaroyl Succinimide, Methoxy PEG-450 Amido Hydroxysuccinimidyl Succinamate, Methoxy PEG-450 Maleimide, Methyl Morpholine Oxide, Milkamidopropyl Amine Oxide, Milkamidopropyl Betaine, Minkamidopropylamine Oxide, Minkamidopropyl Betaine, MIPA C12-15 Pareth Sulfate, MIPA-Dodecylbenzenesulfonate, MIPA-Laureth Sulfate, MIPA-Lauryl Sulfate, Mixed Isopropanolamines Lanolate, Mixed Isopropanolamines Lauryl Sulfate, Mixed Isopropanolamines Myristate, Morpholine Oleate, Morpholine Stearate, Myreth-3 Carboxylic Acid, Myreth-5 Carboxylic Acid, Myristalkonium Chloride, Myristamidopropylamine Oxide, Myristamidopropyl Betaine, Myristamidopropyl Dimethylamine Phosphate, Myristamidopropyl Hydroxysultaine, Myristamidopropyl PG-Dimonium Chloride Phosphate, Myristamine Oxide, Myristaminopropionic Acid, Myristic Acid, Myristoyl Ethyltrimonium Methosulfate, Myristoyl Glutamic Acid, Myristoyl Hydrolyzed Collagen, Myristoyl Sarcosine, Myristyl Betaine, Myristyl/Cetyl Amine Oxide, Myristyldimoniumhydroxypropyl Cocoglucosides Chloride, Myristyl Glucoside, Myristyl Phosphate, Nonoxynol-20, Nonoxynol-23, Nonoxynol-25, Nonoxynol-30, Nonoxynol-35, Nonoxynol-40, Nonoxynol-44, Nonoxynol-50, Nonoxynol-100, Nonoxynol-120, Nonoxynol-5 Carboxylic Acid, Nonoxynol-8 Carboxylic Acid, Nonoxynol-10 Carboxylic Acid, Nonoxynol-3 Phosphate, Nonoxynol-4 Phosphate, Nonoxynol-6 Phosphate, Nonoxynol-9 Phosphate, Nonoxynol-10 Phosphate, Nonyl Nonoxynol-30, Nonyl Nonoxynol-49, Nonyl Nonoxynol-100, Nonyl Nonoxynol-150, Nonyl Nonoxynol-7 Phosphate, Nonyl Nonoxynol-8 Phosphate, Nonyl Nonoxynol-9 Phosphate, Nonyl Nonoxynol-10 Phosphate, Nonyl Nonoxynol-11 Phosphate, Nonyl Nonoxynol-15 Phosphate, Nonyl Nonoxynol-24 Phosphate, Oatamidopropyl Betaine, Octoxynol-16, Octoxynol-25, Octoxynol-30, Octoxynol-33, Octoxynol-40, Octoxynol-70, Octoxynol-20 Carboxylic Acid, Octyldodeceth-20, Octyldodeceth-25, Octyldodeceth-30, Oleamidopropylamine Oxide, Oleamidopropyl Betaine, Oleamidopropyl Hydroxysultaine, Oleamine Oxide, Oleic Acid, Oleoyl Hydrolyzed Collagen, Oleoyl Sarcosine, Oleth-20, Oleth-23, Oleth-24, Oleth-25, Oleth-30, Oleth-35, Oleth-40, Oleth-44, Oleth-50, Oleth-3 Carboxylic Acid, Oleth-6 Carboxylic Acid, Oleth-10 Carboxylic Acid, Oleyl Betaine, Olivamidopropylamine Oxide, Olivamidopropyl Betaine, Olive Acid, Olivoyl Hydrolyzed Wheat Protein, Ophiopogon Extract Stearate, Ozonized Oleth-10, Ozonized PEG-10 Oleate, Ozonized PEG-14 Oleate, Ozonized Polysorbate 80, Palm Acid, Palmamidopropyl Betaine, Palmeth-2 Phosphate, Palmitamidopropylamine Oxide, Palmitamidopropyl Betaine, Palmitamine Oxide, Palmitic Acid, Palmitoyl Collagen Amino Acids, Palmitoyl Glycine, Palmitoyl Hydrolyzed Collagen, Palmitoyl Hydrolyzed Milk Protein, Palmitoyl Hydrolyzed Wheat Protein, Palmitoyl Keratin Amino Acids, Palmitoyl Oligopeptide, Palmitoyl Silk Amino Acids, Palm Kernel Acid, Palm Kernelamidopropyl Betaine, Peach Kernel Oil Glycereth-8 Esters, Peanut Acid, PEG-10 Castor Oil, PEG-40 Castor Oil, PEG-44 Castor Oil, PEG-50 Castor Oil, PEG-54 Castor Oil, PEG-55 Castor Oil, PEG-60 Castor Oil, PEG-80 Castor Oil, PEG-100 Castor Oil, PEG-200 Castor Oil, PEG-11 Cocamide, PEG-6 Cocamide Phosphate, PEG-4 Cocamine, PEG-8 Cocamine, PEG-12 Cocamine, PEG-150 Dibehenate, PEG-90 Diisostearate, PEG-75 Dilaurate, PEG-150 Dilaurate, PEG-75 Dioleate, PEG-150 Dioleate, PEG-75

Distearate, PEG-120 Distearate, PEG-150 Distearate, PEG-175 Distearate, PEG-190 Distearate, PEG-250 Distearate, PEG-30 Glyceryl Cocoate, PEG-40 Glyceryl Cocoate, PEG-78 Glyceryl Cocoate, PEG-80 Glyceryl Cocoate, PEG-30 Glyceryl Isostearate, PEG-40 Glyceryl Isostearate, PEG-50 Glyceryl Isostearate, PEG-60 Glyceryl Isostearate, PEG-90 Glyceryl Isostearate, PEG-23 Glyceryl Laurate, PEG-30 Glyceryl Laurate, PEG-25 Glyceryl Oleate, PEG-30 Glyceryl Oleate, PEG-30 Glyceryl Soyate, PEG-25 Glyceryl Stearate, PEG-30 Glyceryl Stearate, PEG-40 Glyceryl Stearate, PEG-120 Glyceryl Stearate, PEG-200 Glyceryl Stearate, PEG-28 Glyceryl Tallowate, PEG-80 Glyceryl Tallowate, PEG-82 Glyceryl Tallowate, PEG-130 Glyceryl Tallowate, PEG-200 Glyceryl Tallowate, PEG-45 Hydrogenated Castor Oil, PEG-50 Hydrogenated Castor Oil, PEG-54 Hydrogenated Castor Oil, PEG-55 Hydrogenated Castor Oil, PEG-60 Hydrogenated Castor Oil, PEG-80 Hydrogenated Castor Oil, PEG-100 Hydrogenated Castor Oil, PEG-200 Hydrogenated Castor Oil, PEG-30 Hydrogenated Lanolin, PEG-70 Hydrogenated Lanolin, PEG-50 Hydrogenated Palmamide, PEG-2 Isostearate, PEG-3 Isostearate, PEG-4 Isostearate, PEG-6 Isostearate, PEG-8 Isostearate, PEG-10 Isostearate, PEG-12 Isostearate, PEG-20 Isostearate, PEG-30 Isostearate, PEG-40 Isostearate, PEG- 26 Jojoba Acid, PEG-40 Jojoba Acid, PEG-15 Jojoba Alcohol, PEG-26 Jojoba Alcohol, PEG-40 Jojoba Alcohol, PEG-35 Lanolin, PEG-40 Lanolin, PEG-50 Lanolin, PEG-55 Lanolin, PEG-60 Lanolin, PEG- 70 Lanolin, PEG-75 Lanolin, PEG-85 Lanolin, PEG-100 Lanolin, PEG-150 Lanolin, PEG-75 Lanolin Oil, PEG-2 Lauramide, PEG-3 Lauramine Oxide, PEG-20 Laurate, PEG-32 Laurate, PEG-75 Laurate, PEG-150 Laurate, PEG-70 Mango Glycerides, PEG-20 Mannitan Laurate, PEG-8 Methyl Ether Dimethicone, PEG-120 Methyl Glucose Dioleate, PEG-80 Methyl Glucose Laurate, PEG-120 Methyl Glucose Trioleate, PEG-4 Montanate, PEG-30 Oleamine, PEG-20 Oleate, PEG-23 Oleate, PEG-32 Oleate, PEG-36 Oleate, PEG-75 Oleate, PEG-150 Oleate, PEG-20 Palmitate, PEG-150 Polyglyceryl-2 Tristearate, PEG/PPG-28/21 Acetate Dimethicone, PEG/PPG-24/18 Butyl Ether Dimethicone, PEG/PPG-3/17 Copolymer, PEG/PPG-5/35 Copolymer, PEG/PPG-8/55 Copolymer, PEG/PPG-10/30 Copolymer, PEG/PPG-10/65 Copolymer, PEG/PPG-12/35 Copolymer, PEG/PPG-16/17 Copolymer, PEG/PPG-20/9 Copolymer, PEG/PPG-20/20 Copolymer, PEG/PPG-20/60 Copolymer, PEG/PPG- 20/65 Copolymer, PEG/PPG-22/25 Copolymer, PEG/PPG-28/30 Copolymer, PEG/PPG-30-35 Copolymer, PEG/PPG-30/55 Copolymer, PEG/PPG-35/40 Copolymer, PEG/PPG-50/40 Copolymer, PEG/PPG-150/35 Copolymer, PEG/PPG-160/30 Copolymer, PEG/PPG-190/60 Copolymer, PEG/PPG-200/40 Copolymer, PEG/PPG-300/55 Copolymer, PEG/PPG-20/22 Methyl Ether Dimethicone, PEG-26-PPG-30 Phosphate, PEG/PPG-4/2 Propylheptyl Ether, PEG/PPG-6/2 Propylheptyl Ether, PEG-7/PPG-2 Propylheptyl Ether, PEG/PPG-8/2 Propylheptyl Ether, PEG/PPG- 10/2 Propylheptyl Ether, PEG/PPG-14/2 Propylheptyl Ether, PEG/PPG-40/2 Propylheptyl Ether, PEG/PPG-10/2 Ricinoleate, PEG/PPG-32/3 Ricinoleate, PEG-55 Propylene Glycol Oleate, PEG-25 Propylene Glycol Stearate, PEG-75 Propylene Glycol Stearate, PEG-120 Propylene Glycol Stearate, PEG-5 Rapeseed Sterol, PEG-10 Rapeseed Sterol, PEG-40 Ricinoleamide, PEG-75 Shea Butter Glycerides, PEG-75 Shorea Butter Glycerides, PEG-20 Sorbitan Cocoate, PEG-20 Sorbitan Isostearate, PEG-40 Sorbitan Lanolate, PEG-75 Sorbitan Lanolate, PEG-10 Sorbitan Laurate, PEG-40 Sorbitan Laurate, PEG-44 Sorbitan Laurate, PEG-75 Sorbitan Laurate, PEG-80 Sorbitan Laurate, PEG-20 Sorbitan Ole-

ate, PEG-80 Sorbitan Palmitate, PEG-40 Sorbitan Stearate, PEG-60 Sorbitan Stearate, PEG-160 Sorbitan Triisostearate, PEG-40 Soy Sterol, PEG-2 Stearamide Carboxylic Acid, PEG-9 Stearamide Carboxylic Acid, PEG-20 Stearate, PEG-23 Stearate, PEG-25 Stearate, PEG-30 Stearate, PEG-32 Stearate, PEG-35 Stearate, PEG-36 Stearate, PEG-40 Stearate, PEG-45 Stearate, PEG-50 Stearate, PEG-55 Stearate, PEG-75 Stearate, PEG-90 Stearate, PEG-100 Stearate, PEG- 120 Stearate, PEG-150 Stearate, PEG-45 Stearate Phosphate, PEG-20 Tallate, PEG-50 Tallow Amide, PEG-2 Tallowamide DEA, PEG-20 Tallowate, PEG-66 Trihydroxystearin, PEG-200 Trihydroxystearin, PEG-60 Tsubakiate Glycerides, Pelargonic Acid, Pentadoxynol-200, Pheneth-6 Phosphate, Poloxamer 105, Poloxamer 108, Poloxamer 182, Poloxamer 183, Poloxamer 184, Poloxamer 188, Poloxamer 217, Poloxamer 234, Poloxamer 235, Poloxamer 237, Poloxamer 238, Poloxamer 288, Poloxamer 334, Poloxamer 335, Poloxamer 338, Poloxamine 908, Poloxamine 1508, Polydimethylsiloxy PEG/PPG-24/19 Butyl Ether Silsesquioxane, Polydimethylsiloxy PPG-13 Butyl Ether Silsesquioxane, Polyglyceryl-6 Caprate, Polyglyceryl-10 Dilaurate, Polyglyceryl-20 Heptacaprylate, Polyglyceryl-20 Hexacaprylate, Polyglyceryl-2 Lauryl Ether, Polyglyceryl-10 Lauryl Ether, Polyglyceryl-20 Octaisononanoate, Polyglyceryl-6 Pentacaprylate, Polyglyceryl-10 Pentacaprylate, Polyglyceryl-3 Polydimethylsiloxyethyl Dimethicone, Polyglyceryl-6 Tetracaprylate, Polyglyceryl-10 Tetralaurate, Polyglyceryl-6 Tricaprylate, Polyglyceryl-10 Trilaurate, Polyquaternium- 77, Polyquaternium-78, Polyquaternium-79, Polyquaternium-80, Polyquaternium-81, Polyquaternium- 82, Pomaderris Kumerahou Flower/Leaf Extract, Poria Cocos Extract, Potassium Abietoyl Hydrolyzed Collagen, Potassium Babassuate, Potassium Behenate, Potassium C9-15 Alkyl Phosphate, Potassium C11-15 Alkyl Phosphate, Potassium C12-13 Alkyl Phosphate, Potassium C12-14 Alkyl Phosphate, Potassium Caprate, Potassium Capryloyl Glutamate, Potassium Capryloyl Hydrolyzed Rice Protein, Potassium Castorate, Potassium Cocoate, Potassium Cocoyl Glutamate, Potassium Cocoyl Glycinate, Potassium Cocoyl Hydrolyzed Casein, Potassium Cocoyl Hydrolyzed Collagen, Potassium Cocoyl Hydrolyzed Corn Protein, Potassium Cocoyl Hydrolyzed Keratin, Potassium Cocoyl Hydrolyzed Oat Protein, Potassium Cocoyl Hydrolyzed Potato Protein, Potassium Cocoyl Hydrolyzed Rice Bran Protein, Potassium Cocoyl Hydrolyzed Rice Protein, Potassium Cocoyl Hydrolyzed Silk, Potassium Cocoyl Hydrolyzed Soy Protein, Potassium Cocoyl Hydrolyzed Wheat Protein, Potassium Cocoyl Hydrolyzed Yeast Protein, Potassium Cocoyl PCA, Potassium Cocoyl Sarcosinate, Potassium Cocoyl Taurate, Potassium Cornate, Potassium Cyclocarboxypropyloleate, Potassium Dihydroxyethyl Cocamine Oxide Phosphate, Potassium Dimethicone PEG-7 Phosphate, Potassium Dodecylbenzenesulfonate, Potassium Hempseedate, Potassium Hydrogenated Cocoate, Potassium Hydrogenated Palmate, Potassium Hydrogenated Tallowate, Potassium Hydroxystearate, Potassium Isostearate, Potassium Lanolate, Potassium Laurate, Potassium Laureth-3 Carboxylate, Potassium Laureth-4 Carboxylate, Potassium Laureth-5 Carboxylate, Potassium Laureth-6 Carboxylate, Potassium Laureth-10 Carboxylate, Potassium Laureth Phosphate, Potassium Lauroyl Collagen Amino Acids, Potassium Lauroyl Glutamate, Potassium Lauroyl Hydrolyzed Collagen, Potassium Lauroyl Hydrolyzed Pea Protein, Potassium Lauroyl Hydrolyzed Soy Protein, Potassium Lauroyl PCA, Potassium Lauroyl Pea Amino Acids, Potassium Lauroyl Sarcosinate, Potassium Lauroyl Silk Amino Acids, Potassium

Lauroyl Wheat Amino Acids, Potassium Lauryl Phosphate, Potassium Lauryl Sulfate, Potassium Linoleate, Potassium Metaphosphate, Potassium Methyl Cocoyl Taurate, Potassium Myristate, Potassium Myristoyl Glutamate, Potassium Myristoyl Hydrolyzed Collagen, Potassium Octoxynol-12 Phosphate, Potassium Oleate, Potassium Oleoyl Hydrolyzed Collagen, Potassium Olivate, Potassium Olivoyl Hydrolyzed Oat Protein, Potassium Olivoyl Hydrolyzed Wheat Protein, Potassium Olivoyl/Lauroyl Wheat Amino Acids, Potassium Olivoyl PCA, Potassium Palmate, Potassium Palmitate, Potassium Palmitoyl Hydrolyzed Corn Protein, Potassium Palmitoyl Hydrolyzed Oat Protein, Potassium Palmitoyl Hydrolyzed Rice Protein, Potassium Palmitoyl Hydrolyzed Sweet Almond Protein, Potassium Palmitoyl Hydrolyzed Wheat Protein, Potassium Palm Kernelate, Potassium Peanutate, Potassium Rapeseedate, Potassium Ricinoleate, Potassium Safflowerate, Potassium Soyate, Potassium Stearate, Potassium Stearoyl Hydrolyzed Collagen, Potassium Tallate, Potassium Tallowate, Potassium Taurate, Potassium Taurine Laurate, Potassium Trideceth-3 Carboxylate, Potassium Trideceth-4 Carboxylate, Potassium Trideceth-7 Carboxylate, Potassium Trideceth-15 Carboxylate, Potassium Trideceth-19 Carboxylate, Potassium Trideceth-6 Phosphate, Potassium Trideceth-7 Phosphate, Potassium Tsubakiate, Potassium Undecylenate, Potassium Undecylenoyl Hydrolyzed Collagen, Potassium Undecylenoyl Hydrolyzed Rice Protein, PPG-30- Buteth-30, PPG-36-Buteth-36, PPG-38-Buteth-37, PPG-30-Capryleth-4 Phosphate, PPG-10 Cetyl Ether Phosphate, PPG-2 C9-11 Pareth-8, PPG-1-Deceth-5, PPG-3-Deceth-2 Carboxylic Acid, PPG-30 Ethylhexeth-4 Phosphate, PPG-20-Glycereth-30, PPG-2 Hydroxyethyl Coco/Isostearamide, PPG-2- Isodeceth-8, PPG-2-Isodeceth-10, PPG-2-Isodeceth-18, PPG-2-Isodeceth-25, PPG-4-Isodeceth-10, Propyltrimonium Hydrolyzed Collagen, Quaternium-24, Quaternium-52, Quaternium-87, Rapeseed Acid, Rice Bran Acid, Rice Oil Glycereth-8 Esters, Ricinoleamidopropyl Betaine, Ricinoleic Acid, Ricinoleth-40, Safflower Acid, Sapindus Oahuensis Fruit Extract, Saponaria Officinalis Root Powder, Saponins, Sekken-K, Sekken-Na/K, Sekken Soji, Sekken Soji-K, Sesame Oil Glycereth-8 Esters, Sesamidopropylamine Oxide, Sesamidopropyl Betaine, Shea Butteramidopropyl Betaine, Shea Butter Glycereth-8 Esters, Sodium Arachidate, Sodium Arganampohoacetate, Sodium Astrocaryum Murumuruate, Sodium Avocadoate, Sodium Babassuamphoacetate, Sodium Babassuate, Sodium Babassu Sulfate, Sodium Behenate, Sodium Bisglycol Ricinosulfosuccinate, Sodium Bis- Hydroxyethylglycinate Coco-Glucosides Crosspolymer, Sodium Bis-Hydroxyethylglycinate Lauryl- Glucosides Crosspolymer, Sodium Borageamidopropyl PG-Dimonium Chloride Phosphate, Sodium Butoxynol-12 Sulfate, Sodium Butylglucosides Hydroxypropyl Phosphate, Sodium C13-17 Alkane Sulfonate, Sodium C14-18 Alkane Sulfonate, Sodium C12-15 Alkoxypropyl Iminodipropionate, Sodium C10-16 Alkyl Sulfate, Sodium C11-15 Alkyl Sulfate, Sodium C12-13 Alkyl Sulfate, Sodium C12-15 Alkyl Sulfate, Sodium C12-18 Alkyl Sulfate, Sodium C16-20 Alkyl Sulfate, Sodium C9-22 Alkyl Sec Sulfonate, Sodium C14-17 Alkyl Sec Sulfonate, Sodium Caprate, Sodium Caproamphoacetate, Sodium Caproamphohydroxypropylsulfonate, Sodium Caproamphopropionate, Sodium Caproyl Methyltaurate, Sodium Caprylate, Sodium Capryleth-2 Carboxylate, Sodium Capryleth-9 Carboxylate, Sodium Capryloamphoacetate, Sodium Capryloamphohydroxypropylsulfonate, Sodium Capryloamphopropionate, Sodium Capryloyl Glutamate, Sodium Capryloyl Hydrolyzed Wheat

Protein, Sodium Caprylyl PG-Sulfonate, Sodium Caprylyl Sulfonate, Sodium Castorate, Sodium Ceteareth-13 Carboxylate, Sodium Cetearyl Sulfate, Sodium Ceteth-13 Carboxylate, Sodium Cetyl Sulfate, Sodium Cocamidopropyl PG-Dimonium Chloride Phosphate, Sodium Cocaminopropionate, Sodium Coceth Sulfate, Sodium Coceth-30 Sulfate, Sodium Cocoabutteramphoacetate, Sodium Cocoa Butterate, Sodium Cocoamphoacetate, Sodium Cocoamphohydroxypropylsulfonate, Sodium Cocoamphopropionate, Sodium Cocoate, Sodium Coco/Babassu/Andiroba Sulfate, Sodium Coco/Babassu Sulfate, Sodium Cocoglucosides Hydroxypropyl Phosphate, Sodium Cocoglucosides Hydroxypropylsulfonate, Sodium Coco-Glucoside Tartrate, Sodium Cocoglyceryl Ether Sulfonate, Sodium Coco/Hydrogenated Tallow Sulfate, Sodium Cocoiminodiacetate, Sodium Cocomonoglyceride Sulfate, Sodium Cocomonoglyceride Sulfonate, Sodium Coco PG-Dimonium Chloride Phosphate, Sodium Coco-Sulfate, Sodium Coco Sulfoacetate, Sodium Cocoyl Alaninate, Sodium Cocoyl Amino Acids, Sodium Cocoyl Collagen Amino Acids, Sodium Cocoyl Glutamate, Sodium Cocoyl Glutaminate, Sodium Cocoyl Glycinate, Sodium Cocoyl/Hydrogenated Tallow Glutamate, Sodium Cocoyl Hydrolyzed Collagen, Sodium Cocoyl Hydrolyzed Keratin, Sodium Cocoyl Hydrolyzed Rice Protein, Sodium Cocoyl Hydrolyzed Silk, Sodium Cocoyl Hydrolyzed Soy Protein, Sodium Cocoyl Hydrolyzed Sweet Almond Protein, Sodium Cocoyl Hydrolyzed Wheat Protein, Sodium Cocoyl Hydrolyzed Wheat Protein Glutamate, Sodium Cocoyl Isethionate, Sodium Cocoyl Methylaminopropionate, Sodium Cocoyl Oat Amino Acids, Sodium Cocoyl/Palmoyl/Sunfloweroyl Glutamate, Sodium Cocoyl Proline, Sodium Cocoyl Sarcosinate, Sodium Cocoyl Taurate, Sodium Cocoyl Threoninate, Sodium Cocoyl Wheat Amino Acids, Sodium C12-14 Olefin Sulfonate, Sodium C14-16 Olefin Sulfonate, Sodium C14- 18 Olefin Sulfonate, Sodium C16-18 Olefin Sulfonate, Sodium Cornamphopropionate, Sodium Cottonseedamphoacetate, Sodium C13-15 Pareth-8 Butyl Phosphate, Sodium C9-11 Pareth-6 Carboxylate, Sodium C11-15 Pareth-7 Carboxylate, Sodium C12-13 Pareth-5 Carboxylate, Sodium C12-13 Pareth-8 Carboxylate, Sodium C12-13 Pareth-12 Carboxylate, Sodium C12-15 Pareth-6 Carboxylate, Sodium C12-15 Pareth-7 Carboxylate, Sodium C12-15 Pareth-8 Carboxylate, Sodium C14-15 Pareth-8 Carboxylate, Sodium C12-14 Sec-Pareth-8 Carboxylate, Sodium C14-15 Pareth-PG Sulfonate, Sodium C12-13 Pareth-2 Phosphate, Sodium C13-15 Pareth-8 Phosphate, Sodium C9-15 Pareth-3 Sulfate, Sodium C10-15 Pareth Sulfate, Sodium C10-16 Pareth-2 Sulfate, Sodium C12-13 Pareth Sulfate, Sodium C12-15 Pareth Sulfate, Sodium C12-15 Pareth-3 Sulfate, Sodium C13-15 Pareth-3 Sulfate, Sodium C12-14 Sec-Pareth-3 Sulfate, Sodium C12-15 Pareth-3 Sulfonate, Sodium C12-15 Pareth-7 Sulfonate, Sodium C12-15 Pareth-15 Sulfonate, Sodium Deceth-2 Carboxylate, Sodium Deceth Sulfate, Sodium Decylbenzenesulfonate, Sodium Decylglucosides Hydroxypropyl Phosphate, Sodium Decylglucosides Hydroxypropylsulfonate, Sodium Dilaureth-7 Citrate, Sodium Dilaureth-10 Phosphate, Sodium Dilinoleamidopropyl PG-Dimonium Chloride Phosphate, Sodium Dilinoleate, Sodium Dioleth-8 Phosphate, Sodium Dodecylbenzenesulfonate, Sodium Ethyl 2- Sulfolaurate, Sodium Glyceryl Oleate Phosphate, Sodium Grapeseedamidopropyl PG-Dimonium Chloride Phosphate, Sodium Grapeseedamphoacetate, Sodium Grapeseedate, Sodium Hempseedamphoacetate, Sodium Hexeth-4 Carboxylate, Sodium Hydrogenated Cocoate,

Sodium Hydrogenated Cocoyl Methyl Isethionate, Sodium Hydrogenated Palmate, Sodium Hydrogenated Tallowate, Sodium Hydrogenated Tallowoyl Glutamate, Sodium Hydroxylauryldimonium Ethyl Phosphate, Sodium Hydroxypropyl Palm Kernelate Sulfonate, Sodium Hydroxypropylphosphate Decylglucoside Crosspolymer, Sodium Hydroxypropylphosphate Laurylglucoside Crosspolymer, Sodium Hydroxypropylsulfonate Cocoglucoside Crosspolymer, Sodium Hydroxypropylsulfonate Decylglucoside Crosspolymer, Sodium Hydroxypropylsulfonate Laurylglucoside Crosspolymer, Sodium Hydroxystearate, Sodium Isostearate, Sodium Isosteareth-6 Carboxylate, Sodium Isosteareth- 11 Carboxylate, Sodium Isostearoamphoacetate, Sodium Isostearoamphopropionate, Sodium N- Isostearoyl Methyltaurate, Sodium Laneth Sulfate, Sodium Lanolate, Sodium Lardate, Sodium Lauramido Diacetate, Sodium Lauraminopropionate, Sodium Laurate, Sodium Laureth-3 Carboxylate, Sodium Laureth-4 Carboxylate, Sodium Laureth-5 Carboxylate, Sodium Laureth-6 Carboxylate, Sodium Laureth-8 Carboxylate, Sodium Laureth-11 Carboxylate, Sodium Laureth-12 Carboxylate, Sodium Laureth-13 Carboxylate, Sodium Laureth-14 Carboxylate, Sodium Laureth-16 Carboxylate, Sodium Laureth-17 Carboxylate, Sodium Laureth Sulfate, Sodium Laureth-5 Sulfate, Sodium Laureth- 7 Sulfate, Sodium Laureth-8 Sulfate, Sodium Laureth-12 Sulfate, Sodium Laureth-40 Sulfate, Sodium Laureth-7 Tartrate, Sodium Lauriminodipropionate, Sodium Lauroamphoacetate, Sodium Lauroamphohydroxypropylsulfonate, Sodium Lauroampho PG-Acetate Phosphate, Sodium Lauroamphopropionate, Sodium Lauroyl Aspartate, Sodium Lauroyl Collagen Amino Acids, Sodium Lauroyl Glycine Propionate, Sodium Lauroyl Hydrolyzed Collagen, Sodium Lauroyl Hydrolyzed Silk, Sodium Lauroyl Hydroxypropyl Sulfonate, Sodium Lauroyl Isethionate, Sodium Lauroyl Methylaminopropionate, Sodium Lauroyl Methyl Isethionate, Sodium Lauroyl Millet Amino Acids, Sodium Lauroyl/Myristoyl Aspartate, Sodium Lauroyl Oat Amino Acids, Sodium Lauroyl Sarcosinate, Sodium Lauroyl Silk Amino Acids, Sodium Lauroyl Taurate, Sodium Lauroyl Wheat Amino Acids, Sodium Lauryl Diethylenediaminoglycinate, Sodium Lauryl Glucose Carboxylate, Sodium Laurylglucosides Hydroxypropyl Phosphate, Sodium Laurylglucosides Hydroxypropylsulfonate, Sodium Lauryl Glycol Carboxylate, Sodium Lauryl Hydroxyacetamide Sulfate, Sodium Lauryl Phosphate, Sodium Lauryl Sulfate, Sodium Lauryl Sulfoacetate, Sodium Linoleate, Sodium Macadamiaseedate, Sodium Mangoamphoacetate, Sodium Mangoseedate, Sodium/MEA Laureth-2 Sulfosuccinate, Sodium Methoxy PPG-2 Acetate, Sodium Methyl Cocoyl Taurate, Sodium Methyl Lauroyl Taurate, Sodium Methyl Myristoyl Taurate, Sodium Methyl Oleoyl Taurate, Sodium Methyl Palmitoyl Taurate, Sodium Methyl Stearoyl Taurate, Sodium Methyl 2-Sulfolaurate, Sodium Methyl 2- Sulfopalmitate, Sodium Methyltaurate Isopalmitamide, Sodium Methyltaurine Cocoyl Methyltaurate, Sodium Myreth Sulfate, Sodium Myristate, Sodium Myristoamphoacetate, Sodium Myristoyl Glutamate, Sodium Myristoyl Hydrolyzed Collagen, Sodium Myristoyl Isethionate, Sodium Myristoyl Sarcosinate, Sodium Myristyl Sulfate, Sodium Nonoxynol-6 Phosphate, Sodium Nonoxynol-9 Phosphate, Sodium Nonoxynol-1 Sulfate, Sodium Nonoxynol-3 Sulfate, Sodium Nonoxynol-4 Sulfate, Sodium Nonoxynol-6 Sulfate, Sodium Nonoxynol-8 Sulfate, Sodium Nonoxynol-10 Sulfate, Sodium Nonoxynol-25 Sulfate, Sodium Octoxynol-2 Ethane Sulfonate, Sodium Octoxynol-2 Sulfate, Sodium Octoxynol-6 Sulfate, Sodium Octoxynol-9 Sulfate, Sodi-

um Oleate, Sodium Oleoamphoacetate, Sodium Oleoamphohydroxypropylsulfonate, Sodium Oleoamphopropionate, Sodium Oleoyl Hydrolyzed Collagen, Sodium Oleoyl Isethionate, Sodium Oleth Sulfate, Sodium Oleyl Methyl Isethionate, Sodium Oleyl Sulfate, Sodium Olivamphoacetate, Sodium Olivate, Sodium Olivoyl Glutamate, Sodium Palmamphoacetate, Sodium Palmate, Sodium Palm Glyceride Sulfonate, Sodium Palmitate, Sodium Palmitoyl Hydrolyzed Collagen, Sodium Palmitoyl Hydrolyzed Wheat Protein, Sodium Palmitoyl Sarcosinate, Sodium Palm Kernelate, Sodium Palm Kerneloyl Isethionate, Sodium Palmoyl Glutamate, Sodium Passiflora Edulis Seedate, Sodium Peanutamphoacetate, Sodium Peanutate, Sodium PEG-6 Cocamide Carboxylate, Sodium PEG-8 Cocamide Carboxylate, Sodium PEG-4 Cocamide Sulfate, Sodium PEG-3 Lauramide Carboxylate, Sodium PEG-4 Lauramide Carboxylate, Sodium PEG-8 Palm Glycerides Carboxylate, Sodium Pentaerythrityl Hydroxypropyl Iminodiacetate Dendrimer, Sodium Propoxy PPG-2 Acetate, Sodium Rapeseedate, Sodium Ricebranamphoacetate, Sodium Ricinoleate, Sodium Ricinoleoamphoacetate, Sodium Rose Hipsamphoacetate, Sodium Rosinate, Sodium Safflowerate, Sodium Safflowerоyl Hydrolyzed Soy Protein, Sodium Sesameseedate, Sodium Sesamphoacetate, Sodium Sheabutteramphoacetate, Sodium Soyate, Sodium Soy Hydrolyzed Collagen, Sodium Stearate, Sodium Stearoamphoacetate, Sodium Stearoamphohydroxypropylsulfonate, Sodium Stearoamphopropionate, Sodium Stearoyl Casein, Sodium Stearoyl Glutamate, Sodium Stearoyl Hyaluronate, Sodium Stearoyl Hydrolyzed Collagen, Sodium Stearoyl Hydrolyzed Corn Protein, Sodium Stearoyl Hydrolyzed Silk, Sodium Stearoyl Hydrolyzed Soy Protein, Sodium Stearoyl Hydrolyzed Wheat Protein, Sodium Stearoyl Lactalbumin, Sodium Stearoyl Methyl Isethionate, Sodium Stearoyl Oat Protein, Sodium Stearoyl Pea Protein, Sodium Stearoyl Soy Protein, Sodium Stearyl Dimethyl Glycine, Sodium Stearyl Sulfate, Sodium Sunflowerseedamphoacetate, Sodium Surfactin, Sodium Sweetalmondamphoacetate, Sodium Sweet Almondate, Sodium Tallamphopropionate, Sodium Tallate, Sodium Tallowamphoacetate, Sodium Tallowate, Sodium Tallow Sulfate, Sodium Tamanuseedate, Sodium Taurate, Sodium Taurine Cocoyl Methyltaurate, Sodium Taurine Laurate, Sodium/TEA-Lauroyl Collagen Amino Acids, Sodium/TEA-Lauroyl Hydrolyzed Collagen, Sodium/TEA-Lauroyl Hydrolyzed Keratin, Sodium/TEA- Lauroyl Keratin Amino Acids, Sodium/TEA-Undecylenoyl Collagen Amino Acids, Sodium/TEA- Undecylenoyl Hydrolyzed Collagen, Sodium/TEA-Undecylenoyl Hydrolyzed Corn Protein, Sodium/TEA-Undecylenoyl Hydrolyzed Soy Protein, Sodium/TEA-Undecylenoyl Hydrolyzed Wheat Protein, Sodium Theobroma Grandiflorum Seedate, Sodium Trideceth-3 Carboxylate, Sodium Trideceth-4 Carboxylate, Sodium Trideceth-6 Carboxylate, Sodium Trideceth-7 Carboxylate, Sodium Trideceth-8 Carboxylate, Sodium Trideceth-12 Carboxylate, Sodium Trideceth-15 Carboxylate, Sodium Trideceth-19 Carboxylate, Sodium Trideceth Sulfate, Sodium Tridecylbenzenesulfonate, Sodium Tridecyl Sulfate, Sodium Trimethylolpropane Hydroxypropyl Iminodiacetate Dendrimer, Sodium Undeceth-5 Carboxylate, Sodium Undecylenate, Sodium Undecylenoamphoacetate, Sodium Undecylenoamphopropionate, Sodium Undecylenoyl Glutamate, Sodium Wheat Germamphoacetate, Sorbeth-160 Tristearate, Soy Acid, Soyamidopropylamine Oxide, Soyamidopropyl Betaine, Soybean Oil Glycereth-8 Esters, Stearamidopropylamine Oxide, Stearamidopropyl Betaine, Stearamine Oxide, Steareth-15, Steareth-16, Steareth-20,

