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(54) Benævnelse: **Detergent Composition and Care Composition containing Polyoxyalkylene Carboxylate**

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Description

[0001] This application relates to compositions containing at least one glycolipid biosurfactant and at least one alkoxylated fatty acid amide. The alkoxylated surfactant or surfactants are based on fatty acids from vegetable oils and have an exceptionally high proportion of long-chain (≥ C17), mostly unsaturated hydrocarbon chains, whereas the polyoxyalkylene carboxylate is present in a ratio of ≥ 1: 6 to the biosurfactant. Another object is the use as detergents, care compositions and cleaners.

State of the art

[0002] The present invention is directed to a composition having improved cleaning performance, especially for carbohydrate-containing soil and stains, as well as a method for improving the cleaning performance of a detergent and cleaning composition and the use of the composition.

[0003] The removal of carbohydrate-containing contaminants is useful in personal care, fabric care and surface cleaning, e.g. especially important in the food sector.

[0004] In personal hygiene, fungi or bacteria play a central role, especially in diseased skin, such as Propionibacterium acnes (acne), Streptococci (dental plaque), Malassezia furfur (dandruff). It is known that surfactants modify the permeability of the biological membranes and thus act antibacterial, antiviral or fungicidal. For example, EP 209 783 (Wella) discloses sophorolipids and their use as antidandruff agents and bacteriostatic agent.

[0005] Apart from the antimicrobial effect, however, it is of utmost importance to preemptively prevent the colonization by microorganisms. This is possible by depriving the microorganisms of their food base - which consists primarily of carbohydrates.

[0006] In particular, carbohydrates may affect dental health, as they can be degraded by certain types of bacteria in the oral cavity, for example, to lactic acid and so can support the formation of cavities.

[0007] Another aspect of hygienic body cleansing is the removal of the frequently pathogenic metabolic products. For example, Malassezia furfur produces fluorescent pigments which are associated with the pathogenic effect.

[0008] Carbohydrate removal is also important in facial care and shaving. In particular, the face is exposed to environmental influences and dirt. For example, pollen, whose main component is carbohydrates, as well as soot and dust particles, can adsorb to skin and hair.

[0009] Furthermore, in body care, where limits are set by temperature, mechanics and ingredients, the removal of stains, such as for example make-up, through a mild surfactant system is a challenge for product developers. Therefore it is important for body cleansing, whether on the skin or the hair, not only to achieve a good removal of carbohydrates, but also to remove colour or pigment dirt.

[0010] In textile care, colored starch and sugar stains, such as tomato, carrot or mustard stains, but also grass stains based on cellulose, are usually removed by enzymes and / or bleaching agents. The absence of these detergent raw materials has advantages for the stability of the formulation as well as for the environment. It is therefore desirable to achieve a high cleaning performance for carbohydrate stains through the surfactant system alone.

[0011] Furthermore, the thorough cleaning on surfaces of all kinds is required. In the food sector, for example, carbohydrate deposits of food are found. These are often persistent and the cleaning agents used accordingly aggressive. Furthermore, detergents with a low toxicological profile are required in the food sector, while at the same time requiring special, technically demanding properties, such as, for example, good carbohydrate removal at acidic pH. For example, the cleaning of breweries requires the simultaneous removal of carbohydrate deposits of sugar and starch as well as of beer stone deposits. Microorganisms sometimes find shelter in the porous beer stone deposits, which often makes them less susceptible to alkaline treatment.

[0012] In addition to the requirement for surfactant systems to be used flexibly in a broad pH range, the demand for environmentally friendly and toxicologically safe ingredients is growing. As a standard in the detergent industry as primary surfactants sodium lauryl sulfate or sodium lauryl ether sulfate and alkyl polyglycosides (APGs) are used, not least because of the advantageous cost-benefit consideration. These surfactants prove to be robust over a high pH range, compatible with almost all common ingredients and thus flexibly applicable with a good cleaning performance against all common types of dirt.

[0013] However, the sustainability of these surfactants is increasingly called into question because they are based on petroleum or vegetable oils from tropical monocultures. These vegetable oils, for example coconut or palm kernel oil, are used because of their technical properties such as advantageous foam, washing and cleaning performance, they have thanks to their high lauric acid content (C12).