Steareth-21, Steareth-25, Steareth-27, Steareth-30, Steareth- 40, Steareth-50, Steareth-80, Steareth-100, Steareth-2 Phosphate, Steareth-3 Phosphate, Stearic Acid, Stearoxypropyltrimonium Chloride, Stearoyl Glutamic Acid, Stearoyl Sarcosine, Stearyl Betaine, Stearyldimoniumhydroxypropyl Butylglucosides Chloride, Stearyldimoniumhydroxypropyl Decylglucosides Chloride, Stearyldimoniumhydroxypropyl Laurylglucosides Chloride, Sulfated Castor Oil, Sulfated Coconut Oil, Sulfated Glyceryl Oleate, Sulfated Olive Oil, Sulfated Peanut Oil, Sunfloweramide MEA, Sunflower Seed Acid, Sunflowerseedamidopropyl Hydroxyethyldimonium Chloride, Sunflower Seed Oil Glycereth-8 Esters, Tall Oil Acid, Tallow Acid, Tallowamidopropylamine Oxide, Tallowamidopropyl Betaine, Tallowamidopropyl Hydroxysultaine, Tallowamine Oxide, Tallow Betaine, Tallow Dihydroxyethyl Betaine, Tallowoyl Ethyl Glucoside, TEA-Abietoyl Hydrolyzed Collagen, TEA-C12-14 Alkyl Phosphate, TEA-C10-15 Alkyl Sulfate, TEA-C11-15 Alkyl Sulfate, TEA- C12-13 Alkyl Sulfate, TEA-C12-14 Alkyl Sulfate, TEA-C12-15 Alkyl Sulfate, TEA C14-17 Alkyl Sec Sulfonate, TEA-Canolate, TEA-Cocamide Diacetate, TEA-Cocoate, TEA-Coco-Sulfate, TEA-Cocoyl Alaninate, TEA-Cocoyl Glutamate, TEA-Cocoyl Glutaminate, TEA-Cocoyl Glycinate, TEA-Cocoyl Hydrolyzed Collagen, TEA-Cocoyl Hydrolyzed Soy Protein, TEA-Cocoyl Sarcosinate, TEA- Dimethicone PEG-7 Phosphate, TEA-Dodecylbenzenesulfonate, TEA-Hydrogenated Cocoate, TEA- Hydrogenated Tallowoyl Glutamate, TEA-Isostearate, TEA-Isostearoyl Hydrolyzed Collagen, TEA- Lauraminopropionate, TEA-Laurate, TEA-Laurate/Myristate, TEA-Laureth Sulfate, TEA-Lauroyl Collagen Amino Acids, TEA-Lauroyl Glutamate, TEA-Lauroyl Hydrolyzed Collagen, TEA-Lauroyl Keratin Amino Acids, TEA-Lauroyl Methylaminopropionate, TEA-Lauroyl/Myristoyl Aspartate, TEA- Lauroyl Sarcosinate, TEA-Lauryl Phosphate, TEA-Lauryl Sulfate, TEA-Myristaminopropionate, TEA- Myristate, TEA-Myristoyl Hydrolyzed Collagen, TEA-Oleate, TEA-Oleoyl Hydrolyzed Collagen, TEA- Oleoyl Sarcosinate, TEA-Oleyl Sulfate, TEA-Palmitate, TEA-Palm Kernel Sarcosinate, TEA-PEG-3 Cocamide Sulfate, TEA-Rosinate, TEA-Stearate, TEA-Tallate, TEA-T ridecylbenzenesulfonate, TEA- Undecylenate, TEA-Undecylenoyl Hydrolyzed Collagen, Tetramethyl Decynediol, Tetrasodium Dicarboxyethyl Stearyl Sulfosuccinamate, TIPA-Laureth Sulfate, TIPA-Lauryl Sulfate, TIPA-Myristate, TIPA-Stearate, Tocopheryl Phosphate, Trehalose Undecylenoate, TM-C12-15 Pareth-2 Phosphate, TM-C12-15 Pareth-6 Phosphate, TM-C12-15 Pareth-8 Phosphate, TM-C12-15 Pareth-10 Phosphate, Trideceth-20, Trideceth-50, Trideceth-3 Carboxylic Acid, Trideceth-4 Carboxylic Acid, Trideceth-7 Carboxylic Acid, Trideceth-8 Carboxylic Acid, Trideceth-15 Carboxylic Acid, Trideceth-19 Carboxylic Acid, Trideceth-10 Phosphate, Tridecylbenzenesulfonic Acid, Trilaureth-9 Citrate, Trimethylolpropane Hydroxypropyl Bis-Hydroxyethylamine Dendrimer, Trisodium Lauroampho PG-Acetate Chloride Phosphate, Undecanoic Acid, Undeceth-5 Carboxylic Acid, Undecylenamidopropylamine Oxide, Undecylenamidopropyl Betaine, Undecylenic Acid, Undecylenoyl Collagen Amino Acids, Undecylenoyl Glycine, Undecylenoyl Hydrolyzed Collagen, Undecylenoyl Wheat Amino Acids, Undecyl Glucoside, Wheat Germ Acid, Wheat Germamidopropylamine Oxide, Wheat Germamidopropyl Betaine, Yucca Schidigera Leaf/Root/Stem Extract, Yucca Schidigera Stem Extract, Zinc Coceth Sulfatea and Zinc Coco-Sulfate.

[0028] Preferred are one or more compounds selected from the group consisting of Sodium Laureth Sulfate, Cocamidopropyl Betaine, Sodium Cocoamphoacetate, CocoGlucoside and Ammonium Lauryl Sulfosuccinate.

[0029] The percentage content of surfactants in the preparations may be from 0.1 to 10% by weight and is preferably from 0.5 to 5% by weight, based on the preparation.

Oil bodies

[0030] Suitable oil bodies, which form constituents of the O/W emulsions, are, for example, Guerbet alcohols based on fatty alcohols having 6 to 18, preferably 8 to 10, carbon atoms, esters of linear C_6-C_{22}-fatty acids with linear or branched C_6-C_{22}-fatty alcohols or esters of branched C_6-C_{13}-carboxylic acids with linear or branched C_6-C_{22}-fatty alcohols, such as, for example, myristyl myristate, myristyl palmitate, myristyl stearate, myristyl isostearate, myristyl oleate, myristyl behenate, myristyl erucate, cetyl myristate, cetyl palmitate, cetyl stearate, cetyl isostearate, cetyl oleate, cetyl behenate, cetyl erucate, stearyl myristate, stearyl palmitate, stearyl stearate, stearyl isostearate, stearyl oleate, stearyl behenate, stearyl erucate, isostearyl myristate, isostearyl palmitate, isostearyl stearate, isostearyl isostearate, isostearyl oleate, isostearyl behenate, isostearyl oleate, oleyl myristate, oleyl palmitate, oleyl stearate, oleyl isostearate, oleyl oleate, oleyl behenate, oleyl erucate, behenyl myristate, behenyl palmitate, behenyl stearate, behenyl isostearate, behenyl oleate, behenyl behenate, behenyl erucate, erucyl myristate, erucyl palmitate, erucyl stearate, erucyl isostearate, erucyl oleate, erucyl behenate and erucyl erucate. Also suitable are esters of linear C_6-C_{22}-fatty acids with branched alcohols, in particular 2-ethylhexanol, esters of C_{18}-C_{38}- alkylhydroxy carboxylic acids with linear or branched C_6-C_{22}-fatty alcohols, in particular Dioctyl Malate, esters of linear and/or branched fatty acids with polyhydric alcohols (such as, for example, propylene glycol, dimerdiol or trimertriol) and/or Guerbet alcohols, triglycerides based on C_6 -C_{10}-fatty acids, liquid mono-/di-/triglyceride mixtures based on C_6-C_{18}-fatty acids, esters of C_6- C_{22}-fatty alcohols and/or Guerbet alcohols with aromatic carboxylic acids, in particular benzoic acid, esters of C_2- C_{12}-dicarboxylic acids with linear or branched alcohols having 1 to 22 carbon atoms or polyols having 2 to 10 carbon atoms and 2 to 6 hydroxyl groups, vegetable oils, branched primary alcohols, substituted cyclohexanes, linear and branched C_6-C_{22}-fatty alcohol carbonates, such as, for example, Dicaprylyl Carbonate (Cetiol® CC), Guerbet carbonates, based on fatty alcohols having 6 to 18, preferably 8 to 10, carbon atoms, esters of benzoic acid with linear and/or branched C_6-C_{22}-alcohols (e.g. Finsolv® TN), linear or branched, symmetrical or asymmetrical dialkyl ethers having 6 to 22 carbon atoms per alkyl group, such as, for example, dicaprylyl ether (Cetiol® OE), ring-opening products of epoxidized fatty acid esters with polyols, silicone oils (cyclomethicones, silicone methicone grades, etc.) and/or aliphatic or naphthenic hydrocarbons, such as, for example, squalane, squalene or dialkylcyclohexanes.

Emulsifiers

[0031] Other non-ionic or cationic surfactants may also be added to the preparations as emulsifiers, including for example:

- products of the addition of 2 to 30 mol ethylene oxide and/or 0 to 5 mol propylene oxide onto linear C_{8-22} fatty alcohols, onto C_{12-22} fatty acids and onto alkyl phenols containing 8 to 15 carbon atoms in the alkyl group;
- $C_{12/18}$ fatty acid monoesters and diesters of addition products of 1 to 30 mol ethylene oxide onto glycerol;
- glycerol mono- and diesters and sorbitan mono- and diesters of saturated and unsaturated fatty acids containing 6 to 22 carbon atoms and ethylene oxide addition products thereof;
- addition products of 15 to 60 mol ethylene oxide onto castor oil and/or hydrogenated castor oil;
- polyol esters and, in particular, polyglycerol esters such as, for example, polyglycerol polyricinoleate, polyglycerol poly-12-hydroxystearate or polyglycerol dimerate isostearate. Mixtures of compounds from several of these classes are also suitable;
- addition products of 2 to 15 mol ethylene oxide onto castor oil and/or hydrogenated castor oil;
- partial esters based on linear, branched, unsaturated or saturated $C_{6/22}$ fatty acids, ricinoleic acid and 12-hydroxystearic acid and glycerol, polyglycerol, pentaerythritol, -dipentaerythritol, sugar alcohols (for example sorbitol), alkyl glucosides (for example methyl glucoside, butyl glucoside, lauryl glucoside) and polyglucosides (for example cellulose);
- mono-, di and trialkyl phosphates and mono-, di- and/or tri-PEG-alkyl phosphates and salts thereof;
- wool wax alcohols;
- polysiloxane/polyalkyl polyether copolymers and corresponding derivatives;
- mixed esters of pentaerythritol, fatty acids, citric acid and fatty alcohol and/or mixed esters of C_{6-22} fatty acids, methyl glucose and polyols, preferably glycerol or polyglycerol,
- polyalkylene glycols and
- glycerol carbonate.

[0032] The addition products of ethylene oxide and/or propylene oxide onto fatty alcohols, fatty acids, alkylphenols, glycerol mono- and diesters and sorbitan mono- and diesters of

fatty acids or onto castor oil are known commercially available products. They are homologue mixtures of which the average degree of alkoxylation corresponds to the ratio between the quantities of ethylene oxide and/or propylene oxide and substrate with which the addition reaction is carried out. $C_{12/18}$ fatty acid monoesters and diesters of addition products of ethylene oxide onto glycerol are known as lipid layer enhancers for cosmetic formulations. The preferred emulsifiers are described in more detail as follows:

[0033] Partial glycerides. Typical examples of suitable partial glycerides are hydroxystearic acid monoglyceride, hydroxystearic acid diglyceride, isostearic acid monoglyceride, isostearic acid diglyceride, oleic acid monoglyceride, oleic acid diglyceride, ricinoleic acid monoglyceride, ricinoleic acid diglyceride, linoleic acid monoglyceride, linoleic acid diglyceride, linolenic acid monoglyceride, linolenic acid diglyceride, erucic acid monoglyceride, erucic acid diglyceride, tartaric acid monoglyceride, tartaric acid diglyceride, citric acid monoglyceride, citric acid diglyceride, malic acid monoglyceride, malic acid diglyceride and technical mixtures thereof which may still contain small quantities of triglyceride from the production process. Addition products of 1 to 30 and preferably 5 to 10 mol ethylene oxide onto the partial glycerides mentioned are also suitable.

[0034] Sorbitan esters. Suitable sorbitan esters are sorbitan monoisostearate, sorbitan sesquiisostearate, sorbitan diisostearate, sorbitan triisostearate, sorbitan monooleate, sorbitan sesquioleate, sorbitan dioleate, sorbitan trioleate, sorbitan monoerucate, sorbitan sesquierucate, sorbitan dierucate, sorbitan trierucate, sorbitan monoricinoleate, sorbitan sesquiricinoleate, sorbitan diricinoleate, sorbitan triricinoleate, sorbitan monohydroxystearate, sorbitan sesquihydroxystearate, sorbitan dihydroxystearate, sorbitan trihydroxystearate, sorbitan monotartrate, sorbitan sesquitartrate, sorbitan ditartrate, sorbitan tritartrate, sorbitan monocitrate, sorbitan sesquicitrate, sorbitan dicitrate, sorbitan tricitrate, sorbitan monomaleate, sorbitan sesquimaleate, sorbitan dimaleate, sorbitan trimaleate and technical mixtures thereof. Addition products of 1 to 30 and preferably 5 to 10 mol ethylene oxide onto the sorbitan esters mentioned are also suitable.

[0035] Polyglycerol esters. Typical examples of suitable polyglycerol esters are Polyglyceryl-2 Dipolyhydroxystearate (Dehymuls® PGPH), Polyglycerin-3-Diisostearate (Lameform® TGI), Polyglyceryl-4 Isostearate (Isolan® GI 34), Polyglyceryl-3 Oleate, Diisostearoyl Polyglyceryl-3 Diisostearate (Isolan® PDI), Polyglyceryl-3 Methylglucose Distearate (Tego Care® 450), Polyglyceryl-3 Beeswax (Cera Bellina®), Polyglyceryl-4 Caprate (Polyglycerol Caprate T2010/90), Polyglyceryl-3 Cetyl Ether (Chimexane® NL), Polyglyceryl-3 Distearate (Cremophor® GS 32) and Polyglyceryl Polyricinoleate (Admul® WOL 1403), Polyglyceryl Dimerate Isostearate and mixtures thereof. Examples of other suitable polyolesters are the mono-, di- and triesters of trimethylol propane or pentaerythritol with lauric acid, cocofatty acid, tallow fatty acid, palmitic acid, stearic acid, oleic acid, behenic acid and the like optionally reacted with 1 to 30 mol ethylene oxide.

[0036] Tetraalkyl ammonium salts. Cationically active surfactants comprise the hydrophobic high molecular group required for the surface activity in the cation by dissociation in aqueous solution. A group of important representatives of the cationic surfactants are the tetraalkyl ammonium salts of the general formula: $(R^1R^2R^3R^4N^+)$ X^-. Here R1 stands for C_1-C_8 alk(en)yl, R^2, R^3 and R^4, independently of each other, for alk(en)yl radicals having 1 to 22 carbon atoms. X is a counter ion, preferably selected from the group of the halides, alkyl sulfates and alkyl carbonates. Cationic surfactants, in which the nitrogen group is substituted with two long acyl groups and two short alk(en)yl groups, are particularly preferred.

[0037] Esterquats. A further class of cationic surfactants particularly useful as co-surfactants for the present invention is represented by the so-called esterquats. Esterquats are generally understood to be quaternised fatty acid triethanolamine ester salts. These are known compounds which can be obtained by the relevant methods of preparative organic chemistry. Reference is made in this connection to International patent application WO 91/01295 A1, according to which triethanolamine is partly esterified with fatty acids in the presence of hypophosphorous acid, air is passed through the reaction mixture and the whole is then quaternised with dimethyl sulphate or ethylene oxide. In addition, German patent DE 4308794 C1 describes a process for the production of solid esterquats in which the quaternisation of triethanolamine esters is carried out in the presence of suitable dispersants, preferably fatty alcohols.

[0038] Typical examples of esterquats suitable for use in accordance with the invention are products of which the acyl component derives from monocarboxylic acids corresponding to formula RCOOH in which RCO is an acyl group containing 6 to 10 carbon atoms, and the amine component is triethanolamine (TEA). Examples of such monocarboxylic acids are caproic acid, caprylic acid, capric acid and technical mixtures thereof such as, for example, so-called head-fractionated fatty acid. Esterquats of which the acyl component derives from monocarboxylic acids containing 8 to 10 carbon atoms, are preferably used. Other esterquats are those of which the acyl component derives from dicarboxylic acids like malonic acid, succinic acid, maleic acid, fumaric acid, glutaric acid, sorbic acid, pimelic acid, azelaic acid, sebacic acid and/or dodecanedioic acid, but preferably adipic acid. Overall, esterquats of which the acyl component derives from mixtures of monocarboxylic acids containing 6 to 22 carbon atoms, and adipic acid are preferably used. The molar ratio of mono and dicarboxylic acids in the final esterquat may be in the range from 1:99 to 99:1 and is preferably in the range from 50:50 to 90:10 and more particularly in the range from 70:30 to 80:20. Besides the quaternised fatty acid triethanolamine ester salts, other suitable esterquats are quaternized ester salts of mono-/dicarboxylic acid mixtures with diethanolalkyamines or 1,2-dihydroxypropyl dialkylamines. The esterquats may be obtained both from fatty acids and from the corresponding triglycerides in admixture with the corresponding dicarboxylic acids. One such process, which is intended to be representative of the relevant prior art, is proposed in European patent EP 0750606 B1. To produce the quaternised esters, the mixtures

of mono- and dicarboxylic acids and the triethanolamine - based on the available carboxyl functions - may be used in a molar ratio of 1.1:1 to 3:1. With the performance properties of the esterquats in mind, a ratio of 1.2:1 to 2.2:1 and preferably 1.5:1 to 1.9:1 has proved to be particularly advantageous. The preferred esterquats are technical mixtures of mono-, di- and triesters with an average degree of esterification of 1.5 to 1.9.

Superfatting agents and consistency factors

[0039] Superfatting agents may be selected from such substances as, for example, lanolin and lecithin and also polyethoxylated or acylated lanolin and lecithin derivatives, polyol fatty acid esters, monoglycerides and fatty acid alkanolamides, the fatty acid alkanolamides also serving as foam stabilizers.

[0040] The consistency factors mainly used are fatty alcohols or hydroxyfatty alcohols containing 12 to 22 and preferably 16 to 18 carbon atoms and also partial glycerides, fatty acids or hydroxyfatty acids. A combination of these substances with alkyl oligoglucosides and/or fatty acid N-methyl glucamides of the same chain length and/or polyglycerol poly-12-hydroxystearates is preferably used.

Thickening agents and rheology additives

[0041] Suitable thickeners are polymeric thickeners, such as Aerosil® types (hydrophilic silicas), polysaccharides, more especially xanthan gum, guar-guar, agar-agar, alginates and tyloses, carboxymethyl cellulose and hydroxyethyl cellulose, also relatively high molecular weight polyethylene glycol monoesters and diesters of fatty acids, polyacrylates (for example Carbopols® [Goodrich] or Synthalens® [Sigma]), polyacrylamides, polyvinyl alcohol and polyvinyl pyrrolidone, surfactants such as, for example, ethoxylated fatty acid glycerides, esters of fatty acids with polyols, for example pentaerythritol or trimethylol propane, narrow-range fatty alcohol ethoxylates and electrolytes, such as sodium chloride and ammonium chloride.

Polymers

[0042] Suitable cationic polymers are, for example, cationic cellulose derivatives such as, for example, the quaternized hydroxyethyl cellulose obtainable from Amerchol under the name of Polymer JR 400®, cationic starch, copolymers of diallyl ammonium salts and acrylamides, quaternized vinyl pyrrolidone/vinyl imidazole polymers such as, for example, Luviquat® (BASF), condensation products of polyglycols and amines, quaternized collagen polypeptides such as, for example, Lauryldimonium Hydroxypropyl Hydrolyzed Collagen (Lamequat® L, Grünau), quaternized wheat polypeptides, polyethyleneimine, cationic silicone polymers such as, for example, amodimethicone, copolymers of adipic acid and dimethylaminohydroxypropyl diethylenetriamine (Cartaretine®, Sandoz), copolymers of acrylic acid with dime-

thyl diallyl ammonium chloride (Merquat® 550, Chemviron), polyaminopolyamides and crosslinked water-soluble polymers thereof, cationic chitin derivatives such as, for example, quaternized chitosan, optionally in microcrystalline distribution, condensation products of dihaloalkyls, for example dibromobutane, with bis-dialkylamines, for example bis-dimethylamino-1,3-propane, cationic guar gum such as, for example, Jaguar®CBS, Jaguar®C-17, Jaguar®C-16 of Celanese, quaternized ammonium salt polymers such as, for example, Mirapol® A-15, Mirapol® AD-1, Mirapol® AZ-1 of Miranol and the various polyquaternium types (for example 6, 7, 32 or 37) which can be found in the market under the tradenames Rheocare® CC or Ultragel® 300.

[0043] Suitable anionic, zwitterionic, amphoteric and nonionic polymers are, for example, vinyl acetate/crotonic acid copolymers, vinyl pyrrolidone/vinyl acrylate copolymers, vinyl acetate/butyl maleate/isobornyl acrylate copolymers, methyl vinylether/maleic anhydride copolymers and esters thereof, uncrosslinked and polyol-crosslinked polyacrylic acids, acrylamidopropyl trimethylammonium chloride/acrylate copolymers, octylacrylamide/methyl methacrylate/tert.-butylaminoethyl methacrylate/2-hydroxypropyl methacrylate copolymers, polyvinyl pyrrolidone, vinyl pyrrolidone/vinyl acetate copolymers, vinyl pyrrolidone/dimethylaminoethyl methacrylate/vinyl caprolactam terpolymers and optionally derivatized cellulose ethers and silicones.

Pearlizing waxes

[0044] Suitable pearlising waxes are, for example, alkylene glycol esters, especially ethylene glycol distearate; fatty acid alkanolamides, especially cocofatty acid diethanolamide; partial glycerides, especially stearic acid monoglyceride; esters of polybasic, optionally hydroxy-substituted carboxylic acids with fatty alcohols containing 6 to 22 carbon atoms, especially long-chain esters of tartaric acid; fatty compounds, such as for example fatty alcohols, fatty ketones, fatty aldehydes, fatty ethers and fatty carbonates which contain in all at least 24 carbon atoms, especially laurone and distearylether; fatty acids, such as stearic acid, hydroxystearic acid or behenic acid, ring opening products of olefin epoxides containing 12 to 22 carbon atoms with fatty alcohols containing 12 to 22 carbon atoms and/or polyols containing 2 to 15 carbon atoms and 2 to 10 hydroxyl groups and mixtures thereof.

Silicones

[0045] Suitable silicones can be chosen from the group consisting of: Acefylline Methylsilanol Mannuronate, Acetylmethionyl Methylsilanol Elastinate Acrylates/Behenyl, Acrylate/Dimethicone Methacrylate Copolymer, Acrylates/Behenyl Methacrylate/Dimethicone Methacrylate Copolymer, Acrylates/Bis-Hydroxypropyl Dimethicone Crosspolymer, Acrylates/Dimethicone Copolymer, Acrylates/Dimethicone Methacrylate/Ethylhexyl Acrylate Copolymer, Acrylates/Dimethiconol Acrylate Copolymer, Acrylates/Ethylhexyl Acry-

late/Dimethicone Methacrylate Copolymer, Acrylates/Octylacrylamide/Diphenyl Amodimethicone Copolymer, Acrylates/Polytrimethylsiloxymethacrylate Copolymer, Acrylates/Propyl Trimethicone Methacrylate Copolymer, Acrylates/Stearyl Acrylate/Dimethicone Methacrylate Copolymer, Acrylates/Tridecyl Acrylate/Triethoxysilylpropyl Methacrylate/Dimethicone Methacrylate Copolymer, Acrylates/Trifluoropropylmethacrylate/Polytrimethyl Siloxymethacrylate Copolymer, Amino Bispropyl Dimethicone, Aminoethylaminopropyl Dimethicone, Aminopropyl Dimethicone, Aminopropyl Phenyl Trimethicone, Aminopropyl Triethoxysilane, Ammonium Dimethicone PEG-7 Sulfate, Amodimethicone, Amodimethicone Hydroxystearate, Amodimethicone/Silsesquioxane Copolymer, Ascorbyl Carboxydecyl Trisiloxane, Ascorbyl Methylsilanol Pectinate, Behenoxy Dimethicone, Behentrimonium Dimethicone PEG-8 Phthalate, Behenyl Dimethicone, Bisamino PEG/PPG-41/3 Aminoethyl PG-Propyl Dimethicone, Bis-Aminopropyl/Ethoxy Aminopropyl Dimethicone, Bis(Butylbenzoate) Diaminotriazine Aminopropyltrisiloxane, Bis-Butyldimethicone Polyglyceryl-3, Bis-Butyloxyamodimethicone/PEG-60 Copolymer, Bis(C13-15 Alkoxy) Hydroxybutamidoamodimethicone, Bis(C13-15 Alkoxy) PG- Amodimethicone, Bis-(C1-8 Alkyl Lauroyl Lysine Decylcarboxamide) Dimethicone, Bis-Cetyl Cetyl Dimethicone, Bis-Cetyl/PEG-8 Cetyl PEG-8 Dimethicone, Bis-Diphenylethyl Disiloxane, Bis-Ethyl Ethyl Methicone, Bis-Gluconamidoethylaminopropyl Dimethicone, Bis-Hydrogen Dimethicone, Bis- Hydroxyethoxypropyl Dimethicone Bis-Hydroxylauryl, Dimethicone/IPDI Copolymer, Bis- Hydroxy/Methoxy Amodimethicone, Bis-Hydroxypropyl Dimethicone Behenate, Bis-Hydroxypropyl Dimethicone/SMDI Copolymer, Bis-Isobutyl PEG-14/Amodimethicone Copolymer, Bis-Isobutyl PEG-15/Amodimethicone Copolymer, Bis-Isobutyl PEG/PPG-20/35/Amodimethicone Copolymer, Bis- Isobutyl PEG/PPG-10/7/Dimethicone Copolymer, Bis-Isobutyl PEG-24/PPG-7/Dimethicone Copolymer, Bis-PEG-1 Dimethicone, Bis-PEG-4 Dimethicone, Bis-PEG-8 Dimethicone, Bis-PEG-12 Dimethicone,Bis-PEG-20 Dimethicone, Bis-PEG-12 Dimethicone Beeswax, Bis-PEG-12 Dimethicone Candelillate, Bis-PEG-15 Dimethicone/IPDI Copolymer, Bis-PEG-15 Methyl Ether Dimethicone, Bis- PEG-18 Methyl Ether Dimethyl Silane, Bis-PEG/PPG-14/14 Dimethicone, Bis-PEG/PPG-15/5 Dimethicone, Bis-PEG/PPG-18/6 Dimethicone, Bis-PEG/PPG-20/20 Dimethicone, Bis-PEG/PPG- 16/16 PEG/PPG-16/16 Dimethicone, Bis-PEG/PPG-20/5 PEG/PPG-20/5 Dimethicone, Bisphenylhexamethicone, Bis-Phenylpropyl Dimethicone, Bispolyethylene Dimethicone, Bis- (Polyglyceryl-3 Oxyphenylpropyl) Dimethicone, Bis-(Polyglyceryl-7 Oxyphenylpropyl) Dimethicone, Bis-PPG-15 Dimethicone/IPDI Copolymer, Bis(PPG-7 Undeceneth-21) Dimethicone, Bis-Stearyl Dimethicone, Bis-Trimethoxysilylethyl Tetramethyldisiloxyethyl Dimethicone, Bis-Vinyldimethicone, Bis-Vinyl Dimethicone/Dimethicone Copolymer, Borage Seed Oil PEG-7 Dimethicone Esters, Butyl Acrylate/C6-14 Perfluoroalkylethyl Acrylate/Mercaptopropyl Dimethicone Copolymer, Butyl Acrylate/Hydroxypropyl Dimethicone Acrylate Copolymer, Butyl Dimethicone Acrylate/Cyclohexylmethacrylate/Ethylhexyl Acrylate Copolymer, Butyldimethicone Methacrylate/Methyl Methacrylate Crosspolymer, t-Butyl Dimethyl Silyl Grape Seed Extract, Butyl Polydimethylsiloxyl Ethylene/Propylene/Vinylnorbornene Copolymer, C6-8 Alkyl C3-6 Alkyl Glucoside Dimethicone, C20-24 Alkyl Dimethicone,C24-28 Alkyl Dimethicone, C26-28 Alkyl Dimethicone, C30-45 Alkyl

Dimethicone, C30-60 Alkyl Dimethicone, C32 Alkyl Dimethicone, C30-45 Alkyl Dimethicone/Polycyclohexene Oxide Crosspolymer, C26-28 Alkyldimethylsilyl Polypropylsilsesquioxane, C30-45 Alkyldimethylsilyl Polypropylsilsesquioxane, C20-24 Alkyl Methicone, C24-28 Alkyl Methicone, C26-28 Alkyl Methicone, C30-45 Alkyl Methicone, C20-28 Alkyl Perfluorodecylethoxy Dimethicone, C26-54 Alkyl Tetradecyl Dimethicone, Capryl Dimethicone, Caprylyl Dimethicone Ethoxy Glucoside, Caprylyl Methicone, Caprylyl Trimethicone, Carboxydecyl Trisiloxane, Castor Oil Bis-Hydroxypropyl Dimethicone Esters Cerotyl Dimethicone, Cetearyl Dimethicone Crosspolymer, Cetearyl Dimethicone/Vinyl Dimethicone Crosspolymer, Cetearyl Methicone, Cetrimonium Carboxydecyl PEG-8 Dimethicone, Cetrimonium Dimethicone PEG-7 Phthalate, Cetyl Behenyl Dimethicone, Cetyl Dimethicone, Cetyl Dimethicone/Bis-Vinyldimethicone Crosspolymer, Cetyl Hexacosyl Dimethicone, Cetyloxy Dimethicone, Cetyl PEG-8 Dimethicone, Cetyl PEG/PPG-15/15 Butyl Ether Dimethicone, Cetyl PEG/PPG-7/3 Dimethicone, Cetyl PEG/PPG-10/1 Dimethicone, Cetyl Triethylmonium Dimethicone PEG-8 Phthalate, Cetyl Triethylmonium Dimethicone PEG-8 Succinate, Copper Acetyl Tyrosinate Methylsilanol, Copper PCA Methylsilanol, C4-14 Perfluoroalkylethoxy Dimethicone, Cycloethoxymethicone, Cycloheptasiloxane, Cyclohexasiloxane, Cyclomethicone, Cyclopentasiloxane, Cyclophenylmethicone, Cyclotetrasiloxane,mCyclovinylmethicone, Cystine Bis-PG-Propyl Silanetriol, DEA PG-Propyl PEG/PPG-18/21 Dimethicone, Diisostearoyl Trimethylolpropane Siloxy Silicate, Dilauroyl Trimethylolpropane Siloxy Silicate, Dilinoleamidopropyl Dimethylamine Dimethicone PEG-7 Phosphate, Dimethicone, Dimethicone Crosspolymer, Dimethicone Crosspolymer-3, Dimethicone/Divinyldimethicone/Silsesquioxane Crosspolymer, Dimethicone Ethoxy Glucoside, Dimethicone Hydroxypropyl Trimonium Chloride, Dimethicone/Mercaptopropyl Methicone Copolymer, Dimethicone PEG-15 Acetate Dimethicone PEG-8 Adipate, Dimethicone PEG-7 Avocadoate, Dimethicone PEG-8 Avocadoate, Dimethicone PEG-8 Beeswax, Dimethicone PEG-8 Benzoate, Dimethicone PEG-8 Borageate, Dimethicone PEG-7 Cocoate, Dimethicone/PEG-10 Crosspolymer, Dimethicone/PEG-10/15 Crosspolymer, Dimethicone/PEG-15 Crosspolymer, Dimethicone PEG-7 Isostearate, Dimethicone PEG-8 Isostearate, Dimethicone PEG-7 Lactate, Dimethicone PEG-8 Lanolate, Dimethicone PEG-8 Laurate, Dimethicone PEG-8 Meadowfoamate, Dimethicone PEG-7 Octyldodecyl Citrate, Dimethicone PEG-7 Olivate, Dimethicone PEG-8 Olivate, Dimethicone PEG-7 Phosphate, Dimethicone PEG-8 Phosphate, Dimethicone PEG-10 Phosphate, Dimethicone PEG-7 Phthalate, Dimethicone PEG-8 Phthalate, Dimethicone PEG-8 Polyacrylate, Dimethicone PEG/PPG- 20/23 Benzoate, Dimethicone PEG/PPG-7/4 Phosphate, Dimethicone PEG/PPG-12/4 Phosphate, Dimethicone PEG-7 Succinate, Dimethicone PEG-8 Succinate, Dimethicone PEG-7 Sulfate, Dimethicone PEG-7 Undecylenate, Dimethicone PG-Diethylmonium Chloride, Dimethicone/Phenyl Vinyl Dimethicone Crosspolymer, Dimethicone/Polyglycerin-3 Crosspolymer, Dimethicone/PPG-20 Crosspolymer, Dimethicone Propylethylenediamine Behenate, Dimethicone Propyl PG-Betaine, Dimethicone/Silsesquioxane Copolymer, Dimethicone Silylate, Dimethicone?/inyl Dimethicone Crosspolymer, Dimethicone/Vinyltrimethylsiloxysilicate Crosspolymer, Dimethiconol, Dimethiconol Arginine, Dimethiconol Beeswax, Dimethiconol Behenate, Dimethiconol Borageate, Dimethiconol Candelillate, Dimethiconol Carnaubate, Dimethiconol