[0014] However, it is a fact that the uncontrolled clearing of valuable tropical rainforests to gain acreage for palm oil is threatening many animal and plant species. The cultivation of palm oil meanwhile is considered as the largest climate killer of our century by the media. An alternative for detergent and cleaning compositions is not available until today.

[0015] To a lesser extent, animal oils and fats, in particular beef tallow, have always been used for cleaning compositions. Due to the fatty acid composition, these can only be used to a limited extent in certain applications. From a consumer point of view, animal raw materials are often undesirable for hygienic (e.g., TSE-problematic) and ethical (e.g., vegan-trend) reasons. Furthermore, vegetable soap has been used for millennia for washing and cleaning purposes, whose application is also limited due to the formation of lime soap and requirement of an alkaline pH.

[0016] The challenge, therefore, is to abstain from mineral oil, animal fats and oils, as well as palm oils (ie palm oil, palm kernel oil, coconut oil, babassu oil) as the source of fatty acids and instead to use to the

greatest possible extent surfactants from less problematic sources, such as vegetable oils from European cultivation or fermentation.

[0017] Technically, this is a problem because of available oils, for example from Central Europe, the desired lauric acid cannot be obtained to a sufficient degree.

[0018] Glycolipid biosurfactants, which can be produced by fermentation from a wide variety of substrates, meet the requirements of sustainability and are also characterized by low skin irritation potential and toxicity. In contrast to synthetic glycolipids, e.g. Alkyl polyglycosides, sorbitan esters, methyl glycoside esters or methyl glucamides, biosurfactant glycolipids are produced via microorganisms and no chemical reaction steps are necessary. However, for many applications it is necessary to combine glycolipid biosurfactants with other surfactants to obtain optimal cleaning performance.

[0019] According to the state of the art, this again is done in combination with surfactants based on lauric acid from palm or petrochemical origin; usually with anionic sulfur-containing surfactants such as sodium lauryl sulfate or sodium lauryl ether sulfate.

[0020] The prior art discloses combinations of glycolipid biosurfactants with anionic and nonionic non-glycolipidic surfactants having alkyl chain lengths of C8-C18, DE19600743 (Henkel) discloses mixtures of glucoselipids and sophorolipids with different surfactants for dishwashing detergents. In the examples, combinations are disclosed with surfactants based on lauric acid for synergistic enhancement in rinse performance, dispersancy and foaming power.

[0021] WO2011051161A1 (Henkel) discloses low-residue hard surface cleaners containing a glycolipid biosurfactant and a solvent. The examples disclose surfactant combinations with C12-C14 surfactants.

[0022] EP 0 499434 A1 (Unilever): Combination of at least one glycolipid biosurfactant and at least one non-glycolipidic anionic or nonionic surfactant, one each of the surfactants being in the micellar and one in the lamellar phase. The disclosed laundry detergents are characterized by an increased oil-dissolving power of the textiles.

[0023] EP 1 445 302 A1 / US 2014113818 (Ecover): combination of at least one glycolipid biosurfactant and at least one non-glycolipidic surfactant, each in the micellar phase. All solutions presented contain short-chain, saturated hydrocarbon chains as the hydrophobic part of the surfactants. The presence of the biosurfactant and the further surfactant in the micellar phase allows to achieve an increased average cleaning performance on standard stains or mineral oil with only little foaming.

[0024] JP 2009275145 (Seraya) discloses blends for skin cleansing with sophorolipids in combination with soaps. By combining soaps with glycolipids, a better rinse of the soap is achieved.

[0025] WO 2012617815 (Ecover) discloses blends based on concentrated sophorolipid blends of 70-99% which are hydrolyzed with other C12 fatty acid based surfactants and mixed with sodium cocoamphoacetate as cosurfactant to reinforce the foam.

[0026] WO 2016050439 (Evonik) discloses biosurfactant formulations having improved foaming and fat-dissolving properties containing at least one surfactant selected from the group of betaines, alkoxylated fatty alcohol sulfates and alkylamine oxides.