Cysteine, Dimethiconol Dhupa Butterate, Dimethiconol Fluoroalcohol Dilinoleic Acid, Dimethiconol Hydroxystearate, Dimethiconol Illipe Butterate, Dimethiconol/IPDI Copolymer, Dimethiconol Isostearate, Dimethiconol Kokum Butterate, Dimethiconol Lactate, Dimethiconol Meadowfoamate, Dimethiconol Methionine, Dimethiconol/Methylsilanol/Silicate Crosspolymer, Dimethiconol Mohwa Butterate, Dimethiconol Panthenol, Dimethiconol Sal Butterate, Dimethiconol/Silica Crosspolymer, Dimethiconol/Silsesquioxane Copolymer, Dimethiconol Stearate, Dimethiconol/Stearyl, Methicone/Phenyl Trimethicone Copolymer, Dimethoxysilyl Ethylenediaminopropyl Dimethicone, Dimethylaminopropylamido PCA Dimethicone, Dimethyl Oxobenzo Dioxasilane, Dimethylsilanol Hyaluronate, Dioleyl Tocopheryl Methylsilanol, Diphenyl Amodimethicone, Diphenyl Dimethicone, Diphenyl Dimethicone Crosspolymer Diphenyl Dimethicone?/inyl Diphenyl Dimethicone/Silsesquioxane Crosspolymer, Diphenylethyl Benzyloxy Dilsiloxane, Diphenylisopropyl Dimethicone, Diphenylsiloxy Phenyl/Propyl Trimethicone, Diphenylsiloxy Phenyl Trimethicone Disiloxane, Disodium Amodimethicone Disuccinamide, Disodium PEG-12 Dimethicone Sulfosuccinate, Disodium PEG-8 Lauryl Dimethicone Sulfosuccinate, Divinyldimethicone/Dimethicone Copolymer, Divinyldimethicone/Dimethicone Crosspolymer, Drometrizole Trisiloxane, Ethylhexyl Acrylate/VP/Dimethicone Methacrylate Copolymer, Ethyl Methicone, Ethyl Trisiloxane, Fluoro C2-8 Alkyldimethicone, Gluconamidopropyl Aminopropyl Dimethicone, 4-(2-Beta-Glucopyranosiloxy) Propoxy-2-Hydroxybenzophenone, Glyceryl Undecyl Dimethicone, Glycidoxy Dimethicone, Hexadecyl Methicone, Hexyl Dimethicone, Hexyl Methicone, Hexyltrimethoxysilane, Hydrogen Dimethicone, Hydrogen Dimethicone/Octyl Silsesquioxane Copolymer, Hydrolyzed Collagen PG-Propyl Dimethiconol, Hydrolyzed Collagen PG-Propyl Methylsilanediol, Hydrolyzed Collagen PG-Propyl Silanetriol, Hydrolyzed Keratin PG-Propyl Methylsilanediol, Hydrolyzed Sesame Protein PG-Propyl Methylsilanediol, Hydrolyzed Silk PG-Propyl Methylsilanediol, Hydrolyzed Silk PG-Propyl Methylsilanediol Crosspolymer, Hydrolyzed Soy Protein/Dimethicone PEG-7 Acetate, Hydrolyzed Soy Protein PG-Propyl Methylsilanediol, Hydrolyzed Vegetable Protein PG-Propyl Silanetriol, Hydrolyzed Wheat Protein/Cystine Bis-PG-Propyl Silanetriol Copolymer, Hydrolyzed Wheat Protein/Dimethicone PEG-7 Acetate, Hydrolyzed Wheat Protein/Dimethicone PEG-7 Phosphate Copolymer, Hydrolyzed Wheat Protein PG-Propyl Methylsilanediol, Hydrolyzed Wheat Protein PG-Propyl Silanetriol, Hydroxyethyl Acetomonium PG-Dimethicone, Hydroxypropyldimethicone, Hydroxypropyl Dimethicone Behenate, Hydroxypropyl Dimethicone Isostearate, Hydroxypropyl Dimethicone Stearate, Isobutylmethacrylate/Bis-Hydroxypropyl Dimethicone Acrylate Copolymer, Isobutylmethacrylate/Trifluoroethylmethacrylate/Bis-Hydroxypropyl Dimethicone Acrylate Copolymer, Isopentyl Trimethoxycinnamate Trisiloxane, Isopolyglyceryl-3 Dimethicone, Isopolyglyceryl-3 Dimethiconol, Isopropyl Titanium Triisostearate/Triethoxysilylethyl, Polydimethylsiloxyethyl Dimethicone Crosspolymer, Isostearyl Carboxydecyl PEG-8 Dimethicone, Lactoyl Methylsilanol Elastinate, Lauryl Dimethicone, Lauryl Dimethicone PEG-15 Crosspolymer, Lauryl Dimethicone PEG- 10 Phosphate, Lauryl Dimethicone/Polyglycerin-3 Crosspolymer, Lauryl Methicone, Lauryl PEG-8 Dimethicone, Lauryl PEG-10 Methyl Ether Dimethicone, Lauryl PEG-9 Polydimethylsiloxyethyl Dimethicone, Lauryl PEG/PPG-18/18 Methicone, Lauryl

Phenylisopropyl Methicone, Lauryl Phenylpropyl Methicone, Lauryl Polydimethylsiloxyethyl Dimethicone/Bis-Vinyldimethicone Crosspolymer, Lauryl Polyglyceryl-3 Polydimethylsiloxyethyl Dimethicone, Lauryl Trimethicone, Linoleamidopropyl PG-Dimonium Chloride Phosphate Dimethicone, Methacryloyl Propyltrimethoxysilane, Methicone, Methoxy Amodimethicone/Silsesquioxane Copolymer, Methoxycinnamidopropyl Polysilsesquioxane, Methoxycinnamoylpropyl Silsesquioxane Silicate, Methoxy PEG-13 Ethyl Polysilsesquioxane, Methoxy PEG/PPG-7/3 Aminopropyl Dimethicone, Methoxy PEG/PPG-25/4 Dimethicone, Methoxy PEG-10 Propyltrimethoxysilane, Methyleugenyl PEG- 8 Dimethicone, Methylpolysiloxane Emulsion, Methylsilanol Acetylmethionate, Methylsilanol Acetyltyrosine, Methylsilanol Ascorbate, Methylsilanol Carboxymethyl Theophylline, Methylsilanol Carboxymethyl Theophylline Alginate, Methylsilanol Elastinate, Methylsilanol Glycyrrhizinate, Methylsilanol Hydroxyproline, Methylsilanol Hydroxyproline Aspartate, Methylsilanol Mannuronate, Methylsilanol PCA, Methylsilanol PEG-7 Glyceryl Cocoate, Methylsilanol/Silicate Crosspolymer, Methylsilanol Spirulinate, Methylsilanol Tri-PEG-8 Glyceryl Cocoate, Methyl Trimethicone, Methyltrimethoxysilane, Myristylamidopropyl Dimethylamine Dimethicone PEG-7 Phosphate, Myristyl Methicone, Myristyl Trisiloxane, Nylon-611/Dimethicone Copolymer, PCA Dimethicone, PEG-7 Amodimethicone, PEG-8 Amodimethicone, PEG-8 Cetyl Dimethicone, PEG-3 Dimethicone, PEG-6 Dimethicone, PEG-7 Dimethicone, PEG-8 Dimethicone, PEG-9 Dimethicone, PEG-10 Dimethicone, PEG-12 Dimethicone, PEG-14 Dimethicone, PEG-17 Dimethicone, PEG-10 Dimethicone Crosspolymer, PEG-12 Dimethicone Crosspolymer, PEG-8 Dimethicone Dimer Dilinoleate, PEG-8 Dimethicone/Dimer Dilinoleic Acid Copolymer, PEG-10 Dimethicone/Vinyl Dimethicone Crosspolymer, PEG-8 Distearmonium Chloride PG-Dimethicone, PEG-10/Lauryl Dimethicone Crosspolymer, PEG- 15/Lauryl Dimethicone Crosspolymer, PEG-15/Lauryl Polydimethylsiloxyethyl Dimethicone Crosspolymer, PEG-8 Methicone, PEG-6 Methicone Acetate, PEG-6 Methyl Ether Dimethicone, PEG- 7 Methyl Ether Dimethicone, PEG-8 Methyl Ether Dimethicone, PEG-9 Methyl Ether Dimethicone, PEG-10 Methyl Ether Dimethicone, PEG-11 Methyl Ether Dimethicone, PEG-32 Methyl Ether Dimethicone, PEG-8 Methyl Ether Triethoxysilane, PEG-10 Nonafluorohexyl Dimethicone Copolymer, PEG-4 PEG-12 Dimethicone, PEG-8 PG-Coco-Glucoside Dimethicone, PEG-9 Polydimethylsiloxyethyl Dimethicone, PEG/PPG-20/22 Butyl Ether Dimethicone, PEG/PPG-22/22 Butyl Ether Dimethicone, PEG/PPG-23/23 Butyl Ether Dimethicone, PEG/PPG-24/18 Butyl Ether Dimethicone, PEG/PPG-27/9 Butyl Ether Dimethicone, PEG/PPG-3/10 Dimethicone, PEG/PPG-4/12 Dimethicone, PEG/PPG-6/4 Dimethicone, PEG/PPG-6/11 Dimethicone, PEG/PPG-8/14 Dimethicone, PEG/PPG-8/26 Dimethicone, PEG/PPG-10/2 Dimethicone, PEG/PPG-12/16 Dimethicone, PEG/PPG- 12/18 Dimethicone, PEG/PPG-14/4 Dimethicone, PEG/PPG-15/5 Dimethicone, PEG/PPG-15/15 Dimethicone, PEG/PPG-16/2 Dimethicone, PEG/PPG-16/8 Dimethicone, PEG/PPG-17/18 Dimethicone, PEG/PPG-18/6 Dimethicone, PEG/PPG-18/12 Dimethicone, PEG/PPG-18/18 Dimethicone, PEG/PPG-19/19 Dimethicone, PEG/PPG-20/6 Dimethicone, PEG/PPG-20/15 Dimethicone, PEG/PPG-20/20 Dimethicone, PEG/PPG-20/23 Dimethicone, PEG/PPG-20/29 Dimethicone, PEG/PPG-22/23 Dimethicone, PEG/PPG-22/24 Dimethicone, PEG/PPG-23/6 Dimethicone, PEG/PPG-25/25 Dimethicone, PEG/PPG-27/27 Dimethicone, PEG/PPG-30/10 Dimethicone,

PEG/PPG-25/25 Dimethicone/Acrylates Copolymer, PEG/PPG-20/22 Methyl Ether Dimethicone, PEG/PPG-24/24 Methyl Ether Glycidoxy Dimethicone, PEG/PPG-10/3 Oleyl Ether Dimethicone, PEG/PPG-5/3 Trisiloxane, PEG-4 Trifluoropropyl Dimethicone Copolymer, PEG-8 Trifluoropropyl Dimethicone Copolymer, PEG-10 Trifluoropropyl Dimethicone Copolymer, PEG-8 Trisiloxane, Perfluorocaprylyl riethoxysilylethyl Methicone, Perfluorononyl Dimethicone, Perfluorononyl Dimethicone/Methicone/Amodimethicone Crosspolymer, Perfluorononylethyl Carboxydecyl Behenyl Dimethicone, Perfluorononylethyl Carboxydecyl Hexacosyl Dimethicone, Perfluorononylethyl Carboxydecyl Lauryl/Behenyl Dimethicone, Perfluorononylethyl Carboxydecyl Lauryl Dimethicone, Perfluorononylethyl Carboxydecyl PEG-8 Dimethicone, Perfluorononylethyl Carboxydecyl PEG-10 Dimethicone, Perfluorononylethyl Dimethicone/Methicone Copolymer, Perfluorononylethyl PEG-8 Dimethicone, Perfluorononylethyl Stearyl Dimethicone, Perfluorooctylethyl/Diphenyl Dimethicone Copolymer, Perfluorooctylethyl Triethoxysilane, Perfluorooctylethyl Trimethoxysilane, Perfluorooctylethyl Trisiloxane, Perfluorooctyl Triethoxysilane, PG-Amodimethicone, Phenethyl Dimethicone, Phenethyl Disiloxane, Phenyl Dimethicone, Phenylisopropyl Dimethicone, Phenyl Methicone, Phenyl Methiconol, Phenylpropyldimethylsiloxysilicate, Phenylpropyl Ethyl Methicone, Phenyl Propyl Trimethicone, Phenyl Propyl Trimethicone/Diphenylmethicone, Phenyl Trimethicone, Platinum Divinyldisiloxane, Polyacrylate-6, Polydiethylsiloxane, Polydimethylsiloxyethyl Dimethicone/Bis-Vinyldimethicone Crosspolymer, Polydimethylsiloxyethyl Dimethicone/Methicone Copolymer, Polydimethylsiloxy PEG/PPG-24/19 Butyl Ether Silsesquioxane, Polydimethylsiloxy PPG- 13 Butyl Ether Silsesquioxane, Polyglyceryl-3 Disiloxane Dimethicone, Polyglyceryl-3/Lauryl Polydimethylsiloxyethyl Dimethicone Crosspolymer, Polyglyceryl-3 Polydimethylsiloxyethyl Dimethicone, Poly(Glycol Adipate)/Bis-Hydroxyethoxypropyl Dimethicone Copolymer, Polymethylsilsesquioxane, Polymethylsilsesquioxane/Trimethylsiloxysilicate, Polyphenylsilsesquioxane, Polypropylsilsesquioxane, Polysilicone-1, Polysilicone-2, Polysilicone-3, Polysilicone-4, Polysilicone-5, Polysilicone-6, Polysilicone-7, Polysilicone-8, Polysilicone-9, Polysilicone-10, Polysilicone-11, Polysilicone-12, Polysilicone-13, Polysilicone-14, Polysilicone-15, Polysilicone-16, Polysilicone-17, Polysilicone-18, Polysilicone-19, Polysilicone-20, Polysilicone-21, Polysilicone-18 Cetyl Phosphate, Polysilicone-1 Crosspolymer, Polysilicone-18 Stearate, Polyurethane-10, Potassium Dimethicone PEG-7 Panthenyl Phosphate, Potassium Dimethicone PEG- 7 Phosphate, PPG-12 Butyl Ether Dimethicone, PPG-2 Dimethicone, PPG-12 Dimethicone, PPG-27 Dimethicone, PPG-4 Oleth-10 Dimethicone, Propoxytetramethyl Piperidinyl Dimethicone, Propyl Trimethicone, Quaternium-80, Retinoxytrimethylsilane, Silanediol Salicylate, Silanetriol, Silanetriol Arginate, Silanetriol Glutamate, Silanetriol Lysinate, Silanetriol Melaninate, Silanetriol Trehalose Ether, Silica, Silica Dimethicone Silylate, Silica Dimethyl Silylate, Silica Silylate, Silicon Carbide, Silicone Quaternium-1, Silicone Quaternium-2, Silicone Quaternium-2 Panthenol Succinate, 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, SiliconeQuaternium-16, Silicone Quaternium-16/Glycidoxy Dimethicone Crosspolymer, Silicone Quaternium-17, Silicone Quaternium- 18, Silicone Quaternium-

19, Silicone Quaternium-20, Silicone Quaternium-21, Silicone Quaternium- 22, Silicone Quaternium-24, Silicone Quaternium-25, Siloxanetriol Alginate, Siloxanetriol Phytate, Simethicone, Sodium Carboxydecyl PEG-8 Dimethicone, Sodium Dimethicone PEG-7 Acetyl Methyltaurate, Sodium Hyaluronate Dimethylsilanol, Sodium Lactate Methylsilanol, Sodium Mannuronate Methylsilanol, Sodium PCA Methylsilanol, Sodium PG-Propyldimethicone Thiosulfate Copolymer, Sodium PG-Propyl Thiosulfate Dimethicone, Sodium Propoxyhydroxypropyl Thiosulfate Silica, Sorbityl Silanediol, Soy Triethoxysilylpropyldimonium Chloride, Stearalkonium Dimethicone PEG-8 Phthalate, Stearamidopropyl Dimethicone, Steardimonium Hydroxypropyl Panthenyl PEG-7 Dimethicone Phosphate Chloride, Steardimonium Hydroxypropyl PEG-7 Dimethicone Phosphate Chloride, Stearoxy Dimethicone, Stearoxymethicone/Dimethicone Copolymer, Stearoxytrimethylsilane, Stearyl Aminopropyl Methicone, Stearyl Dimethicone, Stearyl/Lauryl Methacrylate Crosspolymer, Stearyl Methicone, Stearyl Triethoxysilanek, Stearyl Trimethicone, Styrene/Acrylates/Dimethicone Acrylate Crosspolymer, Styrene/Acrylates/Dimethicone Copolymer, TEA-Dimethicone PEG-7 Phosphate, Tetrabutoxypropyl Trisiloxane, Tetramethyl Hexaphenyl Tetrasiloxane, Tetramethyl Tetraphenyl Trisiloxane, Tocopheryloxypropyl Trisiloxane, Trideceth-9 PG-Amodimethicone, Triethoxycaprylylsilane, Triethoxysilylethyl Dimethicone/Methicone Copolymer, Triethoxysilylethyl Polydimethylsiloxyethyl Dimethicone, Triethoxysilylethyl Polydimethylsiloxyethyl Hexyl Dimethicone, Triethoxysilylpropylcarbamoyl Ethoxypropyl Butyl Dimethicone, Trifluoromethyl C1-4 Alkyl Dimethicone, Trifluoropropyl Cyclopentasiloxane, Trifluoropropyl Cyclotetrasiloxane, Trifluoropropyl Dimethicone, Trifluoropropyl Dimethicone/PEG-10 Crosspolymer, Trifluoropropyl Dimethicone/Trifluoropropyl Divinyldimethicone Crosspolymer, Trifluoropropyl Dimethicone/Vinyl Trifluoropropyl, Dimethicone/Silsesquioxane Crosspolymer, Trifluoropropyl Dimethiconol, Trifluoropropyldimethyl/trimethylsiloxysilicate, Trifluoropropyl Methicone, Trimethoxycaprylylsilane, Trimethoxysilyl Dimethicone, Trimethyl Pentaphenyl Trisiloxane, Trimethylsiloxyamodimethicone, Trimethylsiloxyphenyl Dimethicone, Trimethylsiloxysilicate, Trimethylsiloxysilicate/Dimethicone Crosspolymer, Trimethylsiloxysilicate/Dimethiconol Crosspolymer, Trimethylsiloxysilylcarbamoyl Pullulan, Trimethylsilyl Hydrolyzed Conchiolin Protein PG-Propyl Methylsilanediol Crosspolymer, Trimethylsilyl Hydrolyzed Silk PG-Propyl Methylsilanediol Crosspolymer, Trimethylsilyl Hydrolyzed Wheat Protein PG-Propyl Methylsilanediol Crosspolymer, Trimethylsilyl Pullulan, Trimethylsilyl Trimethylsiloxy Glycolate, Trimethylsilyl Trimethylsiloxy Lactate, Trimethylsilyl Trimethylsiloxy Salicylate, Triphenyl Trimethicone, Trisiloxane, Tris-Tributoxysiloxymethylsilane, Undecylcrylene Dimethicone, Vinyl Dimethicone, Vinyl Dimethicone/Lauryl Dimethicone Crosspolymer, Vinyl Dimethicone/Methicone Silsesquioxane Crosspolymer, Vinyldimethyl/Trimethylsiloxysilicate Stearyl Dimethicone Crosspolymer, VP/Dimethiconylacrylate/Polycarbamyl/Polyglycol Ester, Zinc Carboxydecyl Trisiloxane and Zinc Dimethicone PEG-8 Succinate and mixtures thereof.

[0046] More preferably the silicones to be contained in the mixture according to the inventions are Dimethicone, Cyclomethicone, Phenyl Trimethicone, Cyclohexasiloxane and Cyclo-

pentasiloxane. A detailed overview of suitable volatile silicones can be found in **Todd et al. in Cosm. Toil. 91, 27 (1976)**.

Waxes and stabilizers

[0047] Besides natural oils used, waxes may also be present in the preparations, more especially natural waxes such as, for example, candelilla wax, carnauba wax, Japan wax, espartograss wax, cork wax, guaruma wax, rice oil wax, sugar cane wax, ouricury wax, montan wax, beeswax, shellac wax, spermaceti, lanolin (wool wax), uropygial fat, ceresine, ozocerite (earth wax), petrolatum, paraffin waxes and microwaxes; chemically modified waxes (hard waxes) such as, for example, montan ester waxes, sasol waxes, hydrogenated jojoba waxes and synthetic waxes such as, for example, polyalkylene waxes and polyethylene glycol waxes.

[0048] Metal salts of fatty acids such as, for example, magnesium, aluminium and/or zinc stearate or ricinoleate may be used as stabilizers.

Primary sun protection filters

[0049] Primary sun protection filters in the context of the invention are, for example, organic substances (light filters) which are liquid or crystalline at room temperature and which are capable of absorbing ultraviolet radiation and of releasing the energy absorbed in the form of longer-wave radiation, for example heat.

[0050] The formulations according to the invention advantageously contain at least one UV-A filter and/or at least one UV-B filter and/or a broadband filter and/or at least one inorganic pigment. Formulations according to the invention preferably contain at least one UV-B filter or a broadband filter, more particularly preferably at least one UV-A filter and at least one UV-B filter.

[0051] The UV filters cited below which can be used within the context of the present invention are preferred but naturally are not limiting. UV filters which are preferably used are selected from the group consisting of one, two, three, four, five or more of the following species:

UV FILTER	TRADEMARK	SUPPLIER
4-Methylbenzylidene Camphor	Neo Heliopan® MBC	Symrise
Anthranilic Acid Menthyl Ester	Neo Heliopan® MA	Symrise
Benzophenone-3	Neo Heliopan® BB	Symrise
Benzophenone-4	Uvinul® MS40	BASF
Bis-Ethylhexyloxyphenol Methoxyphenyl Triazine	Neo Heliopan® BMT	Symrise
Butyl Methoxydibenzoylmethane	Neo Heliopan® 357	Symrise
Diethylamine Hydroxybenzoyl Hexyl Benzoate	Uvinul® A Plus	BASF

Diethylhexyl Butylamido Triazone	Iscotrizinol	3V
Disodium Phenyl Dibenimidazole Sulfonic Acid	Neo Heliopan® AP	Symrise
Ethylhexyl Methoxycinnamate	Neo Heliopan® AV	Symrise
Ethylhexyl salicylate	Neo Heliopan® OS	Symrise
Ethylhexyl triazone	Uvinul® T150	BASF
Homoslate	Neo Heliopan® HMS	Symrise
Isoamyl p-Methoxycinnamate	Neo Heliopan® E 1000	Symrise
Methoxypropylamine Cyclohexenylidene Ethoxyethyl-cyanoacetate		BASF
Methylene Bis-Benzotriazolyl Tetramethylbutylphhenol (nano)	Tinosorb® M	BASF
Octocrylene	Neo Heliopan® 303	Symrise
Phenylbenzimidazole Sulfonic Acid	Neo Heliopan® Hydro	Symrise
Phenylene Bis-Diphenyltriazone	Triasorb	Pierre Fabre
Polysilicone-15	Parsol®SLX	DSM
Tris-Biphenyl Triazine (nano)	Tinosorb® A2B	BASF

[0052] In a preferred embodiment the sun protection filter forming component (ii) represents a blend of UV-A- and UV-B-filters selected from the group consisting of homosalate, octocrylene, bis-ethylhexyloxyphenol methoxyphenyl triazine, butyl methoxydibenzoylmethane, ethylhexyl salicylate and mixtures thereof. Particular preferred is a blend of all these filters which is commercially available in the market under the trademark NeoHeliopan® Flat (SYMRISE), which also subject to WO 2020 088778 A1.

[0053] Suitable pigments encompass oxides of titanium (TiO_2), zinc (ZnO), iron (Fe_2O_3), zirconium (ZrO_2), silicon (SiO_2), manganese (e.g. MnO), aluminium (Al_2O_3), cerium (e.g. Ce_2O_3) and/or mixtures thereof.

[0054] In a further preferred embodiment a formulation according to the invention contains a total amount of sunscreen agents, i.e. in particular UV filters and/or inorganic pigments (UV filtering pigments) so that the formulation according to the invention has a light protection factor of greater than or equal to 5 and up to 50. Such formulations according to the invention are particularly suitable for protecting the skin and hair.

Secondary sun protection filters

[0055] Besides the groups of primary sun protection factors mentioned above, secondary sun protection factors of the antioxidant type may also be used. Secondary sun protection factors of the antioxidant type interrupt the photochemical reaction chain which is initiated when UV rays penetrate into the skin. Typical examples are amino acids (for example glycine,

histidine, tyrosine, tryptophane) and derivatives thereof, imidazoles (for example urocanic acid) and derivatives thereof, peptides, such as D,L-carnosine, D-carnosine, L-carnosine and derivatives thereof (for example anserine), carotinoids, carotenes (for example alpha-carotene, beta-carotene, lycopene) and derivatives thereof, chlorogenic acid and derivatives thereof, liponic acid and derivatives thereof (for example dihydroliponic acid), aurothioglucose, propylthiouracil and other thiols (for example thioredoxine, glutathione, cysteine, cystine, cystamine and glycosyl, N-acetyl, methyl, ethyl, propyl, amyl, butyl and lauryl, palmitoyl, oleyl, alpha-linoleyl, cholesteryl and glyceryl esters thereof) and their salts, dilaurylthiodipropionate, distearylthiodipropionate, thiodipropionic acid and derivatives thereof (esters, ethers, peptides, lipids, nucleotides, nucleosides and salts) and sulfoximine compounds (for example butionine sulfoximines, homocysteine sulfoximine, butionine sulfones, penta-, hexa- and hepta-thionine sulfoximine) in very small compatible dosages, also (metal) chelators (for example alpha-hydroxyfatty acids, palmitic acid, phytic acid, lactoferrine), alpha-hydroxy acids (for example citric acid, lactic acid, malic acid), humic acid, bile acid, bile extracts, bilirubin, biliverdin, EDTA, EGTA and derivatives thereof, unsaturated fatty acids and derivatives thereof (for example linoleic acid, oleic acid), folic acid and derivatives thereof, ubiquinone and ubiquinol and derivatives thereof, vitamin C and derivatives thereof (for example ascorbyl palmitate, Mg ascorbyl phosphate, ascorbyl acetate), tocopherols and derivatives (for example vitamin E acetate), vitamin A and derivatives (vitamin A palmitate) and coniferyl benzoate of benzoin resin, rutinic acid and derivatives thereof, glycosyl rutin, ferulic acid, furfurylidene glucitol, carnosine, butyl hydroxytoluene, butyl hydroxyanisole, nordihydroguaiac resin acid, nordihydroguaiaretic acid, trihydroxybutyrophenone, uric acid and derivatives thereof, mannose and derivatives thereof, superoxide dismutase, titanium dioxide (for example dispersions in ethanol), zinc and derivatives thereof (for example ZnO, $ZnSO_4$), selenium and derivatives thereof (for example selenium methionine), stilbenes and derivatives thereof (for example stilbene oxide, trans-stilbene oxide) and derivatives of these active substances suitable for the purposes of the invention (salts, esters, ethers, sugars, nucleotides, nucleosides, peptides and lipids).

[0056] Advantageous inorganic secondary light protection pigments are finely dispersed metal oxides and metal salts which are also mentioned in **WO 2005 123101 A1**. The total quantity of inorganic pigments, in particular hydrophobic inorganic micro-pigments in the finished cosmetic preparation according to the present invention is advantageously from 0.1 to 30% by weight, preferably 0.5 to 10.0% by weight, in each case based on the total weight of the preparation.

[0057] Also preferred are particulate UV filters or inorganic pigments, which can optionally be hydrophobed, can be used, such as the oxides of titanium (TiO_2), zinc (ZnO), iron (Fe_2O_3), zirconium (ZrO_2), silicon (SiO_2), manganese (e.g. MnO), aluminium (Al_2O_3), cerium (e.g. Ce_2O_3) and/or mixtures thereof.

Biogenic agents and antioxidants

[0058] Biogenic active substances include, for example, tocopherol, tocopherol acetate, tocopherol palmitate, ascorbic acid, (deoxy)ribonucleic acid and its fragmentation products, β-glucans, retinol, bisabolol, allantoin, phytantriol, panthenol, AHA acids, amino acids, ceramides, pseudoceramides, essential oils, plant extracts, such as such as prunus extract, bambaranus extract and vitamin complexes.

[0059] Antioxidants interrupt the photochemical reaction chain which is triggered when UV radiation penetrates the skin. Typical examples are amino acids (e.g. glycine, histidine, tyrosine, tryptophan) and their derivatives, imidazoles (e.g. urocanic acid) and their derivatives, peptides like D,L-carnosine, D-carnosine, L-carnosine and their derivatives (e.g. anserine), carotenoids, carotenes (e.g. -carotene, lycopene) and their derivates, chlorogenic acid and its derivatives, lipoic acid and its derivatives (e.g. dihydrolic acid), aurothioglucose, propylthiouracil and other thiols (e.g. thioredoxin, glutathione, cysteine, cystine, cystamin and their glycosyl, N-acetyl, methyl, ethyl, propyl, amyl, butyl and lauryl, palmitoyl, oleyl, linoleyl, cholesteryl and glyceryl esters) and their salts Dilaurylthiodipropionate, ditearylthiodipropionate, thiodipropionic acid and its derivatives (esters, ethers, peptides, lipids, nucleotides, nucleosides and salts) as well as sulfoximine compounds (e.g. (e.g. buthionine sulfoximines, homocysteine sulfoximines, butionine sulfones, penta-, hexa-, heptathionine sulfoximines) in very low tolerated dosages (e.g. pmol to mol/kg), furthermore (metal) chelators (e.g. hydroxy fatty acids, palmitic acid, phytinic acid, lactoferrin), hydroxy acids (e.g. (e.g. citric acid, lactic acid, malic acid), humic acid, gallic acid, bile extracts, bilirubin, biliverdin, EDTA, EGTA and their derivatives, unsaturated fatty acids and their derivatives (e.g. linolenic acid, linoleic acid, oleic acid), folic acid and its derivatives, ubiquinone and ubiquinol and their derivatives, vitamin C and its derivatives (e.g. ascorbyl palmitate, Mg-ascorbyl phosphate, ascorbylacetate), tocopherols and derivatives (e.g. vitamin E acetate), vitamin A and derivates (vitamin A palmitate) as well as conifer aryl benzoate of benzoic resin, rutinic acid and its derivatives, glycosylrutin, ferulic acid, furfurylidene glucitol, carnosine, butyl hydroxytoluene, butylhydroxyanisole, nordihydroguaiac resin acid, nordihydroguajaretic acid, trihydroxybutyrophenone, uric acid and its derivatives, mannose and its derivatives, superoxide dismutase, zinc and its derivatives (e.g. e.g. ZnO, ZnSO4) selenium and its derivatives (e.g. selenium-methionine), stilbenes and their derivatives (e.g. styrene oxide, trans-stilbene oxide) and the derivatives suitable for the invention (salts, esters, ethers, sugars, nucleotides, nucleosides, peptides and lipids) of these named active substances.

Actives modulating hair pigmentation

[0060] Preferred active ingredients for hair lightening are selected from the group consisting of: kojic acid (5-hydroxy-2-hydroxymethyl-4-pyranone), kojic acid derivatives, preferably kojic acid dipalmitate, arbutin, ascorbic acid, ascorbic acid derivatives, preferably magnesium ascorbyl phosphate, hydroquinone, hydroquinone derivatives, resorcinol, resorcinol derivatives, preferably 4-alkylresorcinols and 4-(1-phenylethyl)1,3-dihydroxybenzene (phenylethyl resorcinol), cyclohexylcarbamates (preferably one or more cyclohexyl carbamates disclosed in WO 2010/122178 and WO 2010/097480), sulfur-containing molecules, preferably glutathione or cysteine, alpha-hydroxy acids (preferably citric acid, lactic acid, malic acid), salts and esters thereof, N-acetyl tyrosine and derivatives, undecenoyl phenylalanine, gluconic acid, chromone derivatives, preferably aloesin, flavonoids, 1-aminoethyl phosphinic acid, thiourea derivatives, ellagic acid, nicotinamide (niacinamide), zinc salts, preferably zinc chloride or zinc gluconate, thujaplicin and derivatives, triterpenes, preferably maslinic acid, sterols, preferably ergosterol, benzofuranones, preferably senkyunolide, vinyl guiacol, ethyl guiacol, dionic acids, preferably octode-

cene dionic acid and/or azelaic acid, inhibitors of nitrogen oxide synthesis, preferably L-nitroarginine and derivatives thereof, 2,7-dinitroindazole or thiocitrulline, metal chelators (preferably alpha-hydroxy fatty acids, phytic acid, humic acid, bile acid, bile extracts, EDTA, EGTA and derivatives thereof), retinoids, soy milk and extract, serine protease inhibitors or lipoic acid or other synthetic or natural active ingredients for skin and hair lightening, the latter preferably used in the form of an extract from plants, preferably bearberry extract, rice extract, papaya extract, turmeric extract, mulberry extract, bengkoang extract, nutgrass extract, liquorice root extract or constituents concentrated or isolated therefrom, preferably glabridin or licochalcone A, artocarpus extract, extract of rumex and ramulus species, extracts of pine species (pinus), extracts of vitis species or stilbene derivatives isolated or concentrated therefrom, saxifrage extract, scutelleria extract, grape extract and/or microalgae extract, in particular Tetraselmis suecica Extract.

[0061] Advantageous skin and hair tanning active ingredients in this respect are substrates or substrate analogues of tyrosinase such as L-tyrosine, N-acetyl tyrosine, L-DOPA or L-dihydroxyphenylalanine, xanthine alkaloids such as caffeine, theobromine and theophyl-line and derivatives thereof, proopiomelanocortin peptides such as ACTH, alpha-MSH, peptide analogues thereof and other substances which bind to the melanocortin receptor, peptides such as Val-Gly-Val-Ala-Pro-Gly, Lys-lle- Gly-Arg-Lys or Leu-lle-Gly-Lys, purines, pyrimidines, folic acid, copper salts such as copper gluconate, chloride or pyrrolidonate, 1,3,4-oxadiazole-2-thiols such as 5-pyrazin-2-yl-1,3,4-oxadiazole-2-thiol, curcumin, zinc diglycinate (Zn(Gly)2), manganese(ll) bicarbonate complexes ("pseudocatalases") as described for example in EP 0 584 178, tetrasubstituted cyclohexene deriva-tives as described for example in WO 2005/032501 , isoprenoids as described in WO 2005/102252 and in WO 2006/010661 , melanin derivatives such as Melasyn-100 and MelanZe, diacyl glycerols, aliphatic or cyclic diols, psoralens, prostaglandins and ana-logues thereof, activators of adenylate cyclase and compounds which activate the transfer of melanosomes to keratinocytes such as serine proteases or agonists of the PAR-2 receptor, extracts of plants and plant parts of the chrysanthemum species, sanguisorba species, walnut extracts, urucum extracts, rhubarb extracts, microalgae extracts, in particular Isochrysis galbana, trehalose, erythru-lose and dihydroxyacetone. Flavonoids which bring about skin and hair tinting or brown-ing (e.g. quercetin, rhamnetin, kaempferol, fisetin, genistein, daidzein, chrysin and api-genin, epicatechin, diosmin and diosmetin, morin, quercitrin, naringenin, hesperidin, phloridzin and phloretin) can also be used.

[0062] The amount of the aforementioned examples of additional active ingredients for the modulation of skin and hair pigmentation (one or more compounds) in the products according to the invention is then preferably 0.00001 to 30 wt.%, preferably 0.0001 to 20 wt.%, particularly preferably 0.001 to 5 wt.%, based on the total weight of the preparation.

Hair growth activators or inhibitors

[0063] Formulations and products according to the present invention may also comprise one or more hair growth activators, i.e. agents to stimulate hair growth. Hair growth activators are preferably selected from the group consisting of pyrimidine derivatives such as 2,4-diaminopyrimidine-3-oxide (Aminexil), 2,4-diamino-6-piperidinopyrimidine-3-oxide (Minoxidil) and derivatives thereof, 6-amino-1,2-dihydro-1-hydroxy-2-imino-4-piperidinopyrimidine and its derivatives, xanthine alkaloids such as caffeine, theobromine and theophylline and

derivatives thereof, quercetin and derivatives, dihydroquercetin (taxifolin) and derivatives, potassium channel openers, antiandrogenic agents, synthetic or natural 5-reductase inhibitors, nicotinic acid esters such as tocopheryl nicotinate, benzyl nicotinate and C1-C6 alkyl nicotinate, proteins such as for example the tripeptide Lys-Pro-Val, diphencypren, hormons, finasteride, dutasteride, flutamide, bicalutamide, pregnane derivatives, progesterone and its derivatives, cyproterone acetate, spironolactone and other diuretics, calcineurin inhibitors such as FK506 (Tacrolimus, Fujimycin) and its derivatives, Cyclosporin A and derivatives thereof, zinc and zinc salts, polyphenols, procyanidins, proanthocyanidins, phytosterols such as for example beta-sitosterol, biotin, eugenol, (±)-beta-citronellol, panthenol, glycogen for example from mussels, extracts from microorganisms, algae, plants and plant parts of for example the genera dandelion (Leontodon or Taraxacum), Orthosiphon, Vitex, Coffea, Paullinia, Theobroma, Asiasarum, Cucurbita or Styphnolobium, Serenoa repens (saw palmetto), Sophora flavescens, Pygeum africanum, Panicum miliaceum, Cimicifuga racemosa, Glycine max, Eugenia caryophyllata, Cotinus coggygria, Hibiscus rosa-sinensis, Camellia sinensis, Ilex paraguariensis, Isochrysis galbana, licorice, grape, apple, barley or hops or/nd hydrolysates from rice or wheat.