[0027] Especially in the case of acidic cleaners and detergents, mainly C12-C18 surfactants based on sulfur compounds are used as anionic surfactants in combination with biosurfactants. Examples of disclosed combinations (WO2014166796, WO2014 / 118095) include, for example, sulfates, sulfonates, isethionates, sulfosuccinates and the like, in particular lauryl ether sulfates and lauryl sulfonates.

[0028] WO 2016/066464 (Henkel) discloses detergents containing mannosylerythritol for greasy and oily stains in combination with C12-C14 and C12-C18 ether sulfates and ethoxylated alcohols, respectively.

[0029] Furthermore known from EP 0499434, US 5520839 is the combination of biosurfactants with anionic surfactants including rapeseed soap for improved oil and fat solubility.

[0030] US 2004/0265264 (Beiersdorf) discloses the use of sodium PEG-7 olive oil carboxylate in "catalytic" amounts to reduce skin irritation by sodium laureth sulfate. In WO 2013098066 (Evonik) sodium PEG-7 olive oil carboxylate is used in comparatively small amounts together with additional lauryl-based surfactants and sophorolipid for a baby cleanser. The exemplary embodiment discloses the sensory positive effect on the skin by the combination of biosurfactants with oleic acid, the cleaning performance is not mentioned. DE 10147049 (Beiersdorf) discloses surfactant mixtures of sodium cocoyl glutamate, sodium myristyl ether sulfate and sodium PEG-7 olive oil carboxylate, which selectively wash out surface lipids instead of sebum lipids and thus reduce skin roughness.

[0031] But this does not solve the problem of producing environmentally friendly cleaners with biosurfactant glycolipids and surfactants based on vegetable oils with a high content of long-chain (≥ C18) and predominantly unsaturated fatty acids, which simultaneously have a high cleaning performance, in particular on carbohydrates and color contaminations, and are applicable over a wide pH range and are preferably biodegradable.

[0032] The complex technical problem of the invention has been to identify one or more surfactants based on vegetable oil which can be combined with biosurfactant glycolipids. In contrast to previously existing combinations, the fatty acids of the surfactants should not be obtained from coconut, palm, babassu or palm kernel vegetable oils due to sustainability considerations. This is technically demanding insofar as the desired surfactants have a high proportion of unsaturated, long fatty acid residues ≥ C18 instead of lauric acid, which confer in commonly used surfactant concentrations completely new properties such as foam, stability, cleaning performance, compatibility, and others. At the same time, the novel surfactant combinations should have a good cleaning performance, even beyond grease and oil soiling; i.e. a high cleaning performance on specific stains such as carbohydrate stains or colored stains. Furthermore, it was an aim to use one and the same surfactant mixture over a broad pH range, as well as to combine it with different ingredients in order to have a basis for different uses for the sake of good economy and cost efficiency. For this purpose the mixtures must be stable even in acidic pH, unlike, for example, soap.

[0033] The compositions according to the invention should preferably be based to the greatest possible extent on natural raw materials and be readily biodegradable.

Description of the invention

[0034] Surprisingly, it has been found that binary combinations of glycolipid biosurfactants with polyoxyalkylene carboxylates based on C-18 vegetable oils as described in the claims, achieve one or more of the stated objects, wherein the polyoxyalkylene carboxylates is present in a ratio of ≥ 1: 6 to the biosurfactant. The compositions are described in the claims 1-5, 10-12. Unexpectedly, it has been found that the compositions according to the invention show a cleaning action on specific soils which cannot be foreseen in any way by the person skilled in the art. This allows the production of environmentally friendly compositions, even for stubborn soils such as colored stains or carbohydrate impurities.

[0035] It has been found that, contrary to expectations, the compositions according to the invention act synergistically on the dissolution of carbohydrate spots. Synergistic is understood to mean that the stain-removing power of the mixture is higher than the stain-removing power of the individual components. In the enzyme-free embodiment, a comparable cleaning performance is achieved to enzyme-containing market products.

[0036] Surprisingly, a synergistic effect on colored spots was also found. A marked improvement of bleachable stains is also observed in the bleach-free embodiment.

[0037] Furthermore, the object of this application is the use of the inventive compositions as or for the production of detergents, care and cleaning compositions for synthetic, biological or natural surfaces, hard or flexible surfaces, as well as for textiles, carpets or natural fibers.