[0064] Alternatively, formulations and products according to the present invention may comprise one or more hair growth inhibitors (as described above), i.e. agents to reduce or prevent hair growth. Hair growth inhibitors are preferably selected from the group consisting of activin, activin derivatives or activin agonists, ornithine decarboxylase inhibitors such as alpha-difluoromethylornithine or pentacyclic triterpenes like for example ursolic acid, betulin, betulinic acid, oleanolic acid and derivatives thereof, 5alpha-reductase inhibitors, androgen receptor antagonists, S-adenosylmethionine decarboxylase inhibitors, gamma-glutamyl transpeptidase inhibitors, transglutaminase inhibitors, soybean-derived serine protease inhibitors, extracts from microorganisms, algae, different microalgae or plants and plant parts of for example the families Leguminosae, Solanaceae, Graminae, Asclepiadaceae or Cucurbitaceae, the genera Chondrus, Gloiopeltis, Ceramium, Durvillea, Glycine max, Sanguisorba officinalis, Calendula officinalis, Hamamelis virginiana, Arnica montana, Salix alba, Hypericum perforatum or Gymnema sylvestre.

Physiological cooling and warming agents

[0065] The physiological cooling agents are preferably selected from the group formed by the species depicted in the following table (including their optical isomers and racemates):

Component	FEMA/GRAS	Trademark	Supplier
Menthol			
Menthol glyceryl acetal	3807	Frescolat® MGA	Symrise AG
Menthol glyceryl ketal	3808	Frescolat® MGA	Symrise AG
Menthol menthyl ether			

Menthone glyceryl acetal			
Menthone glyceryl ketal			
Menthoxy-1,2-propandiol	3784		
Menthoxy-2-methyl-1,2-propanediol	3849		
Menthyl acetate		SymFresh® RF	Symrise AG
Menthyl ethylene glycol carbonate	3805	Frescolat® MGC	Symrise AG
Menthyl formiate			
Menthyl glutamate	4006		
Menthyl glycerol carbonate			
Menthyl hydroxy isobutyrate			
Menthyl isobutyrate			
Menthyl lactate		Frescolat® ML	Symrise AG
Menthyl malonate			
Menthyl methyl ether			
Menthyl N-ethyl oxamate			
Menthyl propylene glycol carbonate	3806	Frescolat® MPC	Symrise AG
Menthyl pyroglutamate			
Menthyl-(2-methoxy)acetate			
Menthyl-(2-methoxyethoxy)acetate			
Menthyl succinate	3810		
O-Menthyl succinic acid ester amide			
O-Menthyl succinic acid ester-NN-(dimethyl)amide			
Menthane carboxylic acid-N-(4-cyanophenyl)amide			
Menthane carboxylic acid-N-(4-cyanomethyl-phenyl)amide			
Menthane carboxylic acid-N-ethylamide (WS-3)			
(WS-4)			
N^{α}-(menthane carbonyl) glycinc ethylester (WS-5)			
(1R,2S,5R)-N-(4-Methoxyphenyl)-5-methyl-2-(1-isopropyl)cyclohexane-carboxamide (WS-12)			
(WS-14)			
2,3-dimethyl-2-(2-propyl)-butyric acid-N-methylamide (WS23)			
Isopulegol acetate			
p-Menthane-3,8-diol			

Cubebol			
3-Methyl-2(1-pyrrolidinyl)-2-cyclopentene-1-one)			
Tetrahydropyrimidine-2-one			
N-(2-(pyridin-2-yl)ethyl)-3-p-menthane-carboxamide			
[(1R,2S,5R)-2-isopropyl-5-methyl-cyclohexyl] 2-(ethylamino)-2-oxo-acetate		X Cool	Symrise AG

[0066] Physiological warming agents can be selected from the group consisting of capsaicin, dihydrocapsaicin, nordihydrocapsaicin, homocapsaicin, homodihydrocapsaicin nonivamid, and chili extracts.

Anti-inflammatory agents

[0067] Suitable anti-inflammatory agents may be selected from the group formed by:

(i) steroidal anti-inflammatory substances of the corticosteroid type, in particular hydrocortisone, hydrocortisone derivatives such as hydrocortisone 17-butyrate, dexamethasone, dexamethasone phosphate, methylprednisolone or cortisone,

(ii) non-steroidal anti-inflammatory substances, in particular oxicams such as piroxicam or tenoxicam, salicylates such as aspirin, disalcid, solprin or fendosal, acetic acid derivatives such as diclofenac, fenclofenac, indomethacin, sulindac, tolmetin or clindanac, fenamates such as mefenamic, meclofenamic, flufenamic or niflumic, propionic acid derivatives such as ibuprofen, naproxen or benoxaprofen, pyrazoles such as phenylbutazone, oxyphenylbutazone, febrazone or azapropazone,

(iii) natural or naturally occuring anti-inflammatory substances or substances that alleviate reddening and/or itching, in particular extracts or fractions from camomile, Aloe vera, Commiphora species, Rubia species, willow, willow-herb, oats, calendula, arnica, St John's wort, honeysuckle, rosemary, Passiflora incarnata, witch hazel, ginger or Echinacea, or single active compounds thereof,

(iv) histamine receptor antagonists, serine protease inhibitors (e.g. of Soy extracts), TRPV1 antagonists (e.g. 4-t-Butylcyclohexanol), NK1 antagonists (e.g. Aprepitant, Hydroxyphenyl Propamidobenzoic Acid), cannabinoid receptor agonists (e.g. Palmitoyl Ethanolamine) and TRPV3 antagonists.

Anti-microbial agents

[0068] Suitable anti-microbial agents are, in principle, all substances effective against Gram-positive bacteria, such as, for example, 4- hydroxybenzoic acid and its salts and esters, N-(4-chlorophenyl)-N'-(3,4- dichlorophenyl)urea, 2,4,4'-trichloro-2'-hydroxy-diphenyl ether (triclosan), 4-chloro-3,5-dimethyl-phenol, 2,2'-methylenebis(6-bromo-4- chlorophenol), 3-methyl-4-(1-methylethyl)phenol, 2-benzyl-4-chloro-phenol, 3-(4-chlorophenoxy)-1,2-propanediol, 3-iodo-2-propynyl butylcarbamate, chlorhexidine, 3,4,4'-trichlorocarbanilide (TTC), antibacterial fragrances, thymol, thyme oil, eugenol, oil of cloves, menthol, mint oil, farnesol, phenoxyethanol, glycerol monocaprate, glycerol monocaprylate, glycerol monolaurate (GML), diglycerol monocaprate (DMC), salicylic acid N-alkylamides, such as, for example, n-octylsalicylamide or n- decylsalicylamide.

Enzyme inhibitors

[0069] Suitable enzyme inhibitors are, for example, esterase inhibitors. These are preferably trialkyl citrates, such as trimethyl citrate, tripropyl citrate, triisopropyl citrate, tributyl citrate and, in particular, triethyl citrate (Hydagen CAT). The substances inhibit enzyme activity, thereby reducing the formation of odour. Other substances which are suitable esterase inhibitors are sterol sulfates or phosphates, such as, for example, lanosterol, cholesterol, campesterol, stigmasterol and sitosterol sulfate or phosphate, dicarboxylic acids and esters thereof, such as, for example, glutaric acid, monoethyl glutarate, diethyl glutarate, adipic acid, monoethyl adipate, diethyl adipate, malonic acid and diethyl malonate, hydroxycarboxylic acids and esters thereof, such as, for example, citric acid, malic acid, tartaric acid or diethyl tartrate, and zinc glycinate.

Odour absorbers and antiperspirant active agents

[0070] Suitable odour absorbers are substances which are able to absorb and largely retain odour-forming compounds. They lower the partial pressure of the individual components, thus also reducing their rate of diffusion. It is important that perfumes must remain unimpaired in this process. Odour absorbers are not effective against bacteria. They comprise, for example, as main constituent, a complex zinc salt of ricinoleic acid or specific, largely odour-neutral fragrances which are known to the person skilled in the art as "fixatives", such as, for example, extracts of labdanum or styrax or certain abietic acid derivatives. The odour masking agents are fragrances or perfume oils, which, in addition to their function as odour masking agents, give the deodorants their respective fragrance note. Perfume oils which may be mentioned are, for example, mixtures of natural and synthetic fragrances. Natural fragrances are extracts from flowers, stems and leaves, fruits, fruit peels, roots, woods, herbs and grasses, needles and branches, and resins and balsams. Also suitable are animal products, such as, for example, civet and castoreum. Typical synthetic fragrance compounds are products of the

ester, ether, aldehyde, ketone, alcohol, and hydrocarbon type. Fragrance compounds of the ester type are, for example, benzyl acetate, p-tert-butylcyclohexyl acetate, linalyl acetate, phenylethyl acetate, linalyl benzoate, benzyl formate, allyl cyclohexylpropionate, styrallyl propionate and benzyl salicylate. The ethers include, for example, benzyl ethyl ether, and the aldehydes include, for example, the linear alkanals having 8 to 18 carbon atoms, citral, citronellal, citronellyloxyacetaldehyde, cyclamen aldehyde, hydroxycitronellal, lilial and bourgeonal, the ketones include, for example, the ionones and methyl cedryl ketone, the alcohols include anethole, citronellol, eugenol, isoeugenol, geraniol, linaool, phenylethyl alcohol and terpineol, and the hydrocarbons include mainly the terpenes and balsams. Preference is, however, given to using mixtures of different fragrances which together produce a pleasing fragrance note. Essential oils of relatively low volatility, which are mostly used as aroma components, are also suitable as perfume oils, e.g. sage oil, camomile oil, oil of cloves, melissa oil, mint oil, cinnamon leaf oil, linden flower oil, juniperberry oil, vetiver oil, olibanum oil, galbanum oil, labdanum oil and lavandin oil. Preference is given to using bergamot oil, dihydromyrcenol, lilial, lyral, citronellol, phenylethyl alcohol, α-hexylcinnamaldehyde, geraniol, benzylacetone, cyclamen aldehyde, linalool, boisambrene forte, ambroxan, indole, hedione, sandelice, lemon oil, mandarin oil, orange oil, allyl amyl glycolate, cyclovertal, lavandin oil, clary sage oil, β-damascone, geranium oil bourbon, cyclohexyl salicylate, Vertofix coeur, iso-E-super, Fixolide NP, evernyl, iraldein gamma, phenylacetic acid, geranyl acetate, benzyl acetate, rose oxide, romilat, irotyl and floramat alone or in mixtures.

[0071] Suitable astringent antiperspirant active ingredients are primarily salts of aluminium, zirconium or of zinc. Such suitable antihydrotic active ingredients are, for example, aluminium chloride, aluminium chlorohydrate, aluminium dichlorohydrate, aluminium sesquichlorohydrate and complex compounds thereof, e.g. with 1,2- propylene glycol, aluminium hydroxyallantoinate, aluminium chloride tartrate, aluminium zirconium trichlorohydrate, aluminium zirconium tetrachlorohydrate, aluminium zirconium pentachlorohydrate and complex compounds thereof, e.g. with amino acids, such as glycine.

Film formers and anti-dandruff agents

[0072] Standard film formers are, for example, chitosan, microcrystalline chitosan, quaternized chitosan, polyvinyl pyrrolidone, vinyl pyrrolidone/vinyl acetate copolymers, polymers of the acrylic acid series, quaternary cellulose derivatives, collagen, hyaluronic acid and salts thereof and similar compounds.

[0073] Suitable antidandruff agents are Pirocton Olamin (1-hydroxy-4-methyl-6-(2,4,4-trimethylpentyl)-2-(1H)-pyridinone monoethanolamine salt), Baypival® (Climbazole), Ketoconazol® (4-acetyl-1-{4-[2-(2,4-dichlorophenyl) r-2-(1H-imidazol-1-ylmethyl)-1,3-dioxylan-c-4-ylmethoxyphenyl}-piperazine, ketoconazole, elubiol, selenium disulfide, colloidal sulfur, sulfur polyethylene glycol sorbitan monooleate, sulfur ricinol polyethoxylate, sulfur tar distillate, salicylic acid (or in combination with hexachlorophene), undecylenic acid, monoethano-

lamide sulfosuccinate Na salt, Lamepon® UD (protein/undecylenic acid condensate), zinc pyrithione, aluminium pyrithione and magnesium pyrithione/dipyrithione magnesium sulfate.

Carriers and hydrotropes

[0074] Preferred cosmetics carrier materials are solid or liquid at 25°C and 1013 mbar (including highly viscous substances) as for example glycerol, 1,2-propylene glycol, 1,2-butylene glycol, 1,3-propylene glycol, 1,3-butylene glycol, ethanol, water and mixtures of two or more of said liquid carrier materials with water. Optionally, these preparations according to the invention may be produced using preservatives or solubilizers. Other preferred liquid carrier substances, which may be a component of a preparation according to the invention are selected from the group consisting of oils such as vegetable oil, neutral oil and mineral oil.

[0075] Preferred solid carrier materials, which may be a component of a preparation according to the invention are hydrocolloids, such as starches, degraded starches, chemically or physically modified starches, dextrins, (powdery) maltodextrins (preferably with a dextrose equivalent value of 5 to 25, preferably of 10 – 20), lactose, silicon dioxide, glucose, modified celluloses, gum arabic, ghatti gum, traganth, karaya, carrageenan, pullulan, curdlan, xanthan gum, gellan gum, guar flour, carob bean flour, alginates, agar, pectin and inulin and mixtures of two or more of these solids, in particular maltodextrins (preferably with a dextrose equivalent value of 15 – 20), lactose, silicon dioxide and/or glucose.

[0076] In addition, hydrotropes, for example ethanol, isopropyl alcohol or polyols, may be used to improve flow behaviour. Suitable polyols preferably contain 2 to 15 carbon atoms and at least two hydroxyl groups. The polyols may contain other functional groups, more especially amino groups, or may be modified with nitrogen. Typical examples are

- glycerol;
- alkylene glycols such as, for example, ethylene glycol, diethylene glycol, propylene glycol, butylene glycol, hexylene glycol and polyethylene glycols with an average molecular weight of 100 to 1000 Dalton;
- technical oligoglycerol mixtures with a degree of self-condensation of 1.5 to 10, such as for example technical diglycerol mixtures with a diglycerol content of 40 to 50% by weight;
- methylol compounds such as, in particular, trimethylol ethane, trimethylol propane, trimethylol butane, pentaerythritol and dipentaerythritol;
- lower alkyl glucosides, particularly those containing 1 to 8 carbon atoms in the alkyl group, for example methyl and butyl glucoside;
- sugar alcohols containing 5 to 12 carbon atoms, for example sorbitol or mannitol,
- sugars containing 5 to 12 carbon atoms, for example glucose or sucrose;

- amino sugars, for example glucamine;
- dialcoholamines, such as diethanolamine or 2-aminopropane-1,3-diol.

Preservatives and/or product protection agents

[0077] Suitable preservatives are listed in Appendix 6, Parts A and B of the Kosmetikverordnung ("Cosmetics Directive").

[0078] Suitable species can be selected from the group consisting of preservatives selected from the group consisting of benzoic acid and para-hydroxybenzoic acid, their esters and salts, benzyl benzoate, propionic acid and its salts, salicylic acid and its salts, 2,4-hexadienoic acid (sorbic acid) and its salts, levulinic acid and its salts, anisic acid and its salts, perillic acid and its salts, cinnamic acid and its salts, formaldehyde and paraformaldehyde, 4-hydroxy benzaldehyde, ortho-, meta-, and para-anisic aldehyde, cinnamic aldehyde, cinnamic alcohol, 2-hydroxybiphenyl ether and its salts, 2-zinc-sulfidopyridine N-oxide, inorganic sulfites and bisulfites, sodium iodate, chlorobutanolum, 4-ethylmercury-(II)5-amino-1,3-bis(2-hydroxybenzoic acid), its salts and esters, dehydracetic acid, formic acid, 1,6-bis(4-amidino-2-bromophenoxy)-n-hexane and its salts, the sodium salt of ethylmercury-(II)-thiosalicylic acid, phenylmercury and its salts, 10-undecylenic acid and its salts, 5-amino-1,3-bis(2-ethylhexyl)-5-methyl-hexahydropyrimidine, 5-bromo-5-nitro-1,3-dioxane, 2-bromo-2-nitro-1,3-propanediol, 2,4-dichlorobenzyl alcohol, N-(4-chlorophenyl)-N'-(3,4-dichlorophenyl)-urea, 4-chloro-m-cresol, 2,4,4'-trichloro-2'-hydroxy-diphenyl ether, 4-chloro-3,5-dimethylphenol, 1,1'-methylene-bis(3-(1-hydroxymethyl-2,4-dioximidazolidin-5-yl)urea), poly-(hexamethylenediguanide) hydrochloride, (Benzyloxymethoxy)-methanol hexamethylenetetramine, 1-(3-chloroallyl)-3,5,7-triaza-1-azonia-adamantane chloride, 1-(4-chlorophenoxy)-1-(1H-imidazol-1-yl)-3,3-dimethyl-2-butanone, 1,3-bis-(hydroxymethyl)-5,5-dimethyl-2,4-imidazolidinedione, 1,2-dibromo-2,4-dicyanobutane, 2,2'-methylene-bis(6-bromo-4-chlorophenol), bromochlorophene, mixture of 5-chloro-2-methyl-3(2H)-isothiazolinone, 2-methyl-3(2H)-isothiazolinone and with magnesium chloride and magnesium nitrate, 2-Octyl-2H-isothiazol-3-one, 1,2-benzisothiazol-3(2*H*)-one, 2-benzyl-4-chlorophenol, 3-(4-Chlorphenoxy)-1,2-propanediol (Chlorphenesin), 2-chloroacetamide, chlorhexidine, chlorhexidine acetate, chlorhexidine gluconate, chlorhexidine hydrochloride, N-alkyl(C_{12}-C_{22})trimethyl-ammonium bromide and chloride, 4,4-dimethyl-1,3-oxazolidine, N-hydroxymethyl-N-(1,3-di(hydroxymethyl)-2,5-dioxoimidazolidin-4-yl)-N'-hydroxy-methylurea, 1,6-bis(4-amidino-phenoxy)-n-hexane and its salts, glutaraldehyde, 5-ethyl-1-aza-3,7-dioxabicyclo(3.3.0)octane, 3-(4-chlorophenoxy)-1,2-propanediol, hyamines, alkyl-(C_8-C_{18})-dimethyl-benzyl-ammonium chloride, alkyl-(C_8-C_{18})-dimethyl-benzylammonium bromide, alkyl-(C_8-C_{18})-dimethyl-benzyl-ammonium saccharinate, benzyl hemiformal, 3-iodo-2-propynyl butylcarbamate, sodium hydroxymethyl-aminoacetate or sodium hydroxymethyl-aminoacetate, imidazolidinylurea, diazolidinylurea, sodium hydroxymethylglycinate, DMDM hydantoin, Tropolone, (Ethylendioxy)dimethanol, 2-Brom-2-(brommethyl)pentandinitril, N-(3-Aminopropyl)-N-

dodecylpropan-1,3-diamin, α,α',α''-trimethyl-1,3,5-triazine-1,3,5(2H,4H,6H)-triethanol, pyridine-2-thiol-1-oxide, sodium salt, Tetrahydro-1,3,4,6-tetrakis(hydroxymethyl)imidazo[4,5-d]imidazol-2,5(1H,3H)-dion, 1,3-bis(hydroxymethyl) -1-(1,3,4-tris(hydroxy-methyl)-2,5-dioxoimidazolidin-4-yl)urea (Diazolidinyl Urea), 1,3-Bis(hydroxy-methyl)-5,5-dimethylimidazolidine-2,4-dione, 3-Acetyl-2-hydroxy-6-methyl-4*H*-pyran-4-one, cetyl pyridium chloride, caprylhydroxamic acid, sorbohydroxamic acid and their mixtures; 1,3-propanediol, methyl propanediol, 1,2-pentanediol, 1,2-hexanediol, 1,2-octanediol, 1,2-decanediol, 1,5-pentanediol, 1,6-hexanediol, 1,8-octanediol, 1,2-decanediol, ethylhexylglycerin, hexoxy-propan-1,2-diol, heptoxy- propan-1,2-diol, octoxy-propan-1,2-diol, 3-phenoxy-propan-1,2-diol, 3-benzyloxy-propan-1,2-diol, 3-phenylethyloxy-propan-1,2-diol, 3-phenylpropyloxy-propan-1,2-diol, 3-methylbenzyloxy-propan-1,2-diol, sorbitan caprylate, triclosan, climbazole, Octopirox (1-hydroxy-4-methyl-6-(2,4,4-trimethylpentyl)-2(1H)-pyridone, 2-aminoethanol), chitosan, farnesol, 2-butyloctanoic acid, 2-Benzylheptan-1-ol, glycerol monolaurate, bis(2-pyridylthio)zinc 1,1'-dioxide, N,N'-(decane-1,10-diyldipyridin-1-yl-4-ylidene)-dioctan-1-amine dihydrochloride (octenidine dihydrochloride), thymol, eugenol, benzyl alcohol, 2-phenyethyl alcohol, 3-phenyl propanol, 2-phenoxyethanol, 1-phenoxy-propan-2-ol, 3-phenoxypropanol, benzyloxymethanol, 4-hydroxyacetophenone and mixtures thereof.

Perfume oils

[0079] Suitable perfume oils are mixtures of natural and synthetic perfumes. Natural perfumes include the extracts of blossoms (lily, lavender, rose, jasmine, neroli, ylang-ylang), stems and leaves (geranium, patchouli, petitgrain), fruits (anise, coriander, caraway, juniper), fruit peel (bergamot, lemon, orange), roots (nutmeg, angelica, celery, cardamom, costus, iris, calmus), woods (pinewood, sandalwood, guaiac wood, cedarwood, rosewood), herbs and grasses (tarragon, lemon grass, sage, thyme), needles and branches (spruce, fir, pine, dwarf pine), resins and balsams (galbanum, elemi, benzoin, myrrh, olibanum, opoponax). Animal raw materials, for example civet and beaver, may also be used.

Fragrances with woody odor

[0080] Suitable fragrances with woody odor are selected from the group consisting of:

INCI	Tradename	Supplier
(Ethoxymethoxy)cyclododecane	AMBERWOOD®	Symrise
β-2,2,3-Tetramethylcyclopent-3-ene-1-butanol	BRAHMANOL®	Symrise
alpha-Ethyl-2,2,6-trimethylcyclohexanepropanol	MADRANOL®	Symrise
Octahydro-4,7-methano-1H-indenemethyl	MYROSE® ACETATE	Symrise

acetate		
1,1-Dimethoxy-cyclododecane	PALISANDAL®	Symrise
Methoxycyclododecane	PALISANDIN®	Symrise
(2E)-2-Ethyl-4-(2,2,3)-trimethylcyclopent-3-en-1-yl) but-2-en-1-ol	SANDRANOL®	Symrise
2H-2,4a-Methanonaphthalene, 1,3,4,5,6,7-hexahydro-7-methoxy-1,1,5,5-tetramethyl-	SYMROXANE®	Symrise
4-Methyl-4-phenylpentan-2-one	VETIKON®	Symrise
4-Cyclohexyl-4-methylpentan-2-one	VETIRAL®	Symrise
1',1',5',5'-Tetramethylhexahydro-spiro[1,3-dioxolane-2,8'(5'H)-2H-2,4a-methanonaphthalene]	YSAMBER® K	Symrise

Fragrances with amber odor

[0081] Suitable fragrances with amber odor are selected from the group consisting of:

INCI	Tradename	Supplier
(4aR,5R,7aS,9R)-Octahydro-2,2,5,8,8,9a-hexamethyl-4H-4a,9-methanoazuleno[5,6-d]-1,3-dioxole	AMBROCENIDE®	Symrise
3a,6,6,9a-Tetramethyldodecahydronaphtho[2,1-b]furan	AMBROXIDE®	Symrise

Fragrances with fruity odor

[0082] Suitable fragrances with fruity odor are selected from the group consisting of:

INCI	Tradename	Supplier
Acetophenone		Symrise
2-tert.-butyl cyclohexyl acetate	AGRUMEX® HC	Symrise
Octadecanal	ALDEHYDE C18	Symrise
Allyl caproate		Symrise
Allyl cyclohexyl propionate		Symrise
Allyl heptoate		Symrise
Allyl phenoxy acetal		Symrise
5-Hexyldihydro-4-methylfuran-2(3H)-one	APRIFLOREN®	Symrise
Benzaldehyde		Symrise
Benzyl alcohol		Symrise

1,5-Dimethyl-bicyclo[3.2.1]octan-8-one oxime	BUCCOXIME®	Symrise
1-Cyclohexylethyl-2-butenoate	DATILAT®	Symrise
3,7-Dimethyloct-1,6-diene	DIHYDROMYRCENE	Symrise
Ethyl acetoacetate		Symrise
Ethyl butyrate		Symrise
Ethyl caproate		Symrise
Ethyl heptoate		Symrise
Ethyl isovalerate		Symrise
Ethyl methyl butyrate-2		Symrise
Ethyl propionate		Symrise
(2E)-5-Methylhept-2-en-4-one	FILBERTONE®	Symrise
2,4,6-Trimethyl-4-phenyl-1,3-dioxane	FLOROPAL®	Symrise
Ethyl 2,4-dimethyl-1,3-dioxolane-2-acetate	FRAGOLANE®	Symrise
4-(4-Methoxyphenyl)butan-2-one	FRAMBION METHL ETHER	Symrise
1,3-Dimethylbutyl 2-butenoate	FRUTINAT®	Symrise
Hexyl acetate		Symrise
Isoamyl butyrate		Symrise
Isoamyl isovalerate		Symrise
(2E)-1-(2,4,4-Trimethylcyclohex-2-en-1-yl) but-2-en-1-one	ISODAMASCONE	Symrise
Ethyl (2-methyl-1,3-dioxolan-2-yl)acetate	JASMAPRUNAT®	Symrise
Methyl phenyl acetate		Symrise
6-Butyl-tetrahydro-pyran-2-one	NONALACTONE DELTA	Symrise
2-Methyl-4-propyl-[1,3]-oxathiane	OXANTHIA®	Symrise
1,1'-Bi(cyclopentyl)-2-yl (2E)-but-2-enoate	PYROPRUNAT®	Symrise
2-Cyclopentene-1-acetic acid, ethyl ester	SULTANENE®	Symrise
rel-(2R,4S,6R)-2,4,6-Trimethyl-4-phenyl-1,3-dioxane	VERTACETAL® COEUR	Symrise
1,3-Dimethyl-3-phenylbutylacetate	VERTICOLACETAT®	Symrise

Fragrances with musk odor

[0083] Suitable fragrances with musk odor are selected from the group consisting of:

INCI	**Tradename**	**Supplier**
Oxacycloheptadec-10-en-2-one	AMBRETTOLIDE®	Symrise

Cyclohexadec-8(7)-en-1-one	AURELIONE®	Symrise
Oxacyclohexadecen-2-one	GLOBALIDE®	Symrise
Cyclohexadec-8-en-1-one	GLOBANONE®	Symrise
Cyclohexadecanone	ISOMUSCONE	Symrise
Oxacyclohexadecan-2-one	MACROLIDE®	Symrise
Pentadecan-15-olide	MACROLIDE® SUPRA	Symrise
1,4-Dioxacycloheptadecan-5,17-dion	ETHYLENE BRASSYLATE	Merck

The fragrances as compiled above also represent preferred embodiments for said secondary fragrances forming the main component of the perfume compositions as claimed.

Dyes

[0084] Suitable dyes are any of the substances suitable and approved for cosmetic purposes as listed, for example, in the publication **"Kosmetische Färbemittel"** of the Farbstoffkommission der Deutschen Forschungsgemeinschaft**, Verlag Chemie, Weinheim, 1984, pages 81 to 106.** Examples include cochineal red A (C.I. 16255), patent blue V (C.I. 42051), indigotin (C.I. 73015), chlorophyllin (C.I. 75810), quinoline yellow (C.I. 47005), titanium dioxide (C.I. 77891), indanthrene blue RS (C.I. 69800) and madder lake (C.I. 58000). Luminol may also be present as a luminescent dye. Advantageous coloured pigments are for example titanium dioxide, mica, iron oxides (e.g. Fe_2O_3 Fe_3O_4, FeO(OH)) and/or tin oxide. Advantageous dyes are for example carmine, Berlin blue, chromium oxide green, ultramarine blue and/or manganese violet.

Preparations

[0085] Preferred compositions according to the present inventions are selected from the group of products for treatment, protecting, care and cleansing of the skin and/or hair or as a make-up product, preferably as a leave-on product (meaning that the one or more compounds stay on the skin and/or hair for a longer period of time, compared to rinse-off products).

[0086] The formulations according to the invention are preferably in the form of an emulsion, e.g. W/O (water-in-oil), O/W (oil-in-water), W/O/W (water-in-oil-in-water), O/W/O (oil-in-water-in-oil) emulsion, PIT emulsion, Pickering emulsion, emulsion with a low oil content, micro- or nanoemulsion, a solution, e.g. in oil (fatty oils or fatty acid esters, in particular C_6-C_{32} fatty acid C_2-C_{30} esters) or silicone oil, dispersion, suspension, creme, lotion or milk, depending on the production method and ingredients, a gel (including hydrogel, hydrodispersion gel, oleogel), spray (e.g. pump spray or spray with propellant) or a foam or an impregnating solution for cosmetic wipes, a detergent, e.g. soap, synthetic detergent, liquid wash-

ing, shower and bath preparation, bath product (capsule, oil, tablet, salt, bath salt, soap, etc.), effervescent preparation, a skin care product such as e.g. an emulsion (as described above), ointment, paste, gel (as described above), oil, balsam, serum, powder (e.g. face powder, body powder), eau de perfume, eau de toilette, after-shave, a mask, a pencil, stick, roll-on, pump, aerosol (foaming, non-foaming or post-foaming), a deodorant and/or antiperspirant, mouthwash and mouth rinse, a foot care product (including keratolytic, deodorant), an insect repellent, a sunscreen, aftersun preparation, a shaving product, aftershave balm, pre- and aftershave lotion, a depilatory agent, a hair care product such as e.g. shampoo (including 2-in-1 shampoo, anti-dandruff shampoo, baby shampoo, shampoo for dry scalps, concentrated shampoo), conditioner, hair tonic, hair water, hair rinse, styling creme, pomade, perm and setting lotion, hair spray, styling aid (e.g. gel or wax), hair smoothing agent (detangling agent, relaxer), hair dye such as e.g. temporary direct-dyeing hair dye, semi-permanent hair dye, permanent hair dye, hair conditioner, hair mousse, eye care product, make-up, make-up remover or baby product.

[0087] Auxiliary substances and additives can be included in quantities of 5 to 99 % b.w., preferably 10 to 80 % b.w., based on the total weight of the formulation. The amounts of cosmetic or dermatological auxiliary agents and additives and perfume to be used in each case can easily be determined by the person skilled in the art by simple trial and error, depending on the nature of the particular product.

[0088] The preparations can also contain water in a quantity of up to 99 wt.-percent., preferably from about 5 to about 80 wt.-percent and more preferably either from about 10 to about 50 or from about 60 to about 80 wt.-percent based on the total weight of the preparation.

DETERGENT FORMULATIONS

[0001] Another object of the present invention concerns a detergent formulation comprising said cyclopropyl derivatives or said perfume mixtures, both as described above. Said formulations may comprise said components in amounts ranging from about 0.01 to about 2 wt.-percent and preferably from about 0.1 to 1 wt.-percent – calculated on the formulation. Suitable examples for detergents encompass heavy duty powder detergents, heavy duty liquid detergents, light duty powder detergents, light duty liquid detergents, detergent tablets, fabric softeners, manual dish wash agents, all-purpose cleaners and the like.

[0002] The detergent compositions according to the present invention may comprise any of the ingredients customarily found in such compositions, such as, for example, anionic, nonionic, cationic, amphoteric or zwitterionic (co-)surfactants, organic solvents, builders, enzymes and additional auxiliaries such as soil repellents, thickeners, colorants and fragrances or the like.