[0038] In a further subject of the invention, the invention is directed to a washing and cleaning process comprising

a) the provision of a washing and cleaning solution comprising a composition according to the first subject of the invention

b) contacting a surface or textiles, carpets or natural fibers with the washing solution according to (a).

[0039] A special product form are solid substrates, such as wipes. These are soaked in a preparation and have the advantage that the correct dosage already is available. This meets in particular the consumer's request for convenience, they are easy to handle, they can be used directly without additional steps and they are good to use on the go, e.g. on travel, even if no water is available.

[0040] Wipes are made of textiles which may be woven, knitted or croached or present as a composite in nonwoven, paper, wadding or felt, whereas nonwovens being mostly made of polypropylene, polyester or viscose.

[0041] Substrate impregnated substrates and wipes can be made in a variety of ways, the dipping, wiping and spraying processes. The latter is used in particular for non or low foaming preparations.

[0042] It is advantageous that the compositions according to the invention can be used over the entire pH range, thus allowing a broad range of products.

[0043] A further advantage of the compositions according to the invention is that they foam, the foam stability in the agent being surprisingly high.

[0044] Surprisingly, the compositions also show a high lime release power in acidic solution.

[0045] Another advantage is that the inventive composition is characterized by a high stability. The composition according to the invention is also disclosed in a preservative-free embodiment.

[0046] Furthermore, the compositions surprisingly show such a high washing and cleaning power that the common surfactants cocoamidopropylbetaine and lauryl sulfate based on palm kernel oil can be left out, which can irritate skin and mucous membranes in higher doses. One embodiment is therefore free of sulfur surfactants, in particular free of lauryl sulfate and lauryl ether sulfate and allows for the "sulfate-free" trend.

[0047] Furthermore, the compositions according to the invention develop a stable foam and thus make it unnecessary to use alkylamidobetaines, monoethanolamides and diethanolamides. These substances have a considerable irritation potential. A preferred embodiment is therefore free from alkylamidobetaine, such as cocoamidopropyl betaine. Another preferred embodiment is free from mono- and diethanolamides, such as cocamide DEA, cocamide MEA and the like.

Definitions:

[0048] Technically, the vegetable oils from oil palms, babassu, palm kernels, or coconuts clearly differ in the fatty acid composition of the inventive C-18 vegetable oils:
In this invention, the following vegetable oils, fats, waxes or resins are referred to as C-18 vegetable oil:
Preferably, the C-18 vegetable oils are natural triglycerides. C-18 vegetable oils have a mixture of saturated and unsaturated fatty acids, whereas the fatty acid distribution of fatty acids having 18 or more carbon atoms is more than 60% by weight, more preferably more than 72% by weight and most preferably more than 77% by weight and wherein the proportion of unsaturated fatty acids is over 55 wt .-%, preferably over 65 wt .-% and particularly preferably over 72 wt .-%.

[0049] The proportion of fatty acids having 16 and fewer carbon atoms is preferably less than 30% by weight, more preferably less than 27% by weight and most preferably less than 17% by weight.
Preferably, the C-18 vegetable oils contain a proportion of fatty acids having 6 carbon atoms of < 0.5%, particularly preferably > 0.05%.

[0050] Preferably, the C-18 vegetable oils contain a proportion of of hydroxy fatty acids of < 75% by weight, preferably < 25% by weight, particularly preferably < 5% by weight.

[0051] Preferably, C-18 vegetable oils contain saturated or unsaturated fatty acids having 20 or more carbon atoms, whereas their content may be up to 96% by weight. C-18 vegetable oils preferably contain a proportion of saturated or unsaturated fatty acids having 20 or more carbon atoms of > 0.01% by weight and particularly preferably > 0.05% by weight and very particularly preferably > 0.1% by weight and extremely preferably > = 0.2 wt .-%.

[0052] The C-18 vegetable oils preferably contain less than 95 % by weight of oleic acid, more preferably less than 85% by weight of oleic acid.

[0053] Wt.-% here in each case based on the total content of fatty acids in vegetable oil.

[0054] From the following plants or plant parts, such as seeds, kernel, fruits, leaves, roots and others, hereinafter referred to as C-18 plants, C-18 vegetable oils can be obtained, which meet the technical characteristics of fatty acid compositions for the inventive compositions and are defined as follows: amaranth, anise, apple, apricot, argan, arnica, avocado, cotton, borage, nettle, broccoli, canola, chia, hemp, hazelnut, beech, boxwood, thistle, spelt, peanut, tigernut, lilac, garden cress, barley, pomegranate, oat, hemp, hazelnut, blueberry, elderberry, jasmine, currant, St. John's wort, jojoba, camellia, chamomile, caraway, carrot, cherry, coriander, mullein, crambe, caper spurge, cruciferaceae, squash, Iberian dragon head, lavender, camelina, linseed, privet, lupine, lucerne, macadamia, corn, almond, marula, mirabelle, melon, poppy, mongongo, evening primrose, olive, oil radish, rocket, passion flower, pecan, peach, plum, pistachio, cranberry, purging nut (jatropha), rapeseed, rice, calendula, turnip rape, safflower, sage, sea buckthorn, black cumin, sesame, sesame leaf, mustard, sunflower, soy, tobacco, walnut, grape, wheat, meadowfoam and wild rose; as well as their combinations.

[0055] Preferably, the oil is selected from the group: apricot, avocado, cotton, broccoli, beech, thistle, spelled, tigernut, barley, hemp, hazelnut, jojoba, cherry, mullein, crambe, caper spurge, squash, Iberian dragon head, camelina, linseed, lupine, lucerne, macadamia, almond, corn, poppy, evening primrose, olive, oil radish, rocket, peach, rapeseed, rice, marigold, turnip rape, safflower, sage, sea buckthorn, black cumin, sesame, sesame leaf, mustard, sunflower, soy, tobacco, walnut, grape and wheat, and their combinations.

[0056] Most preferably, the oil is selected from the group apricot, thistle, tigernut, hemp, crambe, Iberian dragon head, camelina, linseed, lupine, lucerne, corn, almond, olive, oil radish, peach, rapeseed, turnip rape, sesame, sesame leaf, sunflower, soy, grape and wheat, as well as their combinations.

[0057] The term oils is used in this invention as representative of fats, waxes and resins.

[0058] In the context of the present invention, unless stated otherwise, based on or derived from vegetable oils, fats or waxes stands for derivatives of fatty acids, purified or as a mixture, and / or their reaction products, such as addition products to the double bond, reactions on the fatty acid function, such as fatty alcohols and their ethers and / or carboxy ethers, amines or fatty acid amides, fatty acid esters, and imines. Preferably, these fatty acid derivatives are present as a mixture according to the fatty acid distribution in the native oil or as they are obtained from the reaction of naturally occurring vegetable oils or fats.

[0059] In the context of the present invention are fatty acids or fatty alcohols or their derivatives, unless stated otherwise - representative of branched or unbranched, linear or substituted, in particular hydroxy-substituted, saturated, mono- or polyunsaturated carboxylic acids or alcohols or derivatives with preferably 6 to 24 carbon atoms.

[0060] Surfactant in the context of this invention is understood to mean amphiphilic organic substances having surface-active properties which adsorb to the interface between two liquids, such as oil and water, and have the ability to reduce the surface tension of water. In solution, surfactants tend to self-aggregate and form structures such as micelles, lamellar structures and the like. In the context of this invention, surfactants are compounds which have the ability to reduce the surface tension of water, at 20°C and at a concentration of 0.5 % by weight relative to the total amount of the preparation to less than 45 mN/m.

[0061] PEGylated vegetable oils are ethoxylated vegetable oils as defined in " Safety Assessment of PEGylated Oils as Used in Cosmetics ", International Journal of Toxicology November / December 2014, 33 . In the context of this invention, the terminology used in cosmetic ingredients is applied, which describes the etherification and esterification products of glycerides and fatty acids with ethylene oxide. In the context of the invention, in particular representatives derived from C-18 plants are preferred; PEGylated fatty acid glycerides are mono-, di- and / or triglycerides which have been modified with a specific number of alkylene glycol units, mostly ethylene glycol units, and may contain reaction by-products. In the context of this invention, PEGylated fatty acid glycerides are defined as in "Safety Assessment of PEGylated Alkyl Glycerides as Used in Cosmetics", Cosmetic Ingredient Review (CIR) 2014. It should be noted that CIR under "Alkyl" also takes into account unsaturated fatty acids. In the context of the invention, in particular representatives derived from C-18 plants are preferred;

Unless otherwise stated, in the context of this invention biosurfactant is the biosurfactant glycolipid defined in accordance with the invention.