Anionic and zwitterionic surfactants

[0003] Typical examples for anionic and zwitterionic surfactants encompass: Almondamidopropylamine Oxide, Almondamidopropyl Betaine, Aminopropyl Laurylglutamine, Ammonium C12-15 Alkyl Sulfate, Ammonium C12-16 Alkyl Sulfate, Ammonium Capryleth Sulfate, Ammonium Cocomonoglyceride Sulfate, Ammonium Coco-Sulfate, Ammonium Cocoyl Isethionate, Ammonium Cocoyl Sarcosinate, Ammonium C12-15 Pareth Sulfate, Ammonium C9-10 Perfluoroalkylsulfonate, Ammonium Dinonyl Sulfosuccinate, Ammonium Dodecylbenzenesulfonate, Ammonium Isostearate, Ammonium Laureth-6 Carboxylate, Ammonium Laureth-8 Carboxylate, Ammonium Laureth Sulfate, Ammonium Laureth-5 Sulfate, Ammonium Laureth-7 Sulfate, Ammonium Laureth-9 Sulfate, Ammonium Laureth-12 Sulfate, Ammonium Lauroyl Sarcosinate, Ammonium Lauryl Sulfate, Ammonium Lauryl Sulfosuccinate, Ammonium Myreth Sulfate, Ammonium Myristyl Sulfate, Ammonium Nonoxynol-4 Sulfate, Ammonium Nonoxynol-30 Sulfate, Ammonium Oleate, Ammonium Palm Kernel Sulfate, Ammonium Stearate, Ammonium Tallate, AMPD-Isostearoyl Hydrolyzed Collagen, AMPD-Rosin Hydrolyzed Collagen, AMP-Isostearoyl Hydrolyzed Collagen, AMP-Isostearoyl Hydrolyzed Keratin, AMP-Isostearoyl Hydrolyzed Soy Protein, AMP-Isostearoyl Hydrolyzed Wheat Protein, Apricotamidopropyl Betaine, Arachidic Acid, Arginine Hexyldecyl Phosphate, Avocadamidopropyl Betaine, Avocado Oil Glycereth-8 Esters, Babassu Acid, Babassuamidopropylamine Oxide, Babassuamidopropyl Betaine, Beeswax Acid, Behenamidopropyl Betaine, Behenamine Oxide, Beheneth-25, Beheneth-30, Behenic Acid, Behenyl Betaine, Bis- Butyldimethicone Polyglceryl-3, Butoxynol-5 Carboxylic Acid, Butoxynol-19 Carboxylic Acid, Butyldimoniumhydroxypropyl Butylglucosides Chloride, Butyldimoniumhydroxypropyl Laurylglucosides Chloride, Butyl Glucoside, Butylglucoside Caprate, Butylglucosides Hydroxypropyltrimonium Chloride, Butyloctanoic Acid, C18-36 Acid, C20-40 Acid, C30-50 Acid, C16-22 Acid Amide MEA, Calcium Dodecylbenzenesulfonate, Calcium Lauroyl Taurate, C9-16 Alkane/Cycloalkane, C10-14 Alkyl

Benzenesulfonic Acid, C12-14 Alkyl Diaminoethylglycine HCL, C9-15 Alkyl Phosphate, Candida Bombicola/Glucose/Methyl Rapeseedate Ferment, Canolamidopropyl Betaine, Capric Acid, Caproic Acid, Caproyl Ethyl Glucoside, Capryl/Capramidopropyl Betaine, Capryleth-4 Carboxylic Acid, Capryleth-6 Carboxylic Acid, Capryleth-9 Carboxylic Acid, Caprylic Acid, Capryloyl Collagen Amino Acids, Capryloyl Glycine, Capryloyl Hydrolyzed Collagen, Capryloyl Hydrolyzed Keratin, Capryloyl Keratin Amino Acids, Capryloyl Silk Amino Acids, Caprylyl/Capryl Glucoside, Caprylyl/Capryl Wheat Bran/Straw Glycosides, Caprylyl Glucoside, Caprylyl Glyceryl Ether, Caprylyl Pyrrolidone, Carnitine, Ceteareth-20, Ceteareth-23, Ceteareth-24, Ceteareth-25, Ceteareth-27, Ceteareth-28, Ceteareth-29, Ceteareth-30, Ceteareth-33, Ceteareth-34, Ceteareth-40, Ceteareth-50, Ceteareth-55, Ceteareth-60, Ceteareth-80, Ceteareth-100, Ceteareth-25 Carboxylic Acid, Ceteareth-2 Phosphate, Ceteareth-4 Phosphate, Ceteareth-5 Phosphate, Ceteareth-10 Phosphate, Ceteth-20, Ceteth-23, Ceteth-24, Ceteth-25, Ceteth-30, Ceteth-40, Ceteth-45, Ceteth-150, Ceteth-8 Phosphate, Ceteth-10 Phosphate, Ceteth-20 Phosphate, Cetoleth-22, Cetoleth-24, Cetoleth-25, Cetoleth-30, Cetyl Betaine, Chrysanthemum Sinense Flower Extract, C12-14 Hydroxyalkyl Hydroxyethyl Beta-Alanine, C12-14 Hydroxyalkyl Hydroxyethyl Sarcosine, Cocamidoethyl Betaine, Cocamidopropylamine Oxide, Cocamidopropyl Betainamide MEA Chloride, Cocamidopropyl Betaine, Cocamidopropyl Hydroxysultaine, Cocamine Oxide, Cocaminobutyric Acid, Cocaminopropionic Acid, Coceth-7 Carboxylic Acid, Coceth-4 Glucoside, Cocoamphodipropionic Acid, Cocobetainamido Amphopropionate, Coco-Betaine, Cocodimonium Hydroxypropyl Hydrolyzed Rice Protein, Cocodimonium Hydroxypropyl Hydrolyzed Soy Protein, Cocodimonium Hydroxypropyl Hydrolyzed Wheat Protein, Coco-Glucoside, Cocoglucosides Hydroxypropyltrimonium Chloride, Coco-Hydroxysultaine, Coco-Morpholine Oxide, Coconut Acid, Coconut Oil Glycereth-8 Esters, Coco/Oleamidopropyl Betaine, Coco-Sultaine, Coco/Sunfloweramidopropyl Betaine, Cocoylcholine Methosulfate, Cocoyl Glutamic Acid, Cocoyl Hydrolyzed Collagen, Cocoyl Hydrolyzed Keratin, Cocoyl Hydrolyzed Oat Protein, Cocoyl Hydrolyzed Rice Protein, Cocoyl Hydrolyzed Silk, Cocoyl Hydrolyzed Soy Protein, Cocoyl Hydrolyzed Wheat Protein, Cocoyl Sarcosine, Corn Acid, Cottonseed Acid, Cottonseed Oil Glycereth-8 Esters, C10-16 Pareth-1, C10-16 Pareth-2, C11-13 Pareth-6, C11-13 Pareth-9, C11-13 Pareth-10, C11-15 Pareth-30, C11-15 Pareth-40, C12-13 Pareth-1, C12-13 Pareth- 23, C12-14 Pareth-5, C12-14 Pareth-9, C13-15 Pareth-21, C14-15 Pareth-8, C20-22 Pareth-30, C20- 40 Pareth-40, C20-40 Pareth-95, C22-24 Pareth-33, C30-50 Pareth-40, C9-11 Pareth-6 Carboxylic Acid, C9-11 Pareth-8 Carboxylic Acid, C11-15 Pareth-7 Carboxylic Acid, C12-13 Pareth-5 Carboxylic Acid, C12-13 Pareth-7 Carboxylic Acid, C12-13 Pareth-8 Carboxylic Acid, C12-13 Pareth-12 Carboxylic Acid, C12-15 Pareth-7 Carboxylic Acid, C12-15 Pareth-8 Carboxylic Acid, C12-15 Pareth- 12 Carboxylic Acid, C14-15 Pareth-8 Carboxylic Acid, C6-10 Pareth-4 Phosphate, C12-13 Pareth-2 Phosphate, C12-13 Pareth-10 Phosphate, C12-15 Pareth-6 Phosphate, C12-15 Pareth-8 Phosphate, C12-15 Pareth-10 Phosphate, C12-16 Pareth-6 Phosphate, C4-18 Perfluoroalkylethyl Thiohydroxypropyltrimonium Chloride, Cupuassuamidopropyl Betaine, DEA-C12-13 Alkyl Sulfate, DEA-C12-15 Alkyl Sulfate, DEA-Ceteareth-2 Phosphate, DEA-Cetyl Sulfate, DEA- Cocoamphodipropionate, DEA-C12-13 Pareth-3 Sulfate, DEA-Cyclocarboxypropyloleate, DEA- Dodecylbenzene-

sulfonate, DEA-Isostearate, DEA-Laureth Sulfate, DEA-Lauryl Sulfate, DEA- Linoleate, DEA-Methyl Myristate Sulfonate, DEA-Myreth Sulfate, DEA-Myristate, DEA-Myristyl Sulfate, DEA-Oleth-5 Phosphate, DEA-Oleth-20 Phosphate, DEA PG-Oleate, Deceth-7 Carboxylic Acid, Deceth-7 Glucoside, Deceth-9 Phosphate, Decylamine Oxide, Decyl Betaine, Decyl Glucoside, Decyltetradeceth-30, Decyltetradecylamine Oxide, Diammonium Lauramido-MEA Sulfosuccinate, Diammonium Lauryl Sulfosuccinate, Diammonium Oleamido PEG-2 Sulfosuccinate, Dibutoxymethane, Di-CI 2-15 Pareth-2 Phosphate, Di-CI 2-15 Pareth-4 Phosphate, Di-CI 2-15 Pareth-6 Phosphate, Di- C12-15 Pareth-8 Phosphate, Di-CI 2-15 Pareth-10 Phosphate, Didodecyl Butanetetracarboxylate, Diethylamine Laureth Sulfate, Diethylhexyl Sodium Sulfosuccinate, Dihydroxyethyl C8-10 Alkoxypropylamine Oxide, Dihydroxyethyl C9-11 Alkoxypropylamine Oxide, Dihydroxyethyl C12-15 Alkoxypropylamine Oxide, Dihydroxyethyl Cocamine Oxide, Dihydroxyethyl Lauramine Oxide, Dihydroxyethyl Stearamine Oxide, Dihydroxyethyl Tallowamine Oxide, Dimethicone PEG-7 Phosphate, Dimethicone PEG-10 Phosphate, Dimethicone PEG/PPG-7/4 Phosphate, Dimethicone PEG/PPG-12/4 Phosphate, Dimethicone/Polyglycerin-3 Crosspolymer, Dimethicone Propyl PG- Betaine, Dimyristyl Phosphate, Dioleoylamidoethyl Hydroxyethylmonium Methosulfate, DIPA- Hydrogenated Cocoate, DIPA-Lanolate, DIPA-Myristate, Dipotassium Capryloyl Glutamate, Dipotassium Lauryl Sulfosuccinate, Dipotassium Undecylenoyl Glutamate, Disodium Babassuamido MEA-Sulfosuccinate, Disodium Caproamphodiacetate, Disodium Caproamphodipropionate, Disodium Capryloamphodiacetate, Disodium Capryloamphodipropionate, Disodium Capryloyl Glutamate, Disodium Cetearyl Sulfosuccinate, Disodium Cetyl Phenyl Ether Disulfonate, Disodium Cetyl Sulfosuccinate, Disodium Cocamido MEA-Sulfosuccinate, Disodium Cocamido MIPA PEG-4 Sulfosuccinate, Disodium Cocamido MIPA-Sulfosuccinate, Disodium Cocamido PEG-3 Sulfosuccinate, Disodium Coceth-3 Sulfosuccinate, Disodium Cocoamphocarboxyethylhydroxypropylsulfonate, Disodium Cocoamphodiacetate, Disodium Cocoamphodipropionate, Disodium Coco-Glucoside Sulfosuccinate, Disodium Coco-Sulfosuccinate, Disodium Cocoyl Butyl Gluceth-10 Sulfosuccinate, Disodium Cocoyl Glutamate, Disodium C12-14 Pareth-1 Sulfosuccinate, Disodium C12-14 Pareth-2 Sulfosuccinate, Disodium C12-15 Pareth Sulfosuccinate, Disodium C12-14 Sec-Pareth-3 Sulfosuccinate, Disodium C12-14 Sec-Pareth-5 Sulfosuccinate, Disodium C12-14 Sec-Pareth-7 Sulfosuccinate, Disodium C12-14 Sec-Pareth-9 Sulfosuccinate, Disodium C12-14 Sec-Pareth-12 Sulfosuccinate, Disodium Deceth-5 Sulfosuccinate, Disodium Deceth-6 Sulfosuccinate, Disodium Decyl Phenyl Ether Disulfonate, Disodium Dihydroxyethyl Sulfosuccinylundecylenate, Disodium Ethylene Dicocamide PEG-15 Disulfate, Disodium Hydrogenated Cottonseed Glyceride Sulfosuccinate, Disodium Hydrogenated Tallow Glutamate, Disodium Hydroxydecyl Sorbitol Citrate, Disodium Isodecyl Sulfosuccinate, Disodium Isostearamido MEA-Sulfosuccinate, Disodium Isostearamido MIPA-Sulfosuccinate, Disodium Isostearoamphodiacetate, Disodium Isostearoamphodipropionate, Disodium Isostearyl Sulfosuccinate, Disodium Laneth-5 Sulfosuccinate, Disodium Lauramido MEA-Sulfosuccinate, Disodium Lauramido MIPA Glycol Sulfosuccinate, Disodium Lauramido PEG-2 Sulfosuccinate, Disodium Lauramido PEG-5 Sulfosuccinate, Disodium Laureth-5 Carboxyamphodiacetate, Disodium Laureth-7 Citrate, Disodium Laureth Sulfosuccinate, Disodium Laureth-6 Sulfosuccinate,

Disodium Laureth-9 Sulfosuccinate, Disodium Laureth-12 Sulfosuccinate, Disodium Lauriminobishydroxypropylsulfonate, Disodium Lauriminodiacetate, Disodium Lauriminodipropionate, Disodium Lauriminodipropionate Tocopheryl Phosphates, Disodium Lauroamphodiacetate, Disodium Lauroamphodipropionate, Disodium N- Lauroyl Aspartate, Disodium Lauroyl Glutamate, Disodium Lauryl Phenyl Ether Disulfonate, Disodium Lauryl Sulfosuccinate, Disodium Myristamido MEA-Sulfosuccinate, Disodium Nonoxynol-10 Sulfosuccinate, Disodium Oleamido MEA-Sulfosuccinate, Disodium Oleamido MIPA-Sulfosuccinate, Disodium Oleamido PEG-2 Sulfosuccinate, Disodium Oleoamphodipropionate, Disodium Oleth-3 Sulfosuccinate, Disodium Oleyl Phosphate, Disodium Oleyl Sulfosuccinate, Disodium Palmitamido PEG-2 Sulfosuccinate, Disodium Palmitoleamido PEG-2 Sulfosuccinate, Disodium PEG-4 Cocamido MIPA-Sulfosuccinate, Disodium PEG-12 Dimethicone Sulfosuccinate, Disodium PEG-8 Palm Glycerides Sulfosuccinate, Disodium PPG-2-Isodeceth-7 Carboxyamphodiacetate, Disodium Ricinoleamido MEA-Sulfosuccinate, Disodium Sitostereth-14 Sulfosuccinate, Disodium Soyamphodiacetate, Disodium Stearamido MEA-Sulfosuccinate, Disodium Steariminodipropionate, Disodium Stearoamphodiacetate, Disodium Stearoyl Glutamate, Disodium Stearyl Sulfosuccinamate, Disodium Stearyl Sulfosuccinate, Disodium 2-Sulfolaurate, Disodium 2-Sulfopalmitate, Disodium Tallamido MEA-Sulfosuccinate, Disodium Tallowamido MEA-Sulfosuccinate, Disodium Tallowamphodiacetate, Disodium Tallowiminodipropionate, Disodium Tallow Sulfosuccinamate, Disodium Tridecylsulfosuccinate, Disodium Undecylenamido MEA-Sulfosuccinate, Disodium Undecylenamido PEG-2 Sulfosuccinate, Disodium Undecylenoyl Glutamate, Disodium Wheat Germamido MEA-Sulfosuccinate, Disodium Wheat Germamido PEG-2 Sulfosuccinate, Disodium Wheatgermamphodiacetate, Di-TEA-Cocamide Diacetate, Di-TEA-Oleamido PEG-2 Sulfosuccinate, Di-TEA-Palmitoyl Aspartate, Ditridecyl Sodium Sulfosuccinate, Dodecylbenzene Sulfonic Acid, Erucamidopropyl Hydroxysultaine, Ethylhexeth-3 Carboxylic Acid, Ethyl PEG-15 Cocamine Sulfate, Glyceryl Capryl Ether, Hexyldecanoic Acid, Hydrogenated Coconut Acid, Hydrogenated Laneth-25, Hydrogenated Menhaden Acid, Hydrogenated Palm Acid, Hydrogenated Palm Kernel Amine Oxide, Hydrogenated Tallow Acid, Hydrogenated Tallowamine Oxide, Hydrogenated Tallow Betaine, Hydrogenated Talloweth-25, Hydrogenated Tallowoyl Glutamic Acid, Hydrolyzed Candida Bombicola Extract, Hydroxyceteth-60, Hydroxyethyl Acetomonium PG-Dimethicone, Hydroxyethylbutylamine Laureth Sulfate, Hydroxyethyl Carboxymethyl Cocamidopropylamine, Hydroxyethyl Hydroxypropyl C12-15 Alkoxypropylamine Oxide, Hydroxylauryl/Hydroxymyristyl Betaine, Hydroxystearic Acid, Hydroxysuccinimidyl C10-40 Isoalkyl Acidate, Hydroxysuccinimidyl C21-22 Isoalkyl Acidate, Hydroxysultaines, IPDI/PEG-15 Soyamine Oxide Copolymer, IPDI/PEG-15 Soyethonium Ethosulfate Copolymer, IPDI/PEG-15 Soy Glycinate Copolymer, Isoceteth-30, Isolaureth-4 Phosphate, Isopolyglyceryl-3 Dimethicone, Isopolyglyceryl-3 Dimethiconol, Isopropanolamine Lanolate, Isopropylamine Dodecylbenzenesulfonate, Isostearamidopropylamine Oxide, Isostearamidopropyl Betaine, Isostearamidopropyl Morpholine Oxide, Isosteareth-8, Isosteareth-16, Isosteareth-22, Isosteareth-25, Isosteareth-50, Isostearic Acid, Isostearoyl Hydrolyzed Collagen, Jojoba Oil PEG-150 Esters, Jojoba Wax PEG-80 Esters, Jojoba Wax PEG-120 Esters, Laneth-20, Laneth-25, Laneth-40, Laneth-50, Laneth-60, Laneth-75, Lan-

olin Acid, Lauramidopropylamine Oxide, Lauramidopropyl Betaine, Lauramidopropyl Hydroxysultaine, Lauramine Oxide, Lauraminopropionic Acid, Laurdimoniumhydroxypropyl Decylglucosides Chloride, Laurdimoniumhydroxypropyl Laurylglucosides Chloride, Laureth-16, Laureth-20, Laureth-21, Laureth-23, Laureth-25, Laureth-30, Laureth-38, Laureth-40, Laureth-3 Carboxylic Acid, Laureth-4 Carboxylic Acid, Laureth-5 Carboxylic Acid, Laureth- 6 Carboxylic Acid, Laureth-8 Carboxylic Acid, Laureth-10 Carboxylic Acid, Laureth-11 Carboxylic Acid, Laureth-12 Carboxylic Acid, Laureth-13 Carboxylic Acid, Laureth-14 Carboxylic Acid, Laureth-17 Carboxylic Acid, Laureth-6 Citrate, Laureth-7 Citrate, Laureth-1 Phosphate, Laureth-2 Phosphate, Laureth-3 Phosphate, Laureth-4 Phosphate, Laureth-7 Phosphate, Laureth-8 Phosphate, Laureth-7 Tartrate, Laurie Acid, Laurimino Bispropanediol, Lauriminodipropionic Acid, Lauroamphodipropionic Acid, Lauroyl Beta-Alanine, Lauroyl Collagen Amino Acids, Lauroyl Ethyltrimonium Methosulfate, Lauroyl Hydrolyzed Collagen, Lauroyl Hydrolyzed Elastin, Lauroyl Methyl Glucamide, Lauroyl Sarcosine, Lauroyl Silk Amino Acids, Lauryl Betaine, Lauryl Dimethicone/Polyglycerin-3 Crosspolymer, Lauryldimoniumhydroxypropyl Cocoglucosides Chloride, Lauryl Glucoside, Laurylglucosides Hydroxypropyltrimonium Chloride, Lauryl Glycol Hydroxypropyl Ether, Lauryl Hydroxysultaine, Lauryl Malamide, Lauryl Methylglucamide, Lauryl/Myristyl Glycol Hydroxypropyl Ether, Lauryl/Myristyl Wheat Bran/Straw Glycosides, Lauryl Polyglyceryl-3 Polydimethylsiloxyethyl Dimethicone, Lauryl Pyrrolidone, Lauryl Sultaine, Linoleic Acid, Linolenic Acid, Linseed Acid, Lysine Cocoate, Macadamia Seed Oil Glycereth-8 Esters, Magnesium Coceth Sulfate, Magnesium Coco-Sulfate, Magnesium Isododecylbenzenesulfonate, Magnesium Laureth-11 Carboxylate, Magnesium Laureth Sulfate, Magnesium Laureth-5 Sulfate, Magnesium Laureth-8 Sulfate, Magnesium Laureth-16 Sulfate, Magnesium Laureth-3 Sulfosuccinate, Magnesium Lauryl Hydroxypropyl Sulfonate, Magnesium Lauryl Sulfate, Magnesium Methyl Cocoyl Taurate, Magnesium Myreth Sulfate, Magnesium Oleth Sulfate, Magnesium/TEA-Coco-Sulfate, Manicouagan Clay, MEA-Cocoate, MEA-Laureth-6 Carboxylate, MEA- Laureth Sulfate, MEA-Lauryl Sulfate, MEA PPG-6 Laureth-7 Carboxylate, MEA-PPG-8-Steareth-7 Carboxylate, MEA-Undecylenate, Meroxapol 108, Meroxapol 174, Meroxapol 178, Meroxapol 254, Meroxapol 255, Meroxapol 258, Meroxapol 314, Methoxy PEG-450 Amidoglutaroyl Succinimide, Methoxy PEG-450 Amido Hydroxysuccinimidyl Succinamate, Methoxy PEG-450 Maleimide, Methyl Morpholine Oxide, Milkamidopropyl Amine Oxide, Milkamidopropyl Betaine, Minkamidopropylamine Oxide, Minkamidopropyl Betaine, MIPA C12-15 Pareth Sulfate, MIPA-Dodecylbenzenesulfonate, MIPA-Laureth Sulfate, MIPA-Lauryl Sulfate, Mixed Isopropanolamines Lanolate, Mixed Isopropanolamines Lauryl Sulfate, Mixed Isopropanolamines Myristate, Morpholine Oleate, Morpholine Stearate, Myreth-3 Carboxylic Acid, Myreth-5 Carboxylic Acid, Myristalkonium Chloride, Myristamidopropylamine Oxide, Myristamidopropyl Betaine, Myristamidopropyl Dimethylamine Phosphate, Myristamidopropyl Hydroxysultaine, Myristamidopropyl PG-Dimonium Chloride Phosphate, Myristamine Oxide, Myristaminopropionic Acid, Myristic Acid, Myristoyl Ethyltrimonium Methosulfate, Myristoyl Glutamic Acid, Myristoyl Hydrolyzed Collagen, Myristoyl Sarcosine, Myristyl Betaine, Myristyl/Cetyl Amine Oxide, Myristyldimoniumhydroxypropyl Cocoglucosides Chloride, Myristyl Glucoside, Myristyl Phosphate, Nonoxynol-20, Nonoxynol-23, Nonoxynol-25,

Nonoxynol-30, Nonoxynol-35, Nonoxynol-40, Nonoxynol-44, Nonoxynol-50, Nonoxynol-100, Nonoxynol-120, Nonoxynol-5 Carboxylic Acid, Nonoxynol-8 Carboxylic Acid, Nonoxynol-10 Carboxylic Acid, Nonoxynol-3 Phosphate, Nonoxynol-4 Phosphate, Nonoxynol-6 Phosphate, Nonoxynol-9 Phosphate, Nonoxynol-10 Phosphate, Nonyl Nonoxynol-30, Nonyl Nonoxynol-49, Nonyl Nonoxynol-100, Nonyl Nonoxynol-150, Nonyl Nonoxynol-7 Phosphate, Nonyl Nonoxynol-8 Phosphate, Nonyl Nonoxynol-9 Phosphate, Nonyl Nonoxynol-10 Phosphate, Nonyl Nonoxynol-11 Phosphate, Nonyl Nonoxynol-15 Phosphate, Nonyl Nonoxynol-24 Phosphate, Oatamidopropyl Betaine, Octoxynol-16, Octoxynol-25, Octoxynol-30, Octoxynol-33, Octoxynol-40, Octoxynol-70, Octoxynol-20 Carboxylic Acid, Octyldodeceth-20, Octyldodeceth-25, Octyldodeceth-30, Oleamidopropylamine Oxide, Oleamidopropyl Betaine, Oleamidopropyl Hydroxysultaine, Oleamine Oxide, Oleic Acid, Oleoyl Hydrolyzed Collagen, Oleoyl Sarcosine, Oleth-20, Oleth-23, Oleth-24, Oleth-25, Oleth-30, Oleth-35, Oleth-40, Oleth-44, Oleth-50, Oleth-3 Carboxylic Acid, Oleth-6 Carboxylic Acid, Oleth-10 Carboxylic Acid, Oleyl Betaine, Olivamidopropylamine Oxide, Olivamidopropyl Betaine, Olive Acid, Olivoyl Hydrolyzed Wheat Protein, Ophiopogon Extract Stearate, Ozonized Oleth-10, Ozonized PEG-10 Oleate, Ozonized PEG-14 Oleate, Ozonized Polysorbate 80, Palm Acid, Palmamidopropyl Betaine, Palmeth-2 Phosphate, Palmitamidopropylamine Oxide, Palmitamidopropyl Betaine, Palmitamine Oxide, Palmitic Acid, Palmitoyl Collagen Amino Acids, Palmitoyl Glycine, Palmitoyl Hydrolyzed Collagen, Palmitoyl Hydrolyzed Milk Protein, Palmitoyl Hydrolyzed Wheat Protein, Palmitoyl Keratin Amino Acids, Palmitoyl Oligopeptide, Palmitoyl Silk Amino Acids, Palm Kernel Acid, Palm Kernelamidopropyl Betaine, Peach Kernel Oil Glycereth-8 Esters, Peanut Acid, PEG-10 Castor Oil, PEG-40 Castor Oil, PEG-44 Castor Oil, PEG-50 Castor Oil, PEG-54 Castor Oil, PEG-55 Castor Oil, PEG-60 Castor Oil, PEG-80 Castor Oil, PEG-100 Castor Oil, PEG-200 Castor Oil, PEG-11 Cocamide, PEG-6 Cocamide Phosphate, PEG-4 Cocamine, PEG-8 Cocamine, PEG-12 Cocamine, PEG-150 Dibehenate, PEG-90 Diisostearate, PEG-75 Dilaurate, PEG-150 Dilaurate, PEG-75 Dioleate, PEG-150 Dioleate, PEG-75 Distearate, PEG-120 Distearate, PEG-150 Distearate, PEG-175 Distearate, PEG-190 Distearate, PEG-250 Distearate, PEG-30 Glyceryl Cocoate, PEG-40 Glyceryl Cocoate, PEG-78 Glyceryl Cocoate, PEG-80 Glyceryl Cocoate, PEG-30 Glyceryl Isostearate, PEG-40 Glyceryl Isostearate, PEG-50 Glyceryl Isostearate, PEG-60 Glyceryl Isostearate, PEG-90 Glyceryl Isostearate, PEG-23 Glyceryl Laurate, PEG-30 Glyceryl Laurate, PEG-25 Glyceryl Oleate, PEG-30 Glyceryl Oleate, PEG-30 Glyceryl Soyate, PEG-25 Glyceryl Stearate, PEG-30 Glyceryl Stearate, PEG-40 Glyceryl Stearate, PEG-120 Glyceryl Stearate, PEG-200 Glyceryl Stearate, PEG-28 Glyceryl Tallowate, PEG-80 Glyceryl Tallowate, PEG-82 Glyceryl Tallowate, PEG-130 Glyceryl Tallowate, PEG-200 Glyceryl Tallowate, PEG-45 Hydrogenated Castor Oil, PEG-50 Hydrogenated Castor Oil, PEG-54 Hydrogenated Castor Oil, PEG-55 Hydrogenated Castor Oil, PEG-60 Hydrogenated Castor Oil, PEG-80 Hydrogenated Castor Oil, PEG-100 Hydrogenated Castor Oil, PEG-200 Hydrogenated Castor Oil, PEG-30 Hydrogenated Lanolin, PEG-70 Hydrogenated Lanolin, PEG-50 Hydrogenated Palmamide, PEG-2 Isostearate, PEG-3 Isostearate, PEG-4 Isostearate, PEG-6 Isostearate, PEG-8 Isostearate, PEG-10 Isostearate, PEG-12 Isostearate, PEG-20 Isostearate, PEG-30 Isostearate, PEG-40 Isostearate, PEG- 26 Jojoba Acid, PEG-40 Jojoba Acid, PEG-15 Jojoba

Alcohol, PEG-26 Jojoba Alcohol, PEG-40 Jojoba Alcohol, PEG-35 Lanolin, PEG-40 Lanolin, PEG-50 Lanolin, PEG-55 Lanolin, PEG-60 Lanolin, PEG- 70 Lanolin, PEG-75 Lanolin, PEG-85 Lanolin, PEG-100 Lanolin, PEG-150 Lanolin, PEG-75 Lanolin Oil, PEG-2 Lauramide, PEG-3 Lauramine Oxide, PEG-20 Laurate, PEG-32 Laurate, PEG-75 Laurate, PEG-150 Laurate, PEG-70 Mango Glycerides, PEG-20 Mannitan Laurate, PEG-8 Methyl Ether Dimethicone, PEG-120 Methyl Glucose Dioleate, PEG-80 Methyl Glucose Laurate, PEG-120 Methyl Glucose Trioleate, PEG-4 Montanate, PEG-30 Oleamine, PEG-20 Oleate, PEG-23 Oleate, PEG-32 Oleate, PEG-36 Oleate, PEG-75 Oleate, PEG-150 Oleate, PEG-20 Palmitate, PEG-150 Polyglyceryl-2 Tristearate, PEG/PPG-28/21 Acetate Dimethicone, PEG/PPG-24/18 Butyl Ether Dimethicone, PEG/PPG-3/17 Copolymer, PEG/PPG-5/35 Copolymer, PEG/PPG-8/55 Copolymer, PEG/PPG-10/30 Copolymer, PEG/PPG-10/65 Copolymer, PEG/PPG-12/35 Copolymer, PEG/PPG-16/17 Copolymer, PEG/PPG-20/9 Copolymer, PEG/PPG-20/20 Copolymer, PEG/PPG-20/60 Copolymer, PEG/PPG- 20/65 Copolymer, PEG/PPG-22/25 Copolymer, PEG/PPG-28/30 Copolymer, PEG/PPG-30-35 Copolymer, PEG/PPG-30/55 Copolymer, PEG/PPG-35/40 Copolymer, PEG/PPG-50/40 Copolymer, PEG/PPG-150/35 Copolymer, PEG/PPG-160/30 Copolymer, PEG/PPG-190/60 Copolymer, PEG/PPG-200/40 Copolymer, PEG/PPG-300/55 Copolymer, PEG/PPG-20/22 Methyl Ether Dimethicone, PEG-26-PPG-30 Phosphate, PEG/PPG-4/2 Propylheptyl Ether, PEG/PPG-6/2 Propylheptyl Ether, PEG-7/PPG-2 Propylheptyl Ether, PEG/PPG-8/2 Propylheptyl Ether, PEG/PPG- 10/2 Propylheptyl Ether, PEG/PPG-14/2 Propylheptyl Ether, PEG/PPG-40/2 Propylheptyl Ether, PEG/PPG-10/2 Ricinoleate, PEG/PPG-32/3 Ricinoleate, PEG-55 Propylene Glycol Oleate, PEG-25 Propylene Glycol Stearate, PEG-75 Propylene Glycol Stearate, PEG-120 Propylene Glycol Stearate, PEG-5 Rapeseed Sterol, PEG-10 Rapeseed Sterol, PEG-40 Ricinoleamide, PEG-75 Shea Butter Glycerides, PEG-75 Shorea Butter Glycerides, PEG-20 Sorbitan Cocoate, PEG-20 Sorbitan Isostearate, PEG-40 Sorbitan Lanolate, PEG-75 Sorbitan Lanolate, PEG-10 Sorbitan Laurate, PEG-40 Sorbitan Laurate, PEG-44 Sorbitan Laurate, PEG-75 Sorbitan Laurate, PEG-80 Sorbitan Laurate, PEG-20 Sorbitan Oleate, PEG-80 Sorbitan Palmitate, PEG-40 Sorbitan Stearate, PEG-60 Sorbitan Stearate, PEG-160 Sorbitan Triisostearate, PEG-40 Soy Sterol, PEG-2 Stearamide Carboxylic Acid, PEG-9 Stearamide Carboxylic Acid, PEG-20 Stearate, PEG-23 Stearate, PEG-25 Stearate, PEG-30 Stearate, PEG-32 Stearate, PEG-35 Stearate, PEG-36 Stearate, PEG-40 Stearate, PEG-45 Stearate, PEG-50 Stearate, PEG-55 Stearate, PEG-75 Stearate, PEG-90 Stearate, PEG-100 Stearate, PEG- 120 Stearate, PEG-150 Stearate, PEG-45 Stearate Phosphate, PEG-20 Tallate, PEG-50 Tallow Amide, PEG-2 Tallowamide DEA, PEG-20 Tallowate, PEG-66 Trihydroxystearin, PEG-200 Trihydroxystearin, PEG-60 Tsubakiate Glycerides, Pelargonic Acid, Pentadoxynol-200, Pheneth-6 Phosphate, Poloxamer 105, Poloxamer 108, Poloxamer 182, Poloxamer 183, Poloxamer 184, Poloxamer 188, Poloxamer 217, Poloxamer 234, Poloxamer 235, Poloxamer 237, Poloxamer 238, Poloxamer 288, Poloxamer 334, Poloxamer 335, Poloxamer 338, Poloxamine 908, Poloxamine 1508, Polydimethylsiloxy PEG/PPG-24/19 Butyl Ether Silsesquioxane, Polydimethylsiloxy PPG-13 Butyl Ether Silsesquioxane, Polyglyceryl-6 Caprate, Polyglyceryl-10 Dilaurate, Polyglyceryl-20 Heptacaprylate, Polyglyceryl-20 Hexacaprylate, Polyglyceryl-2 Lauryl Ether, Polyglyceryl-10 Lauryl Ether, Polyglyceryl-20 Octaisononanoate, Polyglyceryl-6 Pen-

tacaprylate, Polyglyceryl-10 Pentacaprylate, Polyglyceryl-3 Polydimethylsiloxyethyl Dimethicone, Polyglyceryl-6 Tetracaprylate, Polyglyceryl-10 Tetralaurate, Polyglyceryl-6 Tricaprylate, Polyglyceryl-10 Trilaurate, Polyquaternium- 77, Polyquaternium-78, Polyquaternium-79, Polyquaternium-80, Polyquaternium-81, Polyquaternium- 82, Pomaderris Kumerahou Flower/Leaf Extract, Poria Cocos Extract, Potassium Abietoyl Hydrolyzed Collagen, Potassium Babassuate, Potassium Behenate, Potassium C9-15 Alkyl Phosphate, Potassium C11-15 Alkyl Phosphate, Potassium C12-13 Alkyl Phosphate, Potassium C12-14 Alkyl Phosphate, Potassium Caprate, Potassium Capryloyl Glutamate, Potassium Capryloyl Hydrolyzed Rice Protein, Potassium Castorate, Potassium Cocoate, Potassium Cocoyl Glutamate, Potassium Cocoyl Glycinate, Potassium Cocoyl Hydrolyzed Casein, Potassium Cocoyl Hydrolyzed Collagen, Potassium Cocoyl Hydrolyzed Corn Protein, Potassium Cocoyl Hydrolyzed Keratin, Potassium Cocoyl Hydrolyzed Oat Protein, Potassium Cocoyl Hydrolyzed Potato Protein, Potassium Cocoyl Hydrolyzed Rice Bran Protein, Potassium Cocoyl Hydrolyzed Rice Protein, Potassium Cocoyl Hydrolyzed Silk, Potassium Cocoyl Hydrolyzed Soy Protein, Potassium Cocoyl Hydrolyzed Wheat Protein, Potassium Cocoyl Hydrolyzed Yeast Protein, Potassium Cocoyl PCA, Potassium Cocoyl Sarcosinate, Potassium Cocoyl Taurate, Potassium Cornate, Potassium Cyclocarboxypropyloleate, Potassium Dihydroxyethyl Cocamine Oxide Phosphate, Potassium Dimethicone PEG-7 Phosphate, Potassium Dodecylbenzenesulfonate, Potassium Hempseedate, Potassium Hydrogenated Cocoate, Potassium Hydrogenated Palmate, Potassium Hydrogenated Tallowate, Potassium Hydroxystearate, Potassium Isostearate, Potassium Lanolate, Potassium Laurate, Potassium Laureth-3 Carboxylate, Potassium Laureth-4 Carboxylate, Potassium Laureth-5 Carboxylate, Potassium Laureth-6 Carboxylate, Potassium Laureth-10 Carboxylate, Potassium Laureth Phosphate, Potassium Lauroyl Collagen Amino Acids, Potassium Lauroyl Glutamate, Potassium Lauroyl Hydrolyzed Collagen, Potassium Lauroyl Hydrolyzed Pea Protein, Potassium Lauroyl Hydrolyzed Soy Protein, Potassium Lauroyl PCA, Potassium Lauroyl Pea Amino Acids, Potassium Lauroyl Sarcosinate, Potassium Lauroyl Silk Amino Acids, Potassium Lauroyl Wheat Amino Acids, Potassium Lauryl Phosphate, Potassium Lauryl Sulfate, Potassium Linoleate, Potassium Metaphosphate, Potassium Methyl Cocoyl Taurate, Potassium Myristate, Potassium Myristoyl Glutamate, Potassium Myristoyl Hydrolyzed Collagen, Potassium Octoxynol-12 Phosphate, Potassium Oleate, Potassium Oleoyl Hydrolyzed Collagen, Potassium Olivate, Potassium Olivoyl Hydrolyzed Oat Protein, Potassium Olivoyl Hydrolyzed Wheat Protein, Potassium Olivoyl/Lauroyl Wheat Amino Acids, Potassium Olivoyl PCA, Potassium Palmate, Potassium Palmitate, Potassium Palmitoyl Hydrolyzed Corn Protein, Potassium Palmitoyl Hydrolyzed Oat Protein, Potassium Palmitoyl Hydrolyzed Rice Protein, Potassium Palmitoyl Hydrolyzed Sweet Almond Protein, Potassium Palmitoyl Hydrolyzed Wheat Protein, Potassium Palm Kernelate, Potassium Peanutate, Potassium Rapeseedate, Potassium Ricinoleate, Potassium Safflowerate, Potassium Soyate, Potassium Stearate, Potassium Stearoyl Hydrolyzed Collagen, Potassium Tallate, Potassium Tallowate, Potassium Taurate, Potassium Taurine Laurate, Potassium Trideceth-3 Carboxylate, Potassium Trideceth-4 Carboxylate, Potassium Trideceth-7 Carboxylate, Potassium Trideceth-15 Carboxylate, Potassium Trideceth-19 Carboxylate, Potassium Trideceth-6 Phosphate, Potassium Trideceth-7 Phosphate, Potassi-