[0062] In the context of this application, "sulfuric surfactants" stands for anionic or amphoteric surfactants having a sulfur-containing hydrophilic radical, such as e.g. alkyl sulfates, alkyl ether sulfates, (alkoxylated) sulfosuccinates, (alkoxylated) sulfonates, (alkoxylated) isethionates, (alkoxylated) taurates, sulfobetaines and sultaines. Examples of sulphate-containing surfactants are sodium laureth sulphates, sodium lauryl sulphates, ammonium laureth sulphates, ammonium lauryl sulphates, sodium myreth sulphates, sodium coco sulphates, sodium trideceth sulphates or MIPA laureth sulphates.

[0063] Free from sulfuric surfactants, phosphates, phosphonates means that the formulation does not contain significant amounts of sulfuric surfactants, phosphates, phosphonates. In particular, this is understood to mean that sulfuric surfactants, phosphates, phosphonates in each case are present in amounts of less than 0.1 wt .-%, preferably less than 0.01 wt .-% based on the total formulation, in particular no detectable amounts are included.

[0064] "At least one" as used herein refers to 1 or more, for example, 1, 2, 3, 4, 5, 6, 7, 8, 9 or more.

[0065] In the context of the invention, "washing, care and cleaning composition" is understood to mean a means for removing undesired soiling or deposits, such as for example, stains, residues, impurities, metabolic products of biological processes from natural or biological surfaces, hard surfaces, as well as textiles, carpets or natural fibers. The composition can purify, increase the attractiveness of a person, maintain the health of teeth, skin and hair, including shaving, beautify and care. The term includes animal care and cleaning.

The agents can be rubbed in, dosed, sprayed, foamed and other methods (e.g. B. anoint, hang up, etc.) directly or via an aid such as a cloth, diluted or undiluted, are applied to the material to be cleaned, skin, hair, etc.

[0066] The compositions may be applied diluted or undiluted to the substrate to be cleaned, to skin, to hair, etc. by rubbing, dosing, spraying, foaming and other methods (e.g. anointing, applying, etc.) directly or through an aid such as a wipe.

[0067] "Cleaning performance" or "detergency" is understood to mean in the context of this invention the removal of one or more stains.

[0068] The removal can be detected metrologically or visually by brightening or reduction of the soiling.

[0069] Staining or color stains, are understood to mean both, dye and pigment stains.

[0070] The HLB value (hydrophilic-lipophilic balance) is a measure of the hydrophilicity or lipophilicity of a substance, usually a nonionic surfactant. The value can theoretically be measured as described in relevant literature (e.g. by the Griffin method) or experimentally determined by comparing the solubility behavior with standard compositions with known HLB.

[0071] Substances which also serve as ingredients of cosmetic products are in the following, where appropriate, referred to according to the International Nomenclature Cosmetic Ingredient (INCI) nomenclature. The INCI names are to be taken from the "International Cosmetic Ingredient Dictionary and Handbook, 13th Edition (2010)". Publisher: The Personal Care Products Council.

[0072] Unless otherwise stated, the amounts given are percentages by weight (% by weight) of the total composition. The percentages given refer to active contents.

[0073] A first object of the invention is directed to an composition comprising at least one alkoxylated surfactant (A) from the group of the polyoxyalkylene carboxylates (I or II) and at least one glycolipid biosurfactant (B) comprising rhamnolipids, sophorolipids, trehaloselipids, mannosylerythritollipids, and cellobioselipids, wherein the polyoxyalkylene carboxylate is present in a ratio of ≥ 1: 6 to the biosurfactant; based on weight percent of active agent in the total agent ;.