um Tsubakiate, Potassium Undecylenate, Potassium Undecylenoyl Hydrolyzed Collagen, Potassium Undecylenoyl Hydrolyzed Rice Protein, PPG-30- Buteth-30, PPG-36-Buteth-36, PPG-38-Buteth-37, PPG-30-Capryleth-4 Phosphate, PPG-10 Cetyl Ether Phosphate, PPG-2 C9-11 Pareth-8, PPG-1-Deceth-5, PPG-3-Deceth-2 Carboxylic Acid, PPG-30 Ethylhexeth-4 Phosphate, PPG-20-Glycereth-30, PPG-2 Hydroxyethyl Coco/Isostearamide, PPG-2- Isodeceth-8, PPG-2-Isodeceth-10, PPG-2-Isodeceth-18, PPG-2-Isodeceth-25, PPG-4-Isodeceth-10, Propyltrimonium Hydrolyzed Collagen, Quaternium-24, Quaternium-52, Quaternium-87, Rapeseed Acid, Rice Bran Acid, Rice Oil Glycereth-8 Esters, Ricinoleamidopropyl Betaine, Ricinoleic Acid, Ricinoleth-40, Safflower Acid, Sapindus Oahuensis Fruit Extract, Saponaria Officinalis Root Powder, Saponins, Sekken-K, Sekken-Na/K, Sekken Soji, Sekken Soji-K, Sesame Oil Glycereth-8 Esters, Sesamidopropylamine Oxide, Sesamidopropyl Betaine, Shea Butteramidopropyl Betaine, Shea Butter Glycereth-8 Esters, Sodium Arachidate, Sodium Arganampohoacetate, Sodium Astrocaryum Murumuruate, Sodium Avocadoate, Sodium Babassuamphoacetate, Sodium Babassuate, Sodium Babassu Sulfate, Sodium Behenate, Sodium Bisglycol Ricinosulfosuccinate, Sodium Bis- Hydroxyethylglycinate Coco-Glucosides Crosspolymer, Sodium Bis-Hydroxyethylglycinate Lauryl- Glucosides Crosspolymer, Sodium Borageamidopropyl PG-Dimonium Chloride Phosphate, Sodium Butoxynol-12 Sulfate, Sodium Butylglucosides Hydroxypropyl Phosphate, Sodium C13-17 Alkane Sulfonate, Sodium C14-18 Alkane Sulfonate, Sodium C12-15 Alkoxypropyl Iminodipropionate, Sodium C10-16 Alkyl Sulfate, Sodium C11-15 Alkyl Sulfate, Sodium C12-13 Alkyl Sulfate, Sodium C12-15 Alkyl Sulfate, Sodium C12-18 Alkyl Sulfate, Sodium C16-20 Alkyl Sulfate, Sodium C9-22 Alkyl Sec Sulfonate, Sodium C14-17 Alkyl Sec Sulfonate, Sodium Caprate, Sodium Caproamphoacetate, Sodium Caproamphohydroxypropylsulfonate, Sodium Caproamphopropionate, Sodium Caproyl Methyltaurate, Sodium Caprylate, Sodium Capryleth-2 Carboxylate, Sodium Capryleth-9 Carboxylate, Sodium Capryloamphoacetate, Sodium Capryloamphohydroxypropylsulfonate, Sodium Capryloamphopropionate, Sodium Capryloyl Glutamate, Sodium Capryloyl Hydrolyzed Wheat Protein, Sodium Caprylyl PG-Sulfonate, Sodium Caprylyl Sulfonate, Sodium Castorate, Sodium Ceteareth-13 Carboxylate, Sodium Cetearyl Sulfate, Sodium Ceteth-13 Carboxylate, Sodium Cetyl Sulfate, Sodium Cocamidopropyl PG-Dimonium Chloride Phosphate, Sodium Cocaminopropionate, Sodium Coceth Sulfate, Sodium Coceth-30 Sulfate, Sodium Cocoabutteramphoacetate, Sodium Cocoa Butterate, Sodium Cocoamphoacetate, Sodium Cocoamphohydroxypropylsulfonate, Sodium Cocoamphopropionate, Sodium Cocoate, Sodium Coco/Babassu/Andiroba Sulfate, Sodium Coco/Babassu Sulfate, Sodium Cocoglucosides Hydroxypropyl Phosphate, Sodium Cocoglucosides Hydroxypropylsulfonate, Sodium Coco-Glucoside Tartrate, Sodium Cocoglyceryl Ether Sulfonate, Sodium Coco/Hydrogenated Tallow Sulfate, Sodium Cocoiminodiacetate, Sodium Cocomonoglyceride Sulfate, Sodium Cocomonoglyceride Sulfonate, Sodium Coco PG-Dimonium Chloride Phosphate, Sodium Coco-Sulfate, Sodium Coco Sulfoacetate, Sodium Cocoyl Alaninate, Sodium Cocoyl Amino Acids, Sodium Cocoyl Collagen Amino Acids, Sodium Cocoyl Glutamate, Sodium Cocoyl Glutaminate, Sodium Cocoyl Glycinate, Sodium Cocoyl/Hydrogenated Tallow Glutamate, Sodium Cocoyl Hydrolyzed Collagen, Sodium Cocoyl Hydrolyzed Keratin, Sodium Cocoyl Hydrolyzed

Rice Protein, Sodium Cocoyl Hydrolyzed Silk, Sodium Cocoyl Hydrolyzed Soy Protein, Sodium Cocoyl Hydrolyzed Sweet Almond Protein, Sodium Cocoyl Hydrolyzed Wheat Protein, Sodium Cocoyl Hydrolyzed Wheat Protein Glutamate, Sodium Cocoyl Isethionate, Sodium Cocoyl Methylaminopropionate, Sodium Cocoyl Oat Amino Acids, Sodium Cocoyl/Palmoyl/Sunfloweroyl Glutamate, Sodium Cocoyl Proline, Sodium Cocoyl Sarcosinate, Sodium Cocoyl Taurate, Sodium Cocoyl Threoninate, Sodium Cocoyl Wheat Amino Acids, Sodium C12-14 Olefin Sulfonate, Sodium C14-16 Olefin Sulfonate, Sodium C14- 18 Olefin Sulfonate, Sodium C16-18 Olefin Sulfonate, Sodium Cornamphopropionate, Sodium Cottonseedamphoacetate, Sodium C13-15 Pareth-8 Butyl Phosphate, Sodium C9-11 Pareth-6 Carboxylate, Sodium C11-15 Pareth-7 Carboxylate, Sodium C12-13 Pareth-5 Carboxylate, Sodium C12-13 Pareth-8 Carboxylate, Sodium C12-13 Pareth-12 Carboxylate, Sodium C12-15 Pareth-6 Carboxylate, Sodium C12-15 Pareth-7 Carboxylate, Sodium C12-15 Pareth-8 Carboxylate, Sodium C14-15 Pareth-8 Carboxylate, Sodium C12-14 Sec-Pareth-8 Carboxylate, Sodium C14-15 Pareth-PG Sulfonate, Sodium C12-13 Pareth-2 Phosphate, Sodium C13-15 Pareth-8 Phosphate, Sodium C9-15 Pareth-3 Sulfate, Sodium C10-15 Pareth Sulfate, Sodium C10-16 Pareth-2 Sulfate, Sodium C12-13 Pareth Sulfate, Sodium C12-15 Pareth Sulfate, Sodium C12-15 Pareth-3 Sulfate, Sodium C13-15 Pareth-3 Sulfate, Sodium C12-14 Sec-Pareth-3 Sulfate, Sodium C12-15 Pareth-3 Sulfonate, Sodium C12-15 Pareth-7 Sulfonate, Sodium C12-15 Pareth-15 Sulfonate, Sodium Deceth-2 Carboxylate, Sodium Deceth Sulfate, Sodium Decylbenzenesulfonate, Sodium Decylglucosides Hydroxypropyl Phosphate, Sodium Decylglucosides Hydroxypropylsulfonate, Sodium Dilaureth-7 Citrate, Sodium Dilaureth-10 Phosphate, Sodium Dilinoleamidopropyl PG-Dimonium Chloride Phosphate, Sodium Dilinoleate, Sodium Dioleth-8 Phosphate, Sodium Dodecylbenzenesulfonate, Sodium Ethyl 2- Sulfolaurate, Sodium Glyceryl Oleate Phosphate, Sodium Grapeseedamidopropyl PG-Dimonium Chloride Phosphate, Sodium Grapeseedamphoacetate, Sodium Grapeseedate, Sodium Hempseedamphoacetate, Sodium Hexeth-4 Carboxylate, Sodium Hydrogenated Cocoate, Sodium Hydrogenated Cocoyl Methyl Isethionate, Sodium Hydrogenated Palmate, Sodium Hydrogenated Tallowate, Sodium Hydrogenated Tallowoyl Glutamate, Sodium Hydroxylauryldimonium Ethyl Phosphate, Sodium Hydroxypropyl Palm Kernelate Sulfonate, Sodium Hydroxypropylphosphate Decylglucoside Crosspolymer, Sodium Hydroxypropylphosphate Laurylglucoside Crosspolymer, Sodium Hydroxypropylsulfonate Cocoglucoside Crosspolymer, Sodium Hydroxypropylsulfonate Decylglucoside Crosspolymer, Sodium Hydroxypropylsulfonate Laurylglucoside Crosspolymer, Sodium Hydroxystearate, Sodium Isostearate, Sodium Isosteareth-6 Carboxylate, Sodium Isosteareth- 11 Carboxylate, Sodium Isostearoamphoacetate, Sodium Isostearoamphopropionate, Sodium N- Isostearoyl Methyltaurate, Sodium Laneth Sulfate, Sodium Lanolate, Sodium Lardate, Sodium Lauramido Diacetate, Sodium Lauraminopropionate, Sodium Laurate, Sodium Laureth-3 Carboxylate, Sodium Laureth-4 Carboxylate, Sodium Laureth-5 Carboxylate, Sodium Laureth-6 Carboxylate, Sodium Laureth-8 Carboxylate, Sodium Laureth-11 Carboxylate, Sodium Laureth-12 Carboxylate, Sodium Laureth-13 Carboxylate, Sodium Laureth-14 Carboxylate, Sodium Laureth-16 Carboxylate, Sodium Laureth-17 Carboxylate, Sodium Laureth Sulfate, Sodium Laureth-5 Sulfate, Sodium Lau-

reth- 7 Sulfate, Sodium Laureth-8 Sulfate, Sodium Laureth-12 Sulfate, Sodium Laureth-40 Sulfate, Sodium Laureth-7 Tartrate, Sodium Lauriminodipropionate, Sodium Lauroamphoacetate, Sodium Lauroamphohydroxypropylsulfonate, Sodium Lauroampho PG-Acetate Phosphate, Sodium Lauroamphopropionate, Sodium Lauroyl Aspartate, Sodium Lauroyl Collagen Amino Acids, Sodium Lauroyl Glycine Propionate, Sodium Lauroyl Hydrolyzed Collagen, Sodium Lauroyl Hydrolyzed Silk, Sodium Lauroyl Hydroxypropyl Sulfonate, Sodium Lauroyl Isethionate, Sodium Lauroyl Methylaminopropionate, Sodium Lauroyl Methyl Isethionate, Sodium Lauroyl Millet Amino Acids, Sodium Lauroyl/Myristoyl Aspartate, Sodium Lauroyl Oat Amino Acids, Sodium Lauroyl Sarcosinate, Sodium Lauroyl Silk Amino Acids, Sodium Lauroyl Taurate, Sodium Lauroyl Wheat Amino Acids, Sodium Lauryl Diethylenediaminoglycinate, Sodium Lauryl Glucose Carboxylate, Sodium Laurylglucosides Hydroxypropyl Phosphate, Sodium Laurylglucosides Hydroxypropylsulfonate, Sodium Lauryl Glycol Carboxylate, Sodium Lauryl Hydroxyacetamide Sulfate, Sodium Lauryl Phosphate, Sodium Lauryl Sulfate, Sodium Lauryl Sulfoacetate, Sodium Linoleate, Sodium Macadamiaseedate, Sodium Mangoamphoacetate, Sodium Mangoseedate, Sodium/MEA Laureth-2 Sulfosuccinate, Sodium Methoxy PPG-2 Acetate, Sodium Methyl Cocoyl Taurate, Sodium Methyl Lauroyl Taurate, Sodium Methyl Myristoyl Taurate, Sodium Methyl Oleoyl Taurate, Sodium Methyl Palmitoyl Taurate, Sodium Methyl Stearoyl Taurate, Sodium Methyl 2-Sulfolaurate, Sodium Methyl 2- Sulfopalmitate, Sodium Methyltaurate Isopalmitamide, Sodium Methyltaurine Cocoyl Methyltaurate, Sodium Myreth Sulfate, Sodium Myristate, Sodium Myristoamphoacetate, Sodium Myristoyl Glutamate, Sodium Myristoyl Hydrolyzed Collagen, Sodium Myristoyl Isethionate, Sodium Myristoyl Sarcosinate, Sodium Myristyl Sulfate, Sodium Nonoxynol-6 Phosphate, Sodium Nonoxynol-9 Phosphate, Sodium Nonoxynol-1 Sulfate, Sodium Nonoxynol-3 Sulfate, Sodium Nonoxynol-4 Sulfate, Sodium Nonoxynol-6 Sulfate, Sodium Nonoxynol-8 Sulfate, Sodium Nonoxynol-10 Sulfate, Sodium Nonoxynol-25 Sulfate, Sodium Octoxynol-2 Ethane Sulfonate, Sodium Octoxynol-2 Sulfate, Sodium Octoxynol-6 Sulfate, Sodium Octoxynol-9 Sulfate, Sodium Oleate, Sodium Oleoamphoacetate, Sodium Oleoamphohydroxypropylsulfonate, Sodium Oleoamphopropionate, Sodium Oleoyl Hydrolyzed Collagen, Sodium Oleoyl Isethionate, Sodium Oleth Sulfate, Sodium Oleyl Methyl Isethionate, Sodium Oleyl Sulfate, Sodium Olivamphoacetate, Sodium Olivate, Sodium Olivoyl Glutamate, Sodium Palmamphoacetate, Sodium Palmate, Sodium Palm Glyceride Sulfonate, Sodium Palmitate, Sodium Palmitoyl Hydrolyzed Collagen, Sodium Palmitoyl Hydrolyzed Wheat Protein, Sodium Palmitoyl Sarcosinate, Sodium Palm Kernelate, Sodium Palm Kerneloyl Isethionate, Sodium Palmoyl Glutamate, Sodium Passiflora Edulis Seedate, Sodium Peanutamphoacetate, Sodium Peanutate, Sodium PEG-6 Cocamide Carboxylate, Sodium PEG-8 Cocamide Carboxylate, Sodium PEG-4 Cocamide Sulfate, Sodium PEG-3 Lauramide Carboxylate, Sodium PEG-4 Lauramide Carboxylate, Sodium PEG-8 Palm Glycerides Carboxylate, Sodium Pentaerythrityl Hydroxypropyl Iminodiacetate Dendrimer, Sodium Propoxy PPG-2 Acetate, Sodium Rapeseedate, Sodium Ricebranamphoacetate, Sodium Ricinoleate, Sodium Ricinoleoamphoacetate, Sodium Rose Hipsamphoacetate, Sodium Rosinate, Sodium Safflowerate, Sodium Safflowerоyl Hydrolyzed Soy Protein, Sodium Sesameseedate, Sodium Sesamphoacetate, Sodium Sheabutteramphoacetate, Sodi-

um Soyate, Sodium Soy Hydrolyzed Collagen, Sodium Stearate, Sodium Stearoamphoacetate, Sodium Stearoamphohydroxypropylsulfonate, Sodium Stearoamphopropionate, Sodium Stearoyl Casein, Sodium Stearoyl Glutamate, Sodium Stearoyl Hyaluronate, Sodium Stearoyl Hydrolyzed Collagen, Sodium Stearoyl Hydrolyzed Corn Protein, Sodium Stearoyl Hydrolyzed Silk, Sodium Stearoyl Hydrolyzed Soy Protein, Sodium Stearoyl Hydrolyzed Wheat Protein, Sodium Stearoyl Lactalbumin, Sodium Stearoyl Methyl Isethionate, Sodium Stearoyl Oat Protein, Sodium Stearoyl Pea Protein, Sodium Stearoyl Soy Protein, Sodium Stearyl Dimethyl Glycine, Sodium Stearyl Sulfate, Sodium Sunflowerseedamphoacetate, Sodium Surfactin, Sodium Sweetalmondamphoacetate, Sodium Sweet Almondate, Sodium Tallamphopropionate, Sodium Tallate, Sodium Tallowamphoacetate, Sodium Tallowate, Sodium Tallow Sulfate, Sodium Tamanuseedate, Sodium Taurate, Sodium Taurine Cocoyl Methyltaurate, Sodium Taurine Laurate, Sodium/TEA-Lauroyl Collagen Amino Acids, Sodium/TEA-Lauroyl Hydrolyzed Collagen, Sodium/TEA-Lauroyl Hydrolyzed Keratin, Sodium/TEA- Lauroyl Keratin Amino Acids, Sodium/TEA-Undecylenoyl Collagen Amino Acids, Sodium/TEA- Undecylenoyl Hydrolyzed Collagen, Sodium/TEA-Undecylenoyl Hydrolyzed Corn Protein, Sodium/TEA-Undecylenoyl Hydrolyzed Soy Protein, Sodium/TEA-Undecylenoyl Hydrolyzed Wheat Protein, Sodium Theobroma Grandiflorum Seedate, Sodium Trideceth-3 Carboxylate, Sodium Trideceth-4 Carboxylate, Sodium Trideceth-6 Carboxylate, Sodium Trideceth-7 Carboxylate, Sodium Trideceth-8 Carboxylate, Sodium Trideceth-12 Carboxylate, Sodium Trideceth-15 Carboxylate, Sodium Trideceth-19 Carboxylate, Sodium Trideceth Sulfate, Sodium Tridecylbenzenesulfonate, Sodium Tridecyl Sulfate, Sodium Trimethylolpropane Hydroxypropyl Iminodiacetate Dendrimer, Sodium Undeceth-5 Carboxylate, Sodium Undecylenate, Sodium Undecylenoamphoacetate, Sodium Undecylenoamphopropionate, Sodium Undecylenoyl Glutamate, Sodium Wheat Germamphoacetate, Sorbeth-160 Tristearate, Soy Acid, Soyamidopropylamine Oxide, Soyamidopropyl Betaine, Soybean Oil Glycereth-8 Esters, Stearamidopropylamine Oxide, Stearamidopropyl Betaine, Stearamine Oxide, Steareth-15, Steareth-16, Steareth-20, Steareth-21, Steareth-25, Steareth-27, Steareth-30, Steareth- 40, Steareth-50, Steareth-80, Steareth-100, Steareth-2 Phosphate, Steareth-3 Phosphate, Stearic Acid, Stearoxypropyltrimonium Chloride, Stearoyl Glutamic Acid, Stearoyl Sarcosine, Stearyl Betaine, Stearyldimoniumhydroxypropyl Butylglucosides Chloride, Stearyldimoniumhydroxypropyl Decylglucosides Chloride, Stearyldimoniumhydroxypropyl Laurylglucosides Chloride, Sulfated Castor Oil, Sulfated Coconut Oil, Sulfated Glyceryl Oleate, Sulfated Olive Oil, Sulfated Peanut Oil, Sunfloweramide MEA, Sunflower Seed Acid, Sunflowerseedamidopropyl Hydroxyethyldimonium Chloride, Sunflower Seed Oil Glycereth-8 Esters, Tall Oil Acid, Tallow Acid, Tallowamidopropylamine Oxide, Tallowamidopropyl Betaine, Tallowamidopropyl Hydroxysultaine, Tallowamine Oxide, Tallow Betaine, Tallow Dihydroxyethyl Betaine, Tallowoyl Ethyl Glucoside, TEA-Abietoyl Hydrolyzed Collagen, TEA-C12-14 Alkyl Phosphate, TEA-C10-15 Alkyl Sulfate, TEA-C11-15 Alkyl Sulfate, TEA- C12-13 Alkyl Sulfate, TEA-C12-14 Alkyl Sulfate, TEA-C12-15 Alkyl Sulfate, TEA C14-17 Alkyl Sec Sulfonate, TEA-Canolate, TEA-Cocamide Diacetate, TEA-Cocoate, TEA-Coco-Sulfate, TEA-Cocoyl Alaninate, TEA-Cocoyl Glutamate, TEA-Cocoyl Glutaminate, TEA-Cocoyl Glycinate, TEA-Cocoyl Hydrolyzed Collagen, TEA-Cocoyl Hydrolyzed Soy Protein, TEA-

Cocoyl Sarcosinate, TEA- Dimethicone PEG-7 Phosphate, TEA-Dodecylbenzenesulfonate, TEA-Hydrogenated Cocoate, TEA- Hydrogenated Tallowoyl Glutamate, TEA-Isostearate, TEA-Isostearoyl Hydrolyzed Collagen, TEA- Lauraminopropionate, TEA-Laurate, TEA-Laurate/Myristate, TEA-Laureth Sulfate, TEA-Lauroyl Collagen Amino Acids, TEA-Lauroyl Glutamate, TEA-Lauroyl Hydrolyzed Collagen, TEA-Lauroyl Keratin Amino Acids, TEA-Lauroyl Methylaminopropionate, TEA-Lauroyl/Myristoyl Aspartate, TEA- Lauroyl Sarcosinate, TEA-Lauryl Phosphate, TEA-Lauryl Sulfate, TEA-Myristaminopropionate, TEA- Myristate, TEA-Myristoyl Hydrolyzed Collagen, TEA-Oleate, TEA-Oleoyl Hydrolyzed Collagen, TEA- Oleoyl Sarcosinate, TEA-Oleyl Sulfate, TEA-Palmitate, TEA-Palm Kernel Sarcosinate, TEA-PEG-3 Cocamide Sulfate, TEA-Rosinate, TEA-Stearate, TEA-Tallate, TEA-T ridecylbenzenesulfonate, TEA- Undecylenate, TEA-Undecylenoyl Hydrolyzed Collagen, Tetramethyl Decynediol, Tetrasodium Dicarboxyethyl Stearyl Sulfosuccinamate, TIPA-Laureth Sulfate, TIPA-Lauryl Sulfate, TIPA-Myristate, TIPA-Stearate, Tocopheryl Phosphate, Trehalose Undecylenoate, TM-C12-15 Pareth-2 Phosphate, TM-C12-15 Pareth-6 Phosphate, TM-C12-15 Pareth-8 Phosphate, TM-C12-15 Pareth-10 Phosphate, Trideceth-20, Trideceth-50, Trideceth-3 Carboxylic Acid, Trideceth-4 Carboxylic Acid, Trideceth-7 Carboxylic Acid, Trideceth-8 Carboxylic Acid, Trideceth-15 Carboxylic Acid, Trideceth-19 Carboxylic Acid, Trideceth-10 Phosphate, Tridecylbenzenesulfonic Acid, Trilaureth-9 Citrate, Trimethylolpropane Hydroxypropyl Bis-Hydroxyethylamine Dendrimer, Trisodium Lauroampho PG-Acetate Chloride Phosphate, Undecanoic Acid, Undeceth-5 Carboxylic Acid, Undecylenamidopropylamine Oxide, Undecylenamidopropyl Betaine, Undecylenic Acid, Undecylenoyl Collagen Amino Acids, Undecylenoyl Glycine, Undecylenoyl Hydrolyzed Collagen, Undecylenoyl Wheat Amino Acids, Undecyl Glucoside, Wheat Germ Acid, Wheat Germamidopropylamine Oxide, Wheat Germamidopropyl Betaine, Yucca Schidigera Leaf/Root/Stem Extract, Yucca Schidigera Stem Extract, Zinc Coceth Sulfatea and Zinc Cocosulfate.

Non-ionic surfactants

[0004] Alkohol alkoxylates. The added nonionic surfactants are preferably alkoxylated and/or propoxylated, particularly primary alcohols having preferably 8 to 18 carbon atoms and an average of 1 to 12 mol ethylene oxide (EO) and/or 1 to 10 mol propylene oxide (PO) per mol alcohol. C_8-C_{16}-Alcohol alkoxylates, advantageously ethoxylated and/or propoxylated C_{10}-C_{15}-alcohol alkoxylates, particularly C_{12}-C_{14} alcohol alkoxylates, with an ethoxylation degree between 2 and 10, preferably between 3 and 8, and/or a propoxylation degree between 1 and 6, preferably between 1.5 and 5, are particularly preferred. The cited degrees of ethoxylation and propoxylation constitute statistical average values that can be a whole or a fractional number for a specific product. Preferred alcohol ethoxylates and propoxylates have a narrowed homolog distribution (narrow range ethoxylates/propoxylates, NRE/NRP). In addition to these nonionic surfactants, fatty alcohols with more than 12 EO can also be used. Examples of these are (tallow) fatty alcohols with 14 EO, 16 EO, 20 EO, 25 EO, 30 EO or 40 EO.

[0005] Alkylglycosides (APG®). Furthermore, as additional nonionic surfactants, alkyl glycosides that satisfy the general Formula $RO(G)_x$, can be added, e.g., as compounds, particularly with anionic surfactants, in which R means a primary linear or methyl-branched, particularly 2-methyl-branched, aliphatic group containing 8 to 22, preferably 12 to 18 carbon atoms and G stands for a glycose unit containing 5 or 6 carbon atoms, preferably for glucose. The degree of oligomerization x, which defines the distribution of monoglycosides and oligoglycosides, is any number between 1 and 10, preferably between 1.1 and 1.4.

[0006] Fatty acid ester alkoxylates. Another class of preferred nonionic surfactants, which are used either as the sole nonionic surfactant or in combination with other nonionic surfactants, in particular, together with alkoxylated fatty alcohols and/or alkyl glycosides, are alkoxylated, preferably ethoxylated or ethoxylated and propoxylated fatty acid alkyl esters preferably containing 1 to 4 carbon atoms in the alkyl chain, more particularly the fatty acid methyl esters which are described, for example, in Japanese Patent Application JP-A-58/217598 or which are preferably produced by the process described in International Patent Application WO-A-90/13533. Methyl esters of C_{12}-C_{18} fatty acids containing an average of 3 to 15 EO, particularly containing an average of 5 to 12 EO, are particularly preferred.

[0007] Amine oxides. Nonionic surfactants of the amine oxide type, for example, N-coco alkyl-N,N-dimethylamine oxide and N-tallow alkyl-N,N-dihydroxyethylamine oxide, and the fatty acid alkanolamides may also be suitable. The quantity in which these nonionic surfactants are used is preferably no more than the quantity in which the ethoxylated fatty alcohols are used and, particularly no more than half that quantity.

[0008] Gemini surfactants. The so-called gemini surfactants can be considered as further surfactants. Generally speaking, such compounds are understood to mean compounds that have two hydrophilic groups and two hydrophobic groups per molecule. As a rule, these groups are separated from one another by a "spacer". The spacer is usually a hydrocarbon chain that is intended to be long enough such that the hydrophilic groups are a sufficient distance apart to be able to act independently of one another. These types of surfactants are generally characterized by an unusually low critical micelle concentration and the ability to strongly reduce the surface tension of water. In exceptional cases, however, not only dimeric but also trimeric surfactants are meant by the term gemini surfactants. Suitable gemini surfactants are, for example, sulfated hydroxy mixed ethers according to German Patent Application DE 4321022 A1 or dimer alcohol bis- and trimer alcohol tris sulfates and ether sulfates according to International Patent Application WO 96/23768 A1. Blocked end group dimeric and trimeric mixed ethers according to German Patent Application DE 19513391 A1 are especially characterized by their bifunctionality and multifunctionality. Gemini polyhydroxyfatty acid amides or polyhydroxyfatty acid amides, such as those described in International Patent Applications WO 95/19953 A1, WO 95/19954 A1 and WO 95/19955 A1 can also be used.

Cationic surfactants

[0009] Tetraalkyl ammonium salts. Cationically active surfactants comprise the hydrophobic high molecular group required for the surface activity in the cation by dissociation in aqueous solution. A group of important representatives of the cationic surfactants are the tetraalkyl ammonium salts of the general formula: $(R^1R^2R^3R^4N^+)$ X^-. Here R1 stands for C_1-C_8 alk(en)yl, R^2, R^3 and R^4, independently of each other, for alk(en)yl radicals having 1 to 22 carbon atoms. X is a counter ion, preferably selected from the group of the halides, alkyl sulfates and alkyl carbonates. Cationic surfactants, in which the nitrogen group is substituted with two long acyl groups and two short alk(en)yl groups, are particularly preferred.

[0010] Esterquats. A further class of cationic surfactants particularly useful as co-surfactants for the present invention is represented by the so-called esterquats. Esterquats are generally understood to be quaternised fatty acid triethanolamine ester salts. These are known compounds which can be obtained by the relevant methods of preparative organic chemistry. Reference is made in this connection to International patent application WO 91/01295 A1, according to which triethanolamine is partly esterified with fatty acids in the presence of hypophosphorous acid, air is passed through the reaction mixture and the whole is then quaternised with dimethyl sulphate or ethylene oxide. In addition, German patent DE 4308794 C1 describes a process for the production of solid esterquats in which the quaternisation of triethanolamine esters is carried out in the presence of suitable dispersants, preferably fatty alcohols.

[0011] Typical examples of esterquats suitable for use in accordance with the invention are products of which the acyl component derives from monocarboxylic acids corresponding to formula RCOOH in which RCO is an acyl group containing 6 to 10 carbon atoms, and the amine component is triethanolamine (TEA). Examples of such monocarboxylic acids are caproic acid, caprylic acid, capric acid and technical mixtures thereof such as, for example, so-called head-fractionated fatty acid. Esterquats of which the acyl component derives from monocarboxylic acids containing 8 to 10 carbon atoms, are preferably used. Other esterquats are those of which the acyl component derives from dicarboxylic acids like malonic acid, succinic acid, maleic acid, fumaric acid, glutaric acid, sorbic acid, pimelic acid, azelaic acid, sebacic acid and/or dodecanedioic acid, but preferably adipic acid. Overall, esterquats of which the acyl component derives from mixtures of monocarboxylic acids containing 6 to 22 carbon atoms, and adipic acid are preferably used. The molar ratio of mono and dicarboxylic acids in the final esterquat may be in the range from 1:99 to 99:1 and is preferably in the range from 50:50 to 90:10 and more particularly in the range from 70:30 to 80:20. Besides the quaternised fatty acid triethanolamine ester salts, other suitable esterquats are quaternized ester salts of mono-/dicarboxylic acid mixtures with diethanolalkyamines or 1,2-dihydroxypropyl dialkylamines. The esterquats may be obtained both from fatty acids and from the corresponding triglycerides in admixture with the corresponding dicarboxylic acids. One such process, which is intended to be representative of the relevant prior art, is

proposed in European patent EP 0750606 B1. To produce the quaternised esters, the mixtures of mono- and dicarboxylic acids and the triethanolamine - based on the available carboxyl functions - may be used in a molar ratio of 1.1:1 to 3:1. With the performance properties of the esterquats in mind, a ratio of 1.2:1 to 2.2:1 and preferably 1.5:1 to 1.9:1 has proved to be particularly advantageous. The preferred esterquats are technical mixtures of mono-, di- and triesters with an average degree of esterification of 1.5 to 1.9.

Amphoteric surfactants

[0012] Betaines. Amphoteric or ampholytic surfactants possess a plurality of functional groups that can ionize in aqueous solution and thereby--depending on the conditions of the medium--lend anionic or cationic character to the compounds (see DIN 53900, July 1972). Close to the isoelectric point (around pH 4), the amphoteric surfactants form inner salts, thus becoming poorly soluble or insoluble in water. Amphoteric surfactants are subdivided into ampholytes and betaines, the latter existing as zwitterions in solution. Ampholytes are amphoteric electrolytes, i.e. compounds that possess both acidic as well as basic hydrophilic groups and therefore behave as acids or as bases depending on the conditions. Especially betaines are known surfactants which are mainly produced by carboxyalkylation, preferably carboxymethylation, of amine compounds. The starting materials are preferably condensed with halocarboxylic acids or salts thereof, more particularly sodium chloroacetate, one mole of salt being formed per mole of betaine. The addition of unsaturated carboxylic acids, such as acrylic acid for example, is also possible. Examples of suitable betaines are the carboxy alkylation products of secondary and, in particular, tertiary amines which correspond to formula $R^1R^2R^3N$-$(CH_2)_qCOOX$ where R^1 is a an alkyl radical having 6 to 22 carbon atoms, R^2 is hydrogen or an alkyl group containing 1 to 4 carbon atoms, R^3 is an alkyl group containing 1 to 4 carbon atoms, q is a number of 1 to 6 and X is an alkali and/or alkaline earth metal or ammonium. Typical examples are the carboxymethylation products of hexylmethylamine, hexyldimethylamine, octyldimethylamine, decyldimethylamine, $C_{12/14}$-cocoalkyldimethyl-amine, myristyldimethylamine, cetyldimethylamine, stearyldimethylamine, stearylethylmethyl-amine, oleyldimethylamine, $C_{16/18}$-tallowalkyldimethylamine and their technical mixtures, and particularly dodecyl methylamine, dodecyl dimethylamine, dodecyl ethylmethylamine and technical mixtures thereof.

[0013] Alkylamido betaines. Other suitable betaines are the carboxyalkylation products of amidoamines corresponding to formula $R^1CO(R^3)(R^4)$-NH-$(CH_2)_p$-N-$(CH_2)_qCOOX$ in which R^1CO is an aliphatic acyl radical having 6 to 22 carbon atoms and 0 or 1 to 3 double bonds, R^2 is hydrogen or an alkyl radical having 1 to 4 carbon atoms, R^3 is an alkyl radical having 1 to 4 carbon atoms, p is a number from 1 to 6, q is a number from 1 to 3 and X is an alkali and/or alkaline earth metal or ammonium. Typical examples are reaction products of fatty acids having 6 to 22 carbon atoms, like for example caproic acid, caprylic acid, caprinic acid, lauric acid, myristic acid, palmitic acid, palmoleic acid, stearic acid, isostearic acid, oleic acid, elaidic

acid, petroselinic acid, linolic acid linoleic acid, elaeostearic acid, arachidonic acid, gadoleic acid, behenic acid, erucic acid and their technical mixtures with N,N-dimethylaminoethylamine, N,N-dimethylaminopropylamine, N,N-diethylaminoethylamine und N,N-diethylaminopropylamine, which are condensed with sodium chloroacetate. The commercially available products include Dehyton® K and Dehyton® PK (Cognis Deutschland GmbH & Co., KG) as well as Tego®Betaine (Goldschmidt).

[0014] Imidazolines. Other suitable starting materials for the betaines to be used for the purposes of the invention are imidazolines. These substances are also known and may be obtained, for example, by cyclizing condensation of 1 or 2 moles of C_6-C_{22} fatty acids with polyfunctional amines, such as for example aminoethyl ethanolamine (AEEA) or diethylenetriamine. The corresponding carboxyalkylation products are mixtures of different open-chain betaines. Typical examples are condensation products of the above- mentioned fatty acids with AEEA, preferably imidazolines based on lauric acid, which are subsequently betainised with sodium chloroacetate. The commercially available products include Dehyton® G (Cognis Deutschland GmbH & Co., KG)

[0015] The amount of (co-)surfactant comprised in the inventive compositions is advantageously 0.1 wt. % to 90 wt. %, particularly 10 wt. % to 80 wt. % and particularly preferably 20 wt. % to 70 wt.-%.

Organic solvents

[0016] Liquid light or heavy duty detergents may comprise organic solvents, preferably those miscible with water. Polydiols, ethers, alcohols, ketones, amides and/or esters are preferably used as the organic solvent for this in amounts of 0 to 90 wt. %, preferably 0.1 to 70 wt. %, particularly 0.1 to 60 wt. %. Low molecular weight polar substances, such as for example, methanol, ethanol, propylene carbonate, acetone, acetonylacetone, diacetone alcohol, ethyl acetate, 2-propanol, ethylene glycol, propylene glycol, glycerin, diethylene glycol, dipropylene glycol monomethyl ether and dimethylformamide or their mixtures are preferred.

Enzymes

[0017] Cellulase Enzymes. Cellulase enzymes optionally used in the instant detergent composition are preferably incorporated, when present, at levels sufficient to provide up to about 5 mg by weight, more preferably about 0.01 mg to about 3 mg, of active enzyme per gram of the composition. Unless stated otherwise, the compositions herein preferably comprise from about 0.001% to about 5%, preferably 0.01%-1% by weight of a commercial enzyme preparation.

[0018] The cellulases suitable for the present invention include either bacterial or fungal cellulase. Preferably, they will have a pH optimum of between 5 and 9.5. Suitable cellulases

are fungal cellulase produced from Humicola insolens and Humicola strain DSM1800 or a cellulase 212-producing fungus belonging to the genus Aeromonas, and cellulase extracted from the hepatopancreas of a marine mollusk (Dolabella Auricula Solander), suitable cellulases are also disclosed in **GB 2,075,028 A**. In addition, cellulase especially suitable for use herein are disclosed in **WO 1992 013057 A1**. Most preferably, the cellulases used in the instant detergent compositions are purchased commercially from NOVO Industries A/S under the product names CAREZYMEO and CELLUZYMEO.

[0019] Other Enzymes. Additional enzymes can be included in the detergent compositions herein for a wide variety of fabric laundering purposes, including removal of protein-based, carbohydrate-based, or triglyceride-based stains, for example, and for the prevention of refugee dye transfer, and for fabric restoration. The additional enzymes to be incorporated include proteases, amylases, lipases, and peroxidases, as well as mixtures thereof. Other types of enzymes can also be included. They can be of any suitable origin, such as vegetable, animal, bacterial, fungal and yeast origin. However, their choice is governed by several factors such as pH-activity and/or stability optima, thermostability, stability versus active detergents, builders as well as their potential to cause malodors during use. In this respect bacterial or fungal enzymes are preferred, such as bacterial amylases and proteases.

[0020] Enzymes are normally incorporated at levels sufficient to provide up to about 5 mg by weight, more typically about 0.01 mg to about 3 mg, of active enzyme per gram of the composition. Stated otherwise, the compositions herein will typically comprise from about 0.001% to about 5%, preferably 0.01%-1% by weight of a commercial enzyme preparation. Protease enzymes are usually present in such commercial preparations at levels sufficient to provide from 0.005 to 0.1 Anson units (AU) of activity per gram of composition.

[0021] Suitable examples of proteases are the subtilisins which are obtained from particular strains of B. subtilis and B. licheniforms. Another suitable protease is obtained from a strain of Bacillus, having maximum activity throughout the pH range of 8-12, developed and sold by Novo Industries A/S under the registered trade name ESPERASE®. The preparation of this enzyme and analogous enzymes is described in GB 1,243,784 of Novo. Proteolytic enzymes suitable for removing protein-based stains that are commercially available include those sold under the trade names ALCALASE® and SAVINASE® by Novo Industries A/S and MAXATASE® by International Bio-Synthetics, Inc.. Other proteases include Protease A; Protease B and proteases made by Genencor International, Inc., according to US 5,204,015 and US 5,244,791.

[0022] Amylases include, for example, alpha-amylases like RAPIDASE®, International Bio-Synthetics, Inc. and TERMAMYL®, Novo Industries.

[0023] Suitable lipase enzymes for detergent usage include those produced by microorganisms of the Pseudomonas group, such as Pseudomonas stutzeri ATCC 19154. This lipase is available from Amano Pharmaceutical Co. Ltd., under the trade name Lipase P "Amano". Other commercial lipases include Amano-CES, lipases ex Chromobacter viscosum,

e.g. Chromobacter viscosum var. lipolyticum NRRLB 3673, commercially available from Toyo Jozo Co., and further Chromobacter viscosum lipases from U.S. Biochemical Corp. and Disoynth Co., and lipases ex Pseudomonas gladioli. The LIPOLASE® enzyme derived from Humicola lanuginosa (commercially available from Novo Industries A/S) is a preferred lipase for use herein.

[0024] Peroxidase enzymes are used in combination with oxygen sources, e.g., percarbonate, perborate, persulfate, hydrogen peroxide, etc. They are used for "solution bleaching," i.e. to prevent transfer of dyes or pigments removed from substrates during wash operations to other substrates in the wash solution. Peroxidase enzymes are known in the art, and include, for example, horseradish peroxidase, ligninase, and haloperoxidase such as chloro- and bromo-peroxidase. Peroxidase-containing detergent compositions are disclosed, for example, in **WO 1989 099813 A1**.

[0025] Enzyme Stabilizers. The enzymes employed herein are stabilized by the presence of water-soluble sources of calcium and/or magnesium ions in the finished detergent compositions which provide such ions to the enzymes. (Calcium ions are generally somewhat more effective than magnesium ions and are preferred herein if only one type of cation is being used.) Additional stability can be provided by the presence of various other art-disclosed stabilizers, especially borate species, see **US 4,537,706**, incorporated herein in its entirety. Typical detergents, especially liquids, will comprise from about 1 to about 30, preferably from about 2 to about 20, more preferably from about 5 to about 15, and most preferably from about 8 to about 12, millimoles of calcium ion per liter of finished composition. In solid detergent compositions the formulation can include a sufficient quantity of a water-soluble calcium ion source to provide such amounts in the laundry liquor. In the alternative, natural water hardness can suffice.

[0026] It is to be understood that the foregoing levels of calcium and/or magnesium ions are sufficient to provide enzyme stability. More calcium and/or magnesium ions can be added to the compositions to provide an additional measure of grease removal performance. Accordingly, as a general proposition the compositions herein will typically comprise from about 0.05% to about 2% by weight of a water-soluble source of calcium or magnesium ions, or both. The amount can vary, of course, with the amount and type of enzyme employed in the composition.

[0027] The compositions herein can also optionally, but preferably, contain various additional stabilizers, especially borate-type stabilizers. Typically, such stabilizers will be used at levels in the compositions from about 0.25% to about 10%, preferably from about 0.5% to about 5%, more preferably from about 0.75% to about 3%, by weight of boric acid or other borate compound capable of forming boric acid in the composition (calculated on the basis of boric acid). Boric acid is preferred, although other compounds such as boric oxide, borax and other alkali metal borates (e.g., sodium ortho-, meta- and pyroborate, and sodium

pentaborate) are suitable. Substituted boric acids (e.g., phenylboronic acid, butane boronic acid, and p-bromo phenylboronic acid) can also be used in place of boric acid.

Builders

[0028] Zeolites. Fine crystalline, synthetic zeolites containing bound water can be used as builders, for example, preferably zeolite A and/or P. Zeolite MAP.RTM. (commercial product of the Crosfield company), is particularly preferred as the zeolite P. However, zeolite X and mixtures of A, X, Y and/or P are also suitable. A co-crystallized sodium/potassium aluminum silicate from Zeolite A and Zeolite X, which is available as Vegobond® RX. (commercial product from Condea Augusta S.p.A.), is also of particular interest. Preferably, the zeolite can be used as a spray-dried powder. For the case where the zeolite is added as a suspension, this can comprise small amounts of nonionic surfactants as stabilizers, for example, 1 to 3 wt. %, based on the zeolite, of ethoxylated C_{12}-C_{18} fatty alcohols with 2 to 5 ethylene oxide groups, C_{12}-C_{14} fatty alcohols with 4 to 5 ethylene oxide groups or ethoxylated isotridecanols. Suitable zeolites have an average particle size of less than 10µm (test method: volumetric distribution Coulter counter) and preferably comprise 18 to 22 wt. %, particularly 20 to 22 wt. % of bound water. Apart from this, phosphates can also be used as builders.

[0029] Layered silicates. Suitable substitutes or partial substitutes for phosphates and zeolites are crystalline, layered sodium silicates. These types of crystalline layered silicates are described, for example, in European Patent Application EP 0164514 A1. Preferred crystalline layered silicates are those obtained for example, from the process described in International Patent Application WO 91/08171 A1.

[0030] Amorphous silicates. Preferred builders also include amorphous sodium silicates with a modulus (Na_2O:SiO_2 ratio) of 1:2 to 1:3.3, preferably 1:2 to 1:2.8 and more preferably 1:2 to 1:2.6, which dissolve with a delay and exhibit multiple wash cycle properties. The delay in dissolution compared with conventional amorphous sodium silicates can have been obtained in various ways, for example, by surface treatment, compounding, compressing/compacting or by over-drying. In the context of this invention, the term "amorphous" also means "X-ray amorphous". In other words, the silicates do not produce any of the sharp X-ray reflexions typical of crystalline substances in X-ray diffraction experiments, but at best one or more maxima of the scattered X-radiation, which have a width of several degrees of the diffraction angle. However, particularly good builder properties may even be achieved where the silicate particles produce indistinct or even sharp diffraction maxima in electron diffraction experiments. This is to be interpreted to mean that the products have microcrystalline regions between 10 and a few hundred nm in size, values of up to at most 50 nm and especially up to at most 20 nm being preferred. This type of X-ray amorphous silicates, which similarly possess a delayed dissolution in comparison with the customary water glasses, are described, for example, in German Patent Application DE 4400024 A1.

Compacted/densified amorphous silicates, compounded amorphous silicates and over dried X-ray-amorphous silicates are particularly preferred.

[0031] Phosphates. Also the generally known phosphates can also be added as builders, in so far that their use should not be avoided on ecological grounds. The sodium salts of the orthophosphates, the pyrophosphates and especially the tripolyphosphates are particularly suitable. Their content is generally not more than 25 wt. %, preferably not more than 20 wt. %, each based on the finished composition. In some cases it has been shown that particularly tripolyphosphates, already in low amounts up to maximum 10 wt. %, based on the finished composition, in combination with other builders, lead to a synergistic improvement of the secondary washing power. Preferred amounts of phosphates are under 10 wt. %, particularly 0 wt. %.

Co-Builders

[0032] Polycarboxylic acids. Useful organic cobuilders are, for example, the polycarboxylic acids usable in the form of their sodium salts of polycarboxylic acids, wherein polycarboxylic acids are understood to be carboxylic acids that carry more than one acid function. These include, for example, citric acid, adipic acid, succinic acid, glutaric acid, malic acid, tartaric acid, maleic acid, fumaric acid, sugar acids, aminocarboxylic acids, nitrilotriacetic acid (NTA) and its derivatives and mixtures thereof. Preferred salts are the salts of polycarboxylic acids such as citric acid, adipic acid, succinic acid, glutaric acid, tartaric acid, sugar acids and mixtures thereof.

[0033] Organic acids. Acids per se can also be used. Besides their building effect, the acids also typically have the property of an acidifying component and, hence also serve to establish a relatively low and mild pH in detergents or cleansing compositions. Citric acid, succinic acid, glutaric acid, adipic acid, gluconic acid and any mixtures thereof are particularly mentioned in this regard. Further suitable acidifiers are the known pH regulators such as sodium hydrogen carbonate and sodium hydrogen sulfate.

[0034] Polymers. Particularly suitable polymeric cobuilders are polyacrylates, which preferably have a molecular weight of 2,000 to 20,000 g/mol. By virtue of their superior solubility, preferred representatives of this group are again the short-chain polyacrylates, which have molecular weights of 2,000 to 10,000 g/mol and, more particularly, 3,000 to 5,000 g/mol. Suitable polymers can also include substances that consist partially or totally of vinyl alcohol units or its derivatives.

[0035] Further suitable copolymeric polycarboxylates are particularly those of acrylic acid with methacrylic acid and of acrylic acid or methacrylic acid with maleic acid. Copolymers of acrylic acid with maleic acid, which comprise 50 to 90 wt. % acrylic acid and 50 to 10 wt. % maleic acid, have proven to be particularly suitable. Their relative molecular weight, based on free acids, generally ranges from 2,000 to 70,000 g/mol, preferably 20,000 to 50,000 g/mol

and especially 30,000 to 40,000 g/mol. The (co)polymeric polycarboxylates can be added either as an aqueous solution or preferably as powder. In order to improve the water solubility, the polymers can also comprise allylsulfonic acids as monomers, such as, for example, allyloxybenzene sulfonic acid and methallyl sulfonic acid as in the **EP 0727448 B1**.

[0036] Biodegradable polymers comprising more than two different monomer units are particularly preferred, examples being those comprising, as monomers, salts of acrylic acid and of maleic acid, and also vinyl alcohol or vinyl alcohol derivatives, as in **DE 4300772 A1**, or those comprising, as monomers, salts of acrylic acid and of 2-alkylallyl sulfonic acid, and also sugar derivatives. Further preferred copolymers are those that are described in German Patent Applications DE 4303320 A1 and **DE 4417734 A1** and preferably include acrolein and acrylic acid/acrylic acid salts or acrolein and vinyl acetate as monomers.

[0037] Similarly, other preferred builders are polymeric aminodicarboxylic acids, salts or precursors thereof. Those polyaspartic acids or their salts and derivatives disclosed in German Patent Application **DE 19540086 A1** as having a bleach-stabilizing action in addition to cobuilder properties are particularly preferred.

[0038] Further suitable builders are polyacetals that can be obtained by treating dialdehydes with polyol carboxylic acids that possess 5 to 7 carbon atoms and at least 3 hydroxyl groups, as described in European Patent Application **EP 0280223 A1**. Preferred polyacetals are obtained from dialdehydes like glyoxal, glutaraldehyde, terephthalaldehyde as well as their mixtures and from polycarboxylic acids like gluconic acid and/or glucoheptonic acid.

[0039] Carbohydrates. Further suitable organic cobuilders are dextrins, for example, oligomers or polymers of carbohydrates that can be obtained by the partial hydrolysis of starches. The hydrolysis can be carried out using typical processes, for example, acidic or enzymatic catalyzed processes. The hydrolysis products preferably have average molecular weights in the range of 400 to 500,000 g/mol. A polysaccharide with a dextrose equivalent (DE) of 0.5 to 40 and, more particularly, 2 to 30 is preferred, the DE being an accepted measure of the reducing effect of a polysaccharide in comparison with dextrose, which has a DE of 100. Both maltodextrins with a DE between 3 and 20 and dry glucose syrups with a DE between 20 and 37 and also so-called yellow dextrins and white dextrins with relatively high molecular weights of 2,000 to 30,000 g/mol may be used. A preferred dextrin is described in British Patent Application 94 19 091.

[0040] The oxidized derivatives of such dextrins concern their reaction products with oxidizing compositions that are capable of oxidizing at least one alcohol function of the saccharide ring to the carboxylic acid function. Such oxidized dextrins and processes for their manufacture are known for example, from European Patent Applications **EP 0232202 A1**. A product oxidized at C6 of the saccharide ring can be particularly advantageous.

[0041] Oxydisuccinates and other derivatives of disuccinates, preferably ethylenediamine disuccinate are also further suitable cobuilders. Here, ethylene diamine-N,N'-disuccinate (EDDS), the synthesis of which is described for example, in **US 3,158,615**, is preferably used

in the form of its sodium or magnesium salts. In this context, glycerine disuccinates and glycerine trisuccinates are also particularly preferred, such as those described in **US 4,524,009**. Suitable addition quantities in zeolite-containing and/or silicate-containing formulations range from 3 to 15% by weight.

[0042] (**Lactones.** Other useful organic co-builders are, for example, acetylated hydroxycarboxylic acids and salts thereof which optionally may also be present in lactone form and which contain at least 4 carbon atoms, at least one hydroxyl group and at most two acid groups. Such cobuilders are described, for example, in International Patent Application **WO 1995 020029 A1**.

Bleaching Compounds, Bleaching Agents and Bleach Activators

[0043] The detergent compositions herein can optionally contain bleaching agents or bleaching compositions containing a bleaching agent and one or more bleach activators. When present, bleaching agents will typically be at levels of from about 1% to about 30%, more typically from about 5% to about 20%, of the detergent composition, especially for fabric laundering. If present, the amount of bleach activators will typically be from about 0.1% to about 60%, more typically from about 0.5% to about 40% of the bleaching composition comprising the bleaching agent-plus-bleach activator.

[0044] The bleaching agents used herein can be any of the bleaching agents useful for detergent compositions in textile cleaning, hard surface cleaning, or other cleaning purposes that are now known or become known. These include oxygen bleaches as well as other bleaching agents. Perborate bleaches, e.g., sodium perborate (e.g., mono- or tetra-hydrate) can be used herein.

[0045] Another category of bleaching agent that can be used without restriction encompasses percarboxylic acid bleaching agents and salts thereof. Suitable examples of this class of agents include magnesium monoperoxyphthalate hexahydrate, the magnesium salt of meta-chloro perbenzoic acid, 4-nonylamino-4-oxoperoxybutyric acid and diperoxydodecanedioic acid.

[0046] Peroxygen bleaching agents can also be used. Suitable peroxygen bleaching compounds include sodium carbonate peroxyhydrate and equivalent "percarbonate" bleaches, sodium pyrophosphate peroxyhydrate, urea peroxyhydrate, and sodium peroxide. Persulfate bleach (e.g., OXONEO®, manufactured commercially by DuPont) can also be used.

[0047] A preferred percarbonate bleach comprises dry particles having an average particle size in the range from about 500 micrometers to about 1,000 micrometers, not more than about 10% by weight of said particles being smaller than about 200 micrometers and not more than about 10% by weight of said particles being larger than about 1,250 micrometers. Optionally, the percarbonate can be coated with silicate, borate or water-soluble surfactants. Percarbonate is available from various commercial sources.

[0048] Mixtures of bleaching agents can also be used.

[0049] Peroxygen bleaching agents, the perborates, the percarbonates, etc., are preferably combined with bleach activators, which lead to the in situ production in aqueous solution (i.e., during the washing process) of the peroxy acid corresponding to the bleach activator. The nonanoyloxybenzene sulfonate (NOBS) and tetraacetyl ethylene diamine (TAED) activators are typical, and mixtures thereof can also be used.

[0050] Preferred amido-derived bleach activators include (6-octanamido-caproyl)oxybenzene-sulfonate, (6-nonanamidocaproyl)oxybenzenesulfonate, (6-decanamido-caproyl)oxyben-zenesulfonate, and mixtures thereof.

[0051] Another class of bleach activators comprises the benzoxazin-type activators disclosed in **US 4,966,723**, incorporated herein by reference.

[0052] Highly preferred lactam activators include benzoyl caprolactam, octanoyl caprolactam, 3,5,5-trimethylhexanoyl caprolactam, nonanoyl caprolactam, decanoyl caprolactam, undecenoyl caprolactam, benzoyl valerolactam, octanoyl valerolactam, decanoyl valerolactam, undecenoyl valerolactam, nonanoyl valerolactam, 3,5,5-trimethylhexanoyl valerolactam and mixtures thereof, optionally adsorbed into solid carriers, e.g acyl caprolactams, preferably benzoyl caprolactam, adsorbed into sodium perborate.

[0053] Bleaching agents other than oxygen bleaching agents are also known in the art and can be utilized herein. One type of non-oxygen bleaching agent of particular interest includes photoactivated bleaching agents such as the sulfonated zinc and/or aluminum phthalocyanines. If used, detergent compositions will typically contain from about 0.025% to about 1.25%, by weight, of such bleaches, especially sulfonate zinc phthalocyanine.

[0054] If desired, the bleaching compounds can be catalyzed by means of a manganese compound. Such manganese-based catalysts are well known in the art and include Mn^{IV}_2 (u-O)$_3$ (1,4,7-trimethyl-1,4,7-triazacyclononane)$_2$ $(PF_6)_2$, Mn^{III}_2 (u-O)$_1$ (u-OAc)$_2$ (1,4,7-trimethyl-1,4,7-triazacyclononane)$_2(ClO_4)_2$, Mn^{IV}_4 (u-O)$_6$ (1,4,7-triazacyclononane)$_4$ $(ClO_4)_4$, $Mn^{III}Mn^{IV}_4$ (u-O)$_1$ (u-OAc)$_2$ (1,4,7-trimethyl-1,4,7-triazacyclononane)$_2$ $(ClO_4)_3$, Mn^{IV} (1,4,7-trimethyl-1,4,7-triazacyclononane)-$(OCH_3)_3$ (PF_6), and mixtures thereof.

[0055] As a practical matter, and not by way of limitation, the compositions and processes herein can be adjusted to provide on the order of at least one part per ten million of the active bleach catalyst species in the aqueous washing liquor, and will preferably provide from about 0.1 ppm to about 700 ppm, more preferably from about 1 ppm to about 500 ppm, of the catalyst species in the laundry liquor.

Polymeric Soil Release Agents

[0056] Any polymeric soil release agent known to those skilled in the art can optionally be employed in the detergent compositions and processes of this invention. Polymeric soil

release agents are characterized by having both hydrophilic segments, to hydrophilize the surface of hydrophobic fibers, such as polyester and nylon, and hydrophobic segments, to deposit upon hydrophobic fibers and remain adhered thereto through completion of washing and rinsing cycles and, thus, serve as an anchor for the hydrophilic segments. This can enable stains occurring subsequent to treatment with the soil release agent to be more easily cleaned in later washing procedures.

[0057] The polymeric soil release agents useful herein especially include those soil release agents having: (a) one or more nonionic hydrophile components consisting essentially of (i) polyoxyethylene segments with a degree of polymerization of at least 2, or (ii) oxypropylene or polyoxypropylene segments with a degree of polymerization of from 2 to 10, wherein said hydrophile segment does not encompass any oxypropylene unit unless it is bonded to adjacent moieties at each end by ether linkages, or (iii) a mixture of oxyalkylene units comprising oxyethylene and from 1 to about 30 oxypropylene units wherein said mixture contains a sufficient amount of oxyethylene units such that the hydrophile component has hydrophilicity great enough to increase the hydrophilicity of conventional polyester synthetic fiber surfaces upon deposit of the soil release agent on such surface, said hydrophile segments preferably comprising at least about 25% oxyethylene units and more preferably, especially for such components having about 20 to 30 oxypropylene units, at least about 50% oxyethylene units; or (b) one or more hydrophobe components comprising (i) C_3 oxyalkylene terephthalate segments, wherein, if said hydrophobe components also comprise oxyethylene terephthalate, the ratio of oxyethylene terephthalate: C_3 oxyalkylene terephthalate units is about 2:1 or lower, (ii) C_4 - C_6 alkylene or oxy C_4 - C_6 alkylene segments, or mixtures therein, (iii) poly (vinyl ester) segments, preferably polyvinyl acetate), having a degree of polymerization of at least 2, or (iv) C_1 - C_4 alkyl ether or C_4 hydroxyalkyl ether substituents, or mixtures therein, wherein said substituents are present in the form of C_1 - C_4 alkyl ether or C_4 hydroxyalkyl ether cellulose derivatives, or mixtures therein, and such cellulose derivatives are amphiphilic, whereby they have a sufficient level of C_1 - C_4 alkyl ether and/or C_4 hydroxyalkyl ether units to deposit upon conventional polyester synthetic fiber surfaces and retain a sufficient level of hydroxyls, once adhered to such conventional synthetic fiber surface, to increase fiber surface hydrophilicity, or a combination of (a) and (b).

[0058] Typically, the polyoxyethylene segments of (a) (i) will have a degree of polymerization of from about 200, although higher levels can be used, preferably from 3 to about 150, more preferably from 6 to about 100. Suitable oxy C_4 - C_6 alkylene hydrophobe segments include, but are not limited to, end-caps of polymeric soil release agents.

[0059] Polymeric soil release agents useful in the present invention also include cellulosic derivatives such as hydroxyether cellulosic polymers, copolymeric blocks of ethylene terephthalate or propylene terephthalate with polyethylene oxide or polypropylene oxide terephthalate, and the like. Such agents are commercially available and include hydroxyethers of cellulose such as METHOCEL® (Dow). Cellulosic soil release agents for use

herein also include those selected from the group consisting of C_1 - C_4 alkyl and C_4 hydroxyalkyl cellulose.

[0060] Soil release agents characterized by poly(vinyl ester) hydrophobe segments include graft copolymers of poly(vinyl ester), e.g., C_1 - C_6 vinyl esters, preferably poly(vinyl acetate) grafted onto polyalkylene oxide backbones, such as polyethylene oxide backbones, see EP 0 219 048, incorporated herein in its entirety. Commercially available soil release agents of this kind include the SOKALAN® type of material, e.g., SOKALAN® HP-22, available from BASF.

[0061] One type of preferred soil release agent is a copolymer having random blocks of ethylene terephthalate and polyethylene oxide (PEO) terephthalate. The molecular weight of this polymeric soil release agent preferably is in the range of from about 25,000 to about 55,000.

[0062] Another preferred polymeric soil release agent is a polyester with repeat units of ethylene terephthalate units contains 10-15% by weight of ethylene terephthalate units together with 90-80% by weight of polyoxyethylene terephthalate units, derived from a polyoxyethylene glycol of average molecular weight 300-5,000. Examples of this polymer include the commercially available material ZELCON® 5126 (from DuPont) and MILEASE® T (from ICI).

[0063] Another preferred polymeric soil release agent is a sulfonated product of a substantially linear ester oligomer comprised of an oligomeric ester backbone of terephthaloyl and oxyalkyleneoxy repeat units and terminal moieties covalently attached to the backbone. These soil release agents are described fully in US 4,968,451. Other suitable polymeric soil release agents include the terephthalate polyesters of US 4,711,730, the anionic end-capped oligomeric esters of US 4,721,580, the block polyester oligomeric compounds of US 4,702,857, and anionic, especially sulfoaroyl, end-capped terephthalate esters of US 4,877,896 all cited patents incorporated herein in their entirety.

[0064] Still another preferred soil release agent is an oligomer with repeat units of terephthaloyl units, sulfoisoterephthaloyl units, oxyethyleneoxy and oxy-1,2-propylene units. The repeat units form the backbone of the oligomer and are preferably terminated with modified isethionate end-caps. A particularly preferred soil release agent of this type comprises about one sulfoisophthaloyl unit, 5 terephthaloyl units, oxyethyleneoxy and oxy-1,2-propyleneoxy units in a ratio of from about 1.7 to about 1.8, and two end-cap units of sodium 2-(2-hydroxyethoxy)-ethanesulfonate. Said soil release agent also comprises from about 0.5% to about 20%, by weight of the oligomer, of a crystalline-reducing stabilizer, preferably selected from the group consisting of xylene sulfonate, cumene sulfonate, toluene sulfonate, and mixtures thereof.

[0065] If utilized, soil release agents will generally comprise from about 0.01% to about 10.0%, by weight, of the detergent compositions herein, typically from about 0.1% to about 5%, preferably from about 0.2% to about 3.0%.

Polymeric dispersing agents

[0066] Polymeric dispersing agents can advantageously be utilized at levels from about 0.1% to about 7%, by weight, in the detergent compositions herein, especially in the presence of zeolite and/or layered silicate builders. Suitable polymeric dispersing agents include polymeric polycarboxylates and polyethylene glycols, although others known in the art can also be used. It is believed, though it is not intended to be limited by theory, that polymeric dispersing agents enhance overall detergent builder performance, when used in combination with other builders (including lower molecular weight polycarboxylates) by crystal growth inhibition, particulate soil release peptization, and anti-redeposition.

[0067] Polymeric polycarboxylate materials can be prepared by polymerizing or copolymerizing suitable unsaturated monomers, preferably in their acid form. Unsaturated monomeric acids that can be polymerized to form suitable polymeric polycarboxylates include acrylic acid, maleic acid (or maleic anhydride), fumaric acid, itaconic acid, aconitic acid, mesaconic acid, citraconic acid and methylenemalonic acid. The presence in the polymeric polycarboxylates herein or monomeric segments, containing no carboxylate radicals such as vinylmethyl ether, styrene, ethylene, etc. is suitable provided that such segments do not constitute more than about 40% by weight.

[0068] Particularly suitable polymeric polycarboxylates can be derived from acrylic acid. Such acrylic acid-based polymers which are useful herein are the water-soluble salts of polymerized acrylic acid. The average molecular weight of such polymers in the acid form preferably ranges from about 2,000 to 10,000, more preferably from about 4,000 to 7,000 and most preferably from about 4,000 to 5,000. Water-soluble salts of such acrylic acid polymers can include, for example, the alkali metal, ammonium and substituted ammonium salts. Soluble polymers of this type are known materials. Use of polyacrylates of this type in detergent compositions has been disclosed, for example **US 3,308,067**.

[0069] Acrylic/maleic-based copolymers can also be used as a preferred component of the dispersing/anti-redeposition agent. Such materials include the water-soluble salts of copolymers of acrylic acid and maleic acid. The average molecular weight of such copolymers in the acid form preferably ranges from about 2,000 to 100,000, more preferably from about 5,000 to 75,000, most preferably from about 7,000 to 65,000. The ratio of acrylate to maleate segments in such copolymers will generally range from about 30:1 to about 1:1, more preferably from about 10:1 to 2:1. Water-soluble salts of such acrylic acid/maleic acid copolymers can include, for example, the alkali metal, ammonium and substituted ammonium salts. Soluble acrylate/maleate copolymers of this type are known materials which are described in EP 0193360 A1, which also describes such polymers comprising hydroxypropylacrylate. Still other useful dispersing agents include the maleic/acrylic/vinyl alcohol terpolymers, for example, a 45/45/10 terpolymer of acrylic/maleic/vinyl alcohol.

[0070] Another polymeric material which can be included is polyethylene glycol (PEG). PEG can exhibit dispersing agent performance as well as act as a clay soil removal-

antiredeposition agent. Typical molecular weight ranges for these purposes range from about 500 to about 100,000, preferably from about 1,000 to about 50,000, more preferably from about 1,500 to about 10,000.

[0071] Polyaspartate and polyglutamate dispersing agents can also be used, especially in conjunction with zeolite builders. Dispersing agents such as polyaspartate preferably have a molecular weight (avg.) of about 10,000.

Foam inhibitors/Sud supressors

[0072] Especially when used in automatic washing processes, it can be advantageous to add conventional foam inhibitors to the compositions. Suitable foam inhibitors include for example, soaps of natural or synthetic origin, which have a high content of C_{18}-C_{24} fatty acids. Suitable non-surface-active types of foam inhibitors are, for example, organopolysiloxanes and mixtures thereof with microfine, optionally silanised silica and also paraffins, waxes, microcrystalline waxes and mixtures thereof with silanised silica or bis-stearyl ethylenediamide. Mixtures of various foam inhibitors, for example, mixtures of silicones, paraffins or waxes, are also used with advantage. Preferably, the foam inhibitors, especially silicone-containing and/or paraffin-containing foam inhibitors, are loaded onto a granular, water-soluble or dispersible carrier material. Especially in this case, mixtures of paraffins and bis-stearylethylene diamides are preferred.

[0073] Compounds for reducing or suppressing the formation of suds can be incorporated into the detergent compositions of the present invention. Suds suppression can be of particular importance in the so-called "high concentration cleaning process" and in front-loading European-style washing machines.

[0074] A wide variety of materials can be used as suds suppressors, and suds suppressors are well known to those skilled in the art. See, for example, Kirk Othmer Encyclopedia of Chemical Technology, Third Edition, Volume 7, pages 430-447 (John Wiley & Sons, Inc., 1979). One category of suds suppressor of particular interest encompasses monocarboxylic fatty acid and soluble salts therein. The monocarboxylic fatty acids and salts thereof used as suds suppressor typically have hydrocarbyl chains of 10 to about 24 carbon atoms, preferably 12 to 18 carbon atoms. Suitable salts include the alkali metal salts such as sodium, potassium, and lithium salts, and ammonium and alkanolammonium salts.

[0075] The detergent compositions herein can also contain non-surfactant suds suppressors. These include, for example: high molecular weight hydrocarbons such as paraffin, fatty acid esters (e.g., fatty acid triglycerides), fatty acid esters of monovalent alcohols, aliphatic C_{18}- C_{40} ketones (e.g., stearone), etc. Other suds inhibitors include N-alkylated amino triazines such as tri- to hexa-alkylmelamines or di- to tetra-alkyldiamine chlortriazines formed as products of cyanuric chloride with two or three moles of a primary or secondary amine containing 1 to 24 carbon atoms, propylene oxide, and monostearyl

phosphates such as monostearyl alcohol phosphate ester and monostearyl di-alkali metal (e.g., K, Na, and Li) phosphates and phosphate esters. The hydrocarbons such as paraffin and haloparaffin can be utilized in liquid form. The liquid hydrocarbons will be liquid at room temperature and atmospheric pressure, and will have a pour point in the range of about -40°C and about 50°C, and a minimum boiling point not less than about 110°C (atmospheric pressure). It is also known to utilize waxy hydrocarbons, preferably having a melting point below about 100°C. Hydrocarbon suds suppressors are known in the art and include aliphatic, alicyclic, aromatic, and heterocyclic saturated or unsaturated hydrocarbons having from about 12 to about 70 carbon atoms. The term "paraffin," as used in this suds suppressor discussion, is intended to include mixtures of true paraffins and cyclic hydrocarbons.

[0076] Another preferred category of non-surfactant suds suppressors comprises silicone suds suppressors. This category includes the use of polyorganosiloxane oils, such as polydimethylsiloxane, dispersions or emulsions of polyorganosiloxane oils or resins, and combinations of polyorganosiloxane with silica particles wherein the polyorganosiloxane is chemisorbed or fused onto the silica. Silicone suds suppressors are well known in the art.

[0077] Other silicone suds suppressors are disclosed in **US 3,455,839**, incorporated herein in its entirety, which relates to compositions and processes for defoaming aqueous solutions by incorporating therein small amounts of polydimethylsiloxane fluids.