Ratio (A): (B)

[0074] The surfactant (s) and the glycolipid biosurfactant (s) (B) are present in a ratio (A) :(B) ≥ 1: 6, for example 1: 6, 1: 5, 1: 4, 1: 3, 1: 2, 1: 1, 2: 1, 3: 1, etc. The surfactants (A) are preferably present in in a

ratio to the glycolipid biosurfactants (B) between (A) :(B) ≦ 10: 1 and ≥1: 5; particularly preferably (A): (B) ≦ 10: 1 and ≥ 1: 3; most preferably (A): (B) ≤ 10: 1 and ≥1: 2; in each case based on the weight percent active content in the total composition.

Surfactant (A): Polyoxyalkylene Carboxylate or Carboxylic Acid

[0075] Polyoxyethylene carboxylates preferably are present as mixtures and preferably follow formula (I). Furthermore, the product mixture may contain secondary components, such as free polyoxyalkylene chains, other glycerides, starting materials and others.

$$R'\text{-}O(C_bH_{2b}O)_o\text{-}\{CH_2\text{-}CH[O(C_bH_{2b}O)_pR'']\text{-}CH_2O\}_r\text{-}(C_bH_{2b}O)_q\text{-}R''' \qquad (I)$$

where

b is an integer between 2 and 4, preferably 2 or 3, more preferably 2,

o, p, q are, independently of one another, numbers from 0 to 75, where o + p + q is at least 2. The numbers o, p, q represent the degree of ethoxylation. Although these numbers can only assume integers including zero at the molecular level, the total degree of ethoxylation x can be given as a decimal number, since this represents the stoichiometric equivalents of butylene, propylene or ethylene oxide,

r is 0 or 1,

R', R" and R'" are each, independently of one another, H, CH_2COOM, or COR, wherein one or two, preferably one of the radicals R', R" and R'" represents CH_2COOM: if R' = CH_2COOM then o ≠ 0, if R" = CH_2COOM then p ≠ 0, if R'" = CH_2COOM then q ≠ 0, with **M** = H, alkali or ammonium cation, and wherein one or two of the radicals R', R" and R'" represent RCO;

with **R** a saturated, mono- or polyunsaturated hydrocarbon chain having 5-23 carbon atoms and RCO derived from a fatty acid mixture, wherein the proportion of 18 or more carbon atoms of the fatty acid radical RCO is over 60 wt.-%, preferably over 72 wt.-% and particularly preferably over 77% by weight;

and wherein the proportion of unsaturated fatty acid radicals is over 55% by weight, preferably over 65% by weight and particularly preferably over 72% by weight, in each case based on the total proportion of fatty acid radicals RCO of the surfactant (I) used;

and wherein the surfactant (I) consists of a mixture of different chain lengths and saturation levels of the fatty acid radical RCO as defined above and is derived from a C-18 vegetable oil from the group comprising: amaranth, anise, apple, apricot, argan, arnica, avocado, cotton, borage, nettle, broccoli, canola, chia, hemp, hazelnut, beech, boxwood, thistle, spelt, peanut, tigernut, lilac, garden cress, barley, pomegranate, oat, hemp, hazelnut, blueberry, elderberry, jasmine, currant, St. John's wort, jojoba, camellia, chamomile, caraway, carrot, cherry, coriander, mullein, crambe, caper

spurge, squash, iberian dragon head, lavender, camelina, linseed, privet, lupine, lucerne, macademia, corn, almond, marula, mirabelle, melon, poppy, mongongo, moringa, evening primrose, olive, oil radish, rocket, passionflower, pecan nut, peach, plum, pistachio, cranberry, purging nut (jatropha), rapeseed, rice, marigold, turnip rape, safflower, sage, sea buckthorn, black cumin, sesame, sesame leaf, mustard, sunflower, soya, tobacco, walnut, grape, wheat, meadowfoam and wild rose; as well as their combinations.