[0078] Mixtures of silicone and silanated silica are described, for instance, in **DE-OS 2124526**, incorporated herein in its entirety. Silicone defoamers and suds controlling agents in granular detergent compositions are disclosed in **US 4,652,392**, incorporated herein in its entirety.

[0079] In the preferred silicone suds suppressor used herein, the solvent for a continuous phase is made up of certain polyethylene glycols or polyethylene-polypropylene glycol copolymers or mixtures thereof (preferred), or polypropylene glycol. The primary silicone suds suppressor is branched/crosslinked and preferably not linear.

[0080] The silicone suds suppressor herein preferably comprises polyethylene glycol and a copolymer of polyethylene glycol/polypropylene glycol, all having an average molecular weight of less than about 1,000, preferably between about 100 and 800. The polyethylene glycol and polyethylene/polypropylene copolymers herein have a solubility in water at room temperature of more than about 2 weight %, preferably more than about 5 weight %.

[0081] The preferred solvent herein is polyethylene glycol having an average molecular weight of less than about 1,000, more preferably between about 100 and 800, most preferably between 200 and 400, and a copolymer of polyethylene glycol/polypropylene glycol, preferably PPG 200/PEG 300. Preferred is a weight ratio of between about 1:1 and 1:10, most preferably between 1:3 and 1:6, of polyethylene glycol:copolymer of polyethylene-polypropylene glycol.

[0082] The preferred silicone suds suppressors used herein do not contain polypropylene glycol, particularly of 4,000 molecular weight. They also preferably do not contain block copolymers of ethylene oxide and propylene oxide, like PLURONIC® L101.

[0083] Other suds suppressors useful herein comprise the secondary alcohols (e.g., 2-alkyl alkanols) and mixtures of such alcohols with silicone oils. The secondary alcohols include the C_6 - C_{16} alkyl alcohols having a C_1 - C_{16} chain. A preferred alcohol is 2-butyl octanol, which is available from Condea under the trademark ISOFOL® 12. Mixtures of secondary alcohols are available under the trademark ISALCHEM® 123 from Enichem. Mixed suds suppressors typically comprise mixtures of alcohol+silicone at a weight ratio of 1:5 to 5:1.

[0084] The compositions herein will generally comprise from 0% to about 5% of suds suppressor. When utilized as suds suppressors, monocarboxylic fatty acids, and salts therein, will be present typically in amounts up to about 5%, by weight, of the detergent composition. Preferably, from about 0.5% to about 3% of fatty monocarboxylate suds suppressor is utilized. Silicone suds suppressors are typically utilized in amounts up to about 2.0%, by weight, of the detergent composition, although higher amounts can be used. This upper limit is practical in nature, due primarily to concern with keeping costs minimized and effectiveness of lower amounts for effectively controlling sudsing. Preferably from about 0.01% to about 1% of silicone suds suppressor is used, more preferably from about 0.25% to about 0.5%. As used herein, these weight percentage values include any silica that can be utilized in combination with polyorganosiloxane, as well as any adjunct materials that can be utilized. Monostearyl phosphate suds suppressors are generally utilized in amounts ranging from about 0.1% to about 2%, by weight, of the composition. Hydrocarbon suds suppressors are typically utilized in amounts ranging from about 0.01% to about 5.0%, although higher levels can be used. The alcohol suds suppressors are typically used at 0.2%-3% by weight of the finished compositions.

Sequestrants and chelating agents

[0085] The salts of polyphosphonic acid can be considered as sequestrants or as stabilizers, particularly for peroxy compounds and enzymes, which are sensitive towards heavy metal ions. Here, the sodium salts of, for example, 1-hydroxyethane-1,1-diphosphonate, diethylenetriamine pentamethylene phosphonate or ethylenediamine tetramethylene phosphonate are used in amounts of 0.1 to 5 wt. %.

[0086] The detergent compositions herein can also optionally contain one or more iron and/or manganese chelating agents. Such chelating agents can be selected from the group consisting of amino carboxylates, amino phosphonates, polyfunctionally-substituted aromatic chelating agents and mixtures therein, all as hereinafter defined. Without intending to be bound by theory, it is believed that the benefit of these materials is due in part to their exceptional ability to remove iron and manganese ions from washing solutions by formation of soluble chelates. It is understood that some of the detergent builders described

hereinbefore can function as chelating agents and is such detergent builder is present in a sufficient quantity, it can provide both functions.

[0087] Amino carboxylates useful as optional chelating agents include ethylenediamine-tetracetates, N-hydroxyethylethylenediaminetriacetates, nitrilotriacetates, ethylenediamine tetraproprionates, triethylenetetraaminehexacetates, diethylenetriaminepentaacetates, and ethanoldiglycines, alkali metal, ammonium, and substituted ammonium salts therein and mixtures therein.

[0088] Amino phosphonates are also suitable for use as chelating agents in the compositions of the invention when at lease low levels of total phosphorus are permitted in detergent compositions, and include ethylenediaminetetrakis (methylenephosphonates) as DEQUEST. Preferred, these amino phosphonates to not contain alkyl or alkenyl groups with more than about 6 carbon atoms.

[0089] Polyfunctionally-substituted aromatic chelating agents are also useful in the compositions herein. Preferred compounds of this type in acid form are dihydroxydisulfobenzenes such as 1,2-dihydroxy-3,5-disulfobenzene.

[0090] A preferred biodegradable chelator for use herein is ethylenediamine disuccinate ("EDDS"), especially the [S,S] isomer.

[0091] If utilized, these chelating agents will generally comprise from about 0.1% to about 10% by weight of the detergent compositions herein. More preferably, if utilized, the chelating agents will comprise from about 0.1% to about 3.0% by weight of such compositions.

Clay Soil Removal/Anti-redeposition Agents

[0092] The detergent compositions of the present invention can also optionally contain water-soluble ethoxylated amines having clay soil removal and antiredeposition properties. Granular detergent compositions which contain these compounds typically contain from about 0.01% to about 10.0% by weight of the water-soluble ethoxylates amines; liquid detergent compositions typically contain about 0.01% to about 5%.

[0093] The most preferred soil release and anti-redeposition agent is ethoxylated tetraethylenepentamine. Exemplary ethoxylated amines are further described in **US 4,597,898**. Other groups of preferred clay soil removal-antiredeposition agents are the cationic compounds disclosed in **EP 0111965 A1**, the ethoxylated amine polymers disclosed in **EP 0111984 A1**, the zwitterionic polymers disclosed in **EP 0112592 A1**, and the amine oxides disclosed in **US 4,548,744**. Another type of preferred antiredeposition agent includes the carboxy methyl cellulose (CMC) materials. These materials are well known in the art.

Graying inhibitors

[0094] Graying inhibitors have the function of maintaining the dirt that was removed from the fibers suspended in the washing liquor, thereby preventing the dirt from resettling. Water-soluble colloids of mostly organic nature are suitable for this, for example, the water-soluble salts of (co)polymeric carboxylic acids, glue, gelatins, salts of ether carboxylic acids or ether sulfonic acids of starches or celluloses, or salts of acidic sulfuric acid esters of celluloses or starches. Water-soluble, acid group-containing polyamides are also suitable for this purpose. Moreover, soluble starch preparations and others can be used as the above-mentioned starch products, e.g., degraded starches, aldehyde starches etc. Polyvinyl pyrrolidone can also be used. Preference, however, is given to the use of cellulose ethers such as carboxymethyl cellulose (Na salt), methyl cellulose, hydroxyalkyl celluloses and mixed ethers such as methyl hydroxyethyl cellulose, methyl hydroxypropyl cellulose, methyl carboxymethyl cellulose and mixtures thereof, as well as polyvinyl pyrrolidone, which can be added, for example, in amounts of 0.1 to 5 wt. %, based on the composition.

Optical brighteners and UV adsorbers

[0095] Any optical brighteners or other brightening or whitening agents known in the art can be incorporated at levels typically from about 0.05% to about 1.2%, by weight, into the detergent compositions herein. Commercial optical brighteners which can be useful in the present invention can be classified into subgroups, which include, but are not necessarily limited to, derivatives of stilbene, pyrazoline, coumarin, carboxylic acid, methinecyanines, dibenzothiphene-5,5-dioxide, azoles, 5- and 6-membered-ring heterocycles, and other miscellaneous agents.

[0096] Preferred brighteners include the PHORWHITE® series of brighteners from Verona. Other brighteners disclosed in this reference include: Tinopal® UNPA, Tinopal CBS and Tinopal 5BM; available from Ciba-Geigy; Artic White® CC and Artic White CWD, available from Hilton-Davis; the 2-(4-stryl-phenyl)-2H-napthol [1,2-d]triazoles; 4,4'-bis-(1,2,3-triazol-2-yl)-stilbenes; 4,4'-bis(stryl)bisphenyls; and the aminocoumarins. Specific examples of these brighteners include 4-methyl-7-diethyl-amino coumarin; 1,2-bis(-venzimidazol-2-yl)ethylene; 1,3-diphenyl-phrazolines; 2,5-bis(benzoxazol-2-yl)thiophene; 2-stryl-napth- [1,2-d] oxazole; and 2-(stilbene-4-yl)-2H-naphtho- [1,2-d]triazole. Anionic brighteners are preferred herein.

[0097] The compositions may comprise e.g., derivatives of diaminostilbene disulfonic acid or alkali metal salts thereof as the optical brighteners. Suitable optical brighteners are, for example, salts of 4,4'-bis-(2-anilino-4-morpholino-1,3,5-triazinyl-6-amino)stilbene-2,2'-di-sulfonic acid or compounds of similar structure which contain a diethanolamino group, a methylamino group, an anilino group or a 2-methoxyethylamino group instead of the morpholino group. Brighteners of the substituted diphenylstyryl type may also be present, for example, the alkali metal salts of 4,4'-bis(2-sulfostyryl)diphenyl, 4,4'-bis(4-chloro-3-sulfostyryl)diphenyl or 4-(4-chlorostyryl)-4'-(2-sulfostyryl)diphenyl. Mixtures of the mentioned brighteners may also be used.

[0098] In addition, UV absorbers may also be added. These are compounds with distinct absorption abilities for ultra violet radiation, which contribute as UV stabilizers as well as to improve the light stability of colorants and pigments both for textile fibers as well as for the skin of the wearer of textile products by protecting against the UV radiation that penetrates the fabric. In general, the efficient radiationless deactivating compounds are derivatives of benzophenone, substituted with hydroxyl and/or alkoxy groups, mostly in position(s) 2 and/or 4. Also suitable are substituted benzotriazoles, additionally acrylates that are phenyl-substituted in position 3 (cinnamic acid derivatives), optionally with cyano groups in position 2, salicylates, organic Ni complexes, as well as natural substances such as umbelliferone and the endogenous urocanic acid. In a preferred embodiment, the UV absorbers absorb UV-A and UV-B radiation as well as possible UV-C radiation and re-emit light with blue wavelengths, such that they additionally have an optical brightening effect. Preferred UV absorbers encompass triazine derivatives, e.g., hydroxyaryl-1,3,5-triazine, sulfonated 1,3,5-triazine, o-hydroxyphenylbenzotriazole and 2-aryl-2H-benzotriazole as well as bis(anilinotriazinyl-amino)stilbene disulfonic acid and their derivatives. Ultra violet absorbing pigments like titanium dioxide can also be used as UV absorbers.

Dye Transfer Inhibiting Agents

[0099] The detergent compositions of the present invention can also include one or more materials effective for inhibiting the transfer of dyes from one fabric to another during the cleaning process. Generally, such dye transfer inhibiting agents include polyvinyl pyrrolidone polymers, polyamine N-oxide polymers, copolymers of N-vinylpyrrolidone and N-vinylimidazole, manganese phthalocyanine, peroxidases, and mixtures thereof. If used, these agents typically comprise from about 0.01% to about 10% by weight of the composition, preferably from about 0.01% to about 5%, and more preferably from about 0.05% to about 2%.

[00100] More specifically, the polyamine N-oxide polymers preferred for use herein are described in **US 6,491,728**, incorporated herein by reference.

[00101] Any polymer backbone can be used as long as the amine oxide polymer formed is water-soluble and has dye transfer inhibiting properties. Examples of suitable polymeric backbones are polyvinyls, polyalkylenes, polyesters, polyethers, polyamide, polyimides, polyacrylates and mixtures thereof. These polymers include random or block copolymers where one monomer type is an amine N-oxide and the other monomer type is an N-oxide. The amine N-oxide polymers typically have a ratio of amine to the amine N-oxide of 10:1 to 1:1,000,000. However, the number of amine oxide groups present in the polyamine oxide polymer can be varied by appropriate copolymerization or by an appropriate degree of N-oxidation. The polyamine oxides can be obtained in almost any degree of polymerization. Typically, the average molecular weight is within the range of 500 to 1,000,000; more

preferred 1,000 to 500,000; most preferred 5,000 to 100,000. This preferred class of materials can be referred to as "PVNO".

[00102] The most preferred polyamine N-oxide useful in the detergent compositions herein is poly(4-vinylpyridine-N-oxide) which as an average molecular weight of about 50,000 and an amine to amine N-oxide ratio of about 1:4.

[00103] Copolymers of N-vinylpyrrolidone and N-vinylimidazole polymers (referred to as a class as "PVPVI") are also preferred for use herein. Preferably the PVPVI has an average molecular weight range from 5,000 to 1,000,000, more preferably from 5,000 to 200,000, and most preferably from 10,000 to 20,000. The PVPVI copolymers typically have a molar ratio of N-vinylimidazole to N-vinylpyrrolidone from 1:1 to 0.2:1, more preferably from 0.8:1 to 0.3:1, most preferably from 0.6:1 to 0.4:1. These copolymers can be either linear or branched.

[00104] The present invention compositions also can employ a polyvinylpyrrolidone ("PVP") having an average molecular weight of from about 5,000 to about 400,000, preferably from about 5,000 to about 200,000, and more preferably from about 5,000 to about 50,000. PVP's are known to persons skilled in the detergent field. Compositions containing PVP can also contain polyethylene glycol ("PEG") having an average molecular weight from about 500 to about 100,000, preferably from about 1,000 to about 10,000. Preferably, the ratio of PEG to PVP on a ppm basis delivered in wash solutions is from about 2:1 to about 50:1, and more preferably from about 3:1 to about 10:1.

[00105] The detergent compositions herein can also optionally contain from about 0.005% to 5% by weight of certain types of hydrophilic optical brighteners which also provide a dye transfer inhibition action. If used, the compositions herein will preferably comprise from about 0.01% to 1% by weight of such optical brighteners.

[00106] One preferred brightener is 4,4',-bis[(4-anilino-6-(N-2-bis-hydroxyethyl)-s-triazine-2-yl)amino]-2,2'-stilbenedisulfonic acid and disodium salt. This particular brightener species is commercially marketed under the trade name Tinopal-UNPA-GX® by Ciba-Geigy Corporation. Tinopal-UNPA-GX is the preferred hydrophilic optical brightener useful in the detergent compositions herein.

[00107] Another preferred brightener is 4,4'-bis[(4-anilino-6-(N-2-hydroxyethyl-N-methylamino)-s-triazine-2-yl)amino]2,2'-stilbenedisulfonic acid disodium salt. This particular brightener species is commercially marketed under the trade name Tinopal 5BM-GX® by Ciba-Geigy Corporation.

[00108] Another preferred brightener brightener is 4,4'-bis[(4-anilino-6-morphilino-s-triazine-2-yl)amino]2,2'-stilbenedisulfonic acid, sodium salt. This particular brightener species is commercially marketed under the trade name Tinopal AMS-GX® by Ciba Geigy Corporation.

[00109] The specific optical brightener species selected for use in the present invention provide especially effective dye transfer inhibition performance benefits when used in

combination with the selected polymeric dye transfer inhibiting agents hereinbefore described. The combination of such selected polymeric materials (e.g., PVNO and/or PVPVI) with such selected optical brighteners (e.g., Tinopal UNPA-GX, Tinopal 5BM-GX and/or Tinopal AMS-GX) provides significantly better dye transfer inhibition in aqueous wash solutions than does either of these two detergent composition components when used alone. Without being bound by theory, it is believed that such brighteners work this way because they have high affinity for fabrics in the wash solution and therefore deposit relatively quick on these fabrics. The extent to which brighteners deposit on fabrics in the wash solution can be defined by a parameter called the "exhaustion coefficient". The exhaustion coefficient is in general as the ratio of a) the brightener material deposited on fabric to b) the initial brightener concentration in the wash liquor. Brighteners with relatively high exhaustion coefficients are the most suitable for inhibiting dye transfer in the context of the present invention.

[00110] Of course, it will be appreciated that other, conventional optical brightener types of compounds can optionally be used in the present compositions to provide conventional fabric "brightness" benefits, rather than a true dye transfer inhibiting effect. Such usage is conventional and well-known to detergent formulations.

Thickeners

[00111] The compositions can also comprise common thickeners and anti-deposition compositions as well as viscosity regulators such as polyacrylates, polycarboxylic acids, polysaccharides and their derivatives, polyurethanes, polyvinyl pyrrolidones, castor oil derivatives, polyamine derivatives such as quaternized and/or ethoxylated hexamethylenediamines as well as any mixtures thereof. Preferred compositions have a viscosity below 10,000 mPa*s, measured with a Brookfield viscosimeter at a temperature of 20°C and a shear rate of 50 min^{-1}.

Inorganic salts

[00112] Further suitable ingredients of the composition are water-soluble inorganic salts such as bicarbonates, carbonates, amorphous silicates or mixtures of these; alkali carbonate and amorphous silicate are particularly used, principally sodium silicate with a molar ratio $Na_2O:SiO_2$ of 1:1 to 1:4.5, preferably of 1:2 to 1:3.5. Preferred compositions comprise alkaline salts, builders and/or cobuilders, preferably sodium carbonate, zeolite, crystalline, layered sodium silicates and/or trisodium citrate, in amounts of 0.5 to 70 wt. %, preferably 0.5 to 50 wt. %, particularly 0.5 to 30 wt. % anhydrous substance.

Perfumes and colorants

[00113] The compositions can comprise further typical detergent and cleansing composition ingredients such as perfumes and/or colorants, wherein such colorants are preferred that leave no or negligible coloration on the fabrics being washed. Preferred amounts of the totality of the added colorants are below 1 wt. %, preferably below 0.1 wt. %, based on the composition. The compositions can also comprise white pigments such as e.g., TiO_2.

INDUSTRIAL APPLICATION

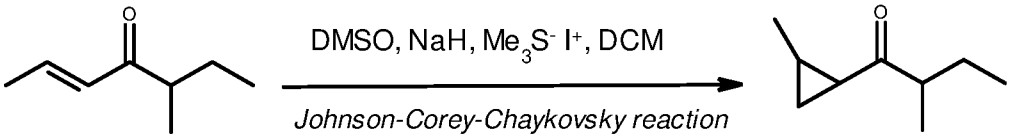
[0089] another object of the present invention refers to the use of the cyclopropyl derivatives according to the invention as fragrances.

EXAMPLES

Example 1

Synthesis of 2-methyl-1-(2-methylcyclopropyl)butan-1-one (isomers of 1:1)

[0090] Cyclopropanation of 5-Methylhept-2-en-4-one (via Johnson–Corey–Chaykovsky reaction) following the procedure known in literature providing the title compound.



MS: 140, 125, 112, 98, 83, 69, 55, 41, 29.

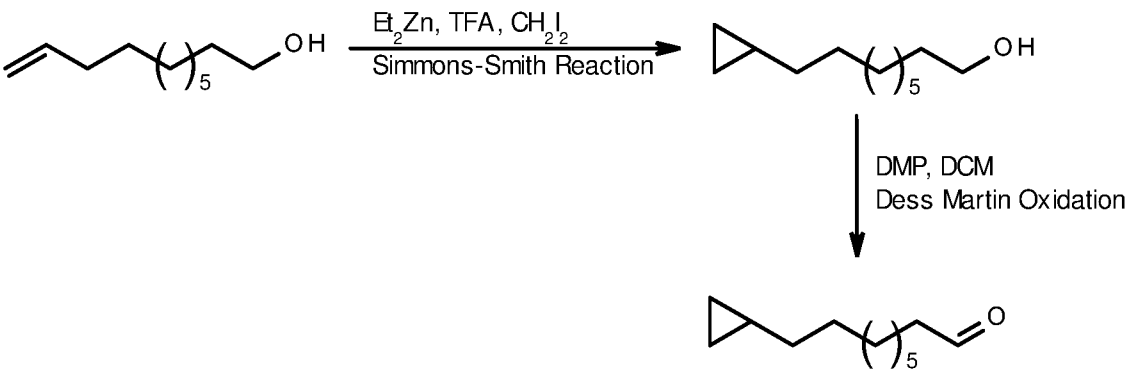
^{1}H NMR (400 MHz, $CDCl_3$) δ 2.57 (dtq, *J* = 10.6, 6.7, 3.2 Hz, 2H), 1.80 – 1.65 (m, 4H), 1.45 (dqt, *J* = 13.3, 6.3, 3.1 Hz, 2H), 1.38 – 1.28 (m, 2H), 1.29 – 1.17 (m, 2H), 1.16 – 1.08 (m, 12H), 0.90 (*t*, *J* = 7.4 Hz, 3H), 0.89 (*t*, *J* = 7.5 Hz, 3H), 0.74 – 0.62 (m, 2H).

^{13}C NMR (101 MHz, $CDCl_3$) δ 213.97, 213.96, 48.73, 48.66, 28.35, 28.27, 26.06, 25.98, 20.08, 20.02, 19.08, 19.06, 18.14, 18.10, 15.82, 15.71, 11.71, 11.68.

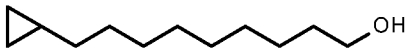
Odor: minty, fresh, nutty

Example 2

Two-step synthesis of 9-cyclopropylnonanal

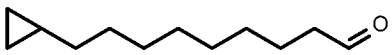


(1) Synthesis of 9-cyclopropylnonan-1-ol



[0091] Under N_2 atmosphere, to a suspension of Et_2Zn (99.4 mL, 89.42 mmol) and DCM (90 mL), between 0 and 5 °C pre-dissolved solution of Trifluoroacetic acid (6.64 mL, 89.42 mmol) in DCM (45 mL) was very slowly added and reaction maintained at same temperature for 30 min. Later added CH_2I_2 (7.21 mL, 89.42 mmol) in DCM (45 mL) and maintained for 30 min, followed by addition alcohol (9 mL, 44.71 mmol) in DCM (45 mL). Reaction maintained at room temperature for over the night (~ 20 h) and quenched with sat. NH_4Cl (200 mL), compound extracted from aqueous layer using cyclohexane (100 mL x 3). Combined Organic layer washed with sat. $NaHCO_3$, water, brine and dried over Na_2SO_4, filtered and evaporated to the crude (10.6 g). Purification by classical column chromatography (cyclohexane: Ethyl Acetate) gave the title compound as colorless oil (6.54 g, 79%)

(2) Synthesis of 9-cyclopropylnonanal



Exact Mass: 182.17
Molecular Formula: $C_{12}H_{22}O$

[0092] To a suspension of Dess-Martin periodinane (22.56 g, 53.19 mmol) in DCM (395 mL) was added pre-dissolved solution of 9-cyclopropylnonan-1-ol (6.54 g, 35.46 mmol) in DCM (40 mL) and reaction maintained at room temperature for over the night (~ 20 h). To this added Et_2O (400 mL) and washed with 1M NaOH (500 mL x 2), dried over Na_2SO_4, filtered and evaporated to the crude (6.3 g). Purification by classical column chromatography (cyclohexane: Diethyl ether) gave the title compound as colorless oil (4.99 g, 77%) with a very strong odor note.

MS: 182, 135, 126, 111, 97, 81, 67, 55, 41, 29

^{1}H NMR (400 MHz, C_6D_6) δ 9.34 (*t*, *J* = 1.7 Hz, 1H), 1.82 (*t*d, *J* = 7.3, 1.7 Hz, 2H), 1.45 – 0.99 (m, 14H), 0.61 (dddt, *J* = 13.0, 8.2, 6.9, 3.4 Hz, 1H), 0.46 – 0.34 (m, 2H), 0.06 – 0.00 (m, 2H).

^{13}C NMR (101 MHz, C_6D_6) δ 200.71, 43.91, 35.15, 30.06, 29.86, 29.72, 29.72 29.41, 22.25, 11.32, 4.86, 4.86.

Odor: strong aldehyde, soapy, green, watery

WHAT CLAIMED IS

1. A cyclopropyl derivative according to formula (I)

R^1-R^2 (I)

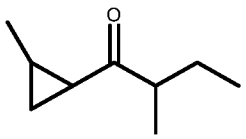
wherein

- R^1 represents a cyclopropyl or C_1-C_6-alkylcyclopropyl residue;
- R^2 stands for a -CO-R^3 or $–(CH_2)_n$-R^4 radical;
- R^3 stands for linear or branched C_1-C_6 alkyl;
- R^4 stands for -CH_2OH or -CH=O; and
- n stands for an integer of from 1 to 12.

2. The cyclopropyl derivative according to Claim 1, wherein R^2 stands for -CO-R^3 and R^3 for a linear or branched alkyl group with 3 or 4 carbon atoms.

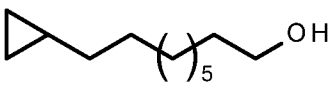
3. The cyclopropyl derivative according to Claim 1, wherein R^2 stands for $–(CH_2)_n$-R^4, R^4 stands for -CH=O and n for an integer of from 8 to 10.

4. The cyclopropyl derivative according to Claim 1 represented by formula (II):

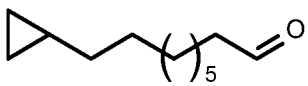


(II)

5. The cyclopropyl derivative according to Claim 1 represented by formula (III) or (IV)



(III)



(IV)

or mixtures thereof.

6. A process for obtaining cyclopropyl derivatives according to formula (I)

R^1-R^2 (I)

wherein

- R^1 represents a cyclopropyl or C_1-C_6-alkylcyclopropyl residue;
- R^2 stands for a -CO-R^3 radical; and
- R^3 stands for linear or branched C_1-C_6 alkyl;

by means of a *Johnson–Corey–Chaykovsky reaction*, wherein an enone according to formula (V)

CH_3-CH=CH-R^2 (V)

in which R^2 has the above-referenced meaning, is subjected to cyclopropanation in the presence of a sulfur ylide having the structure $Me_3S^-Hal^+$, wherein Hal stands for bromine, chlorine or iodine.

7. The process of Claim 6, wherein the reaction is conducted in the presence of DMSO and sodium hydride.

8. A process for obtaining cyclopropyl derivatives according to formula (I)

R^1-R^2 (I)

wherein

- R^1 represents a cyclopropyl or C_1-C^6-alkylcyclopropyl residue;
- R^2 stands for a–$(CH_2)_n$-R^4 radical;
- R^4 stands for -CH_2OH or -CH=O; and
- n stands for an integer of from 1 to 12

by means of a *Simmons-Smith reaction*, wherein

(a) in a first step an ω-unsaturated aliphatic alcohol according to formula (VI)

CH_2=CH-$(CH_2)_n$-CH_2OH

in which n has the above-referenced meanings is subjected to cyclopropanation in the presence of an organozinc carbenoid having the structure Hal-ZnCH_2-Hal and wherein Hal stands for bromine, chlorine or preferably iodine, and optionally

(b) the hydroxyl group of the reaction product obtained from step (i) is subjected to oxidation to form an aldehyde group.

9. The process of Claim 8, wherein the reaction is conducted in the presence of an organozinc carbenoid having the structure Hal-ZnCH_2-Hal, wherein Hal stands for bromine, chlorine or iodine.

10. The process of Claim 6 or Claim 8, wherein the reaction is carried out in dichloromethane or chloroform as a solvent.

11. A perfume mixture comprising or consisting of

(a) at least one cyclopropyl derivative according to formula (I) as the primary fragrance and

(b) at least one secondary fragrance different from (a).

12. The mixture of Claim 11, wherein said components (a) and (b) are present in a ration by weight of from about 0.01:99.99 to 10:90.

13. The mixture of Claim 11 further comprising a solvent.

14. A cosmetic, personal care or detergent composition comprising the cyclopropyl derivatives of Claim 1 or the perfume mixture of Claim 11.

15. The use of the cyclopropyl derivatives of Claim 1 as fragrances.

INTERNATIONAL SEARCH REPORT

International application No
PCT/EP2022/064914

A. CLASSIFICATION OF SUBJECT MATTER
INV. C07C31/133 C07C47/11 C07C49/293 C11B9/00
ADD.

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
C07C C11B

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)
EPO-Internal, WPI Data, CHEM ABS Data

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	Von Ranson Christof ET AL: "Untersuchungen zur Struktur-Aktivitiitsbeziehung bei Geruchsstoffen 3. Mitteilung: Wahrnehmungs-und Erkennungsschwellenwerte sowie Geruchsqualitiiten alicyclischer und aromatischer Aldehyde *", Z Lebensm Unters Forsch, 1 January 1992 (1992-01-01), pages 523-526, XP093014081, Retrieved from the Internet: URL:https://link.springer.com/content/pdf/10.1007/BF01204556.pdf [retrieved on 2023-01-16] table 1; compounds 30-37 ----- -/--	1,11-15

[x] Further documents are listed in the continuation of Box C.

[x] See patent family annex.

* Special categories of cited documents :

"A" document defining the general state of the art which is not considered to be of particular relevance

"E" earlier application or patent but published on or after the international filing date

"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)

"O" document referring to an oral disclosure, use, exhibition or other means

"P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance;; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance;; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art

"&" document member of the same patent family

Date of the actual completion of the international search	Date of mailing of the international search report
19 January 2023	22/03/2023

Name and mailing address of the ISA/	Authorized officer
European Patent Office, P.B. 5818 Patentlaan 2 NL - 2280 HV Rijswijk Tel. (+31-70) 340-2040, Fax: (+31-70) 340-3016	Österle, Carmen

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Form PCT/ISA/210 (second sheet) (April 2005)

C(Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	FROLOV ANDRIY I. ET AL: "Selective [alpha]-Methylation of Ketones", THE JOURNAL OF ORGANIC CHEMISTRY, vol. 86, no. 11, 27 May 2021 (2021-05-27), pages 7333-7346, XP093013079, ISSN: 0022-3263, DOI: 10.1021/acs.joc.1c00148 Retrieved from the Internet: URL:https://pubs.acs.org/doi/pdf/10.1021/acs.joc.1c00148> figure 2; compound 3(23)	1
X	CN 107 698 507 A (HEDING NANJING PHARMACEUTICAL TECH CO LTD) 16 February 2018 (2018-02-16) claim 1; compound 2	1
X	WO 2019/106000 A1 (FIRMENICH CO LTD) 6 June 2019 (2019-06-06) 1-(2-methylcyclopropyl)ethan-1-one; page 28, line 14; example 7	1
X	Blake Keith W ET AL: "Synthesis of Some Substituted Pyrrolidines from Cyclopropyl Carbonyl Compounds", Journal of the Chemical Society. Perkin transactions I, 1 January 1981 (1981-01-01), pages 700-702, XP093013101, Retrieved from the Internet: URL:https://pubs.rsc.org/en/content/articlepdf/1981/p1/p19810000700 [retrieved on 2023-01-11] compounds 1,2	1,2
X	DATABASE Registry [Online] Chemical Abstracts Service, Columbus, OH, US; 2 March 2014 (2014-03-02), Anonymous ET AL: "Abstract", XP093014435, retrieved from STN Database accession no. 1559136-73-0 abstract	1,2,4
X	DATABASE Registry [Online] Chemical Abstracts Service, Columbus, OH; 27 February 2019 (2019-02-27), Anonymous: "1-[2-(1,1-dimethylethyl)cyclopropyl]-2-methyl-1-Butanone,", XP093014436, retrieved from STN Database accession no. 2274729-76-7 abstract	1,2

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INTERNATIONAL SEARCH REPORT

International application No
PCT/EP2022/064914

C(Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	DATABASE Registry [Online] Chemical Abstracts Service, Columbus, OH; 17 June 2016 (2016-06-17), Anonymous: "1-[(1R,2R)-2-Ethylcyclopropyl]-2-methyl-1 -butanone", XP093014437, retrieved from STN Database accession no. 1933786-21-0 abstract ----- DATABASE Registry [Online] Chemical Abstracts Service, Columbus, OH; 5 February 2016 (2016-02-05), Anonymous: "2-Methyl-1-[2-(2-methylpropyl)cyclopropyl]-1-butanone", XP093014438, retrieved from STN Database accession no. 1860504-26-2 abstract ----- DATABASE Registry [Online] Chemical Abstracts Service, Columbus, OH; 5 February 2016 (2016-02-05), Anonymous: "1-(2-ethylcyclopropyl)-2-methyl-1-butanon e", XP093014439, retrieved from STN Database accession no. 1860368-31-5 abstract ----- Heravi Majid M: "Developments of Corey-Chaykovsky in Organic Reactions and Total Synthesis of Natural Products", Current Organic Synthesis, 1 January 2016 (2016-01-01), pages 308-333, XP093015617, DOI: 10.2174/1570179412666150710182304 Retrieved from the Internet: URL:10.2174/1570179412666150710182304 [retrieved on 2023-01-19] page 309 -----	1,2 1,2 1,2 6,7,10

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INTERNATIONAL SEARCH REPORT

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PCT/EP2022/064914

Box No. II Observations where certain claims were found unsearchable (Continuation of item 2 of first sheet)

This international search report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☐ Claims Nos.:
because they relate to subject matter not required to be searched by this Authority, namely:

2. ☐ Claims Nos.:
because they relate to parts of the international application that do not comply with the prescribed requirements to such an extent that no meaningful international search can be carried out, specifically:

3. ☐ Claims Nos.:
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

Box No. III Observations where unity of invention is lacking (Continuation of item 3 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

see additional sheet

1. ☐ As all required additional search fees were timely paid by the applicant, this international search report covers all searchable claims.

2. ☐ As all searchable claims could be searched without effort justifying an additional fees, this Authority did not invite payment of additional fees.

3. ☐ As only some of the required additional search fees were timely paid by the applicant, this international search report covers only those claims for which fees were paid, specifically claims Nos.:

4. ☒ No required additional search fees were timely paid by the applicant. Consequently, this international search report is restricted to the invention first mentioned in the claims;; it is covered by claims Nos.:

2, 4(completely); 1, 6, 7, 10-15(partially)

Remark on Protest

☐ The additional search fees were accompanied by the applicant's protest and, where applicable, the payment of a protest fee.

☐ The additional search fees were accompanied by the applicant's protest but the applicable protest fee was not paid within the time limit specified in the invitation.

☐ No protest accompanied the payment of additional search fees.

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

This International Searching Authority found multiple (groups of) inventions in this international application, as follows:

1. claims: 2, 4(completely); 1, 6, 7, 10-15(partially)

Compounds of claim 1 for which R2 is defined as -CO-R3 radical, process for preparing these compounds, perfume mixture or cosmetic composition comprising said compounds, or the use of said compound as fragrance.

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2. claims: 3, 5, 8, 9(completely); 1, 6, 7, 10-15(partially)

Compounds of claim 1 for which R2 is defined as -(CH2)n-R4 radical, process for preparing these compounds, perfume mixture or cosmetic composition comprising said compounds, or the use of said compound as fragrance.

INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No
PCT/EP2022/064914

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
CN 107698507 A	16-02-2018	NONE	
WO 2019106000 A1	06-06-2019	CN 111183136 A	19-05-2020
		EP 3668850 A1	24-06-2020
		ES 2887600 T3	23-12-2021
		IL 273372 A	31-05-2020
		JP 7191947 B2	19-12-2022
		JP 2021504299 A	15-02-2021
		US 2020299254 A1	24-09-2020
		WO 2019106000 A1	06-06-2019