[0076] Preferably, the fatty acid radicals RCO with a proportion of 20 or more carbon atoms is preferably > 0.01% by weight, more preferably > 0.05% by weight and particularly preferably ≥ 0.1% by weight and extremely preferably> = 0.2% by weight ,

[0077] Preferably, the proportion of the fatty acid radicals RCO with fatty acids of 16 and fewer carbon atoms is less than 30% by weight, more preferably less than 27% by weight and particularly preferably less than 17% by weight; preferably, the proportion of the fatty acid radicals RCO with fatty acids of 6 and less carbon atoms is < 0.5%, particularly preferably < 0.05%;
the proportion of hydroxyl fatty acid radicals is preferably < 75% by weight, more preferably < 25% by weight, particularly preferably < 5% by weight;
preferably, the proportion of fatty acid radicals RCO with 20 or more carbon atoms can be up to 96% by weight; preferably, the proportion of the oleic fatty acid radicals RCO is less than 95 wt.-%, more preferably less than 85 wt.-%, each based on the total amount of fatty acid radicals RCO of the surfactant (I) used;

[0078] Surfactants of this class according to the invention are preferably obtained by the reaction of monochloroacetic acid known to those skilled in the art at a terminal hydroxyl group of an alkoxylated fatty acid ester, an alkoxylated alkyl glyceride, preferably a mono- or diglyceride, an alkoxylated polyglyceride, or an alkoxylated C-18 vegetable oil, or their mixtures and then neutralized with an alkali.

[0079] The product mixtures obtained for b = 2 are generally referred to as (II) or (III):

metal PEG-x vegetable oil carboxylate (II)

metal PEG-x vegetable glyceride carboxylate or metal vegetable oil glycereth-x carboxylate (III)

[0080] With metal = alkali metal cation, alkaline earth metal cation, ammonium cation (i.e. carboxylate) or H (i.e. carboxylic acid)
with degree of ethoxylation x = 2-75, preferably 2-20, more preferably 2-8.

Exemplary representatives of the products suitable according to the invention are

[0081] sodium PEG-6 almond oil carboxylate, sodium PEG-8 almond oil carboxylate, sodium PEG-8 apricot kernel oil carboxylate, sodium PEG -8 Buxus Chinensis Oil carboxylate, sodium PEG-6 apricot kernel carboxylate, sodium PEG-40 apricot kernel carboxylate, sodium PEG-8 argan oil carboxylate, sodium PEG-8 avocado oil carboxylate, sodium PEG-11 avocado oil carboxylate, sodium PEG-8 borage

seed oil carboxylate, sodium PEG-8 Macademia Tenuifolia oil carboxylate, sodium PEG-6 corn oil carboxylate, sodium PEG-8 corn oil carboxylate, sodium PEG-8 grape seed carboxylate, sodium PEG-8 hazelnut oil carboxylate, sodium PEG-8 flaxseed oil carboxylate, sodium PEG-6 olive oil carboxylate, sodium PEG-7 olive oil carboxylate, potassium PEG-7 olive oil carboxylate, sodium PEG-8 Olea Europaea oil carboxylate, ammonium PEG-7 olive oil carboxylate, PEG-7 olive oil carboxylic acid, sodium PEG-8 olive oil carboxylate, sodium PEG-10 olive oil carboxylate, sodium PEG-8 Oryza sativa oil carboxylate, sodium PEG-8 Prunus dulcis carboxylate, sodium PEG-8 Persea Gratissma oil carboxylate, sodium PEG-8 Passiflora edulis seed oil carboxylate, sodium PEG-6 peanut oil carboxylate, sodium PEG-45 Crambe Absyssinica Seed oil carboxylate, sodium PEG-75 meadowfoam Carboxylate, sodium PEG-8 pumpkin seed carboxylate, sodium PEG-3 rapeseed oil carboxylate, sodium PEG-20 rapeseed oil carboxylate, sodium PEG -8 thistle oil carboxylate, sodium PEG-8 Schinziophyton Rautanell Core oil carboxylate, sodium PEG-8 sesame seed carboxylate, sodium PEG-8 Senum Indicum oil carboxylate, sodium PEG-8 soybean carboxylate, sodium PEG-20 soy carboxylate, sodium PEG-36 soy carboxylate, sodium PEG-8 sunflower oil carboxylate, sodium PEG-32 sunflower oil carboxylate, sodium PEG-8 sweet almond oil carboxylate, sodium PEG-8 watermelon kernel carboxylat, sodium PEG-8 wheat germ carboxylate, sodium PEG-8 Zea Corn oil carboxylate,

[0082] sodium PEG-6 almond glyceride carboxylate, sodium almond oil glycereth-8 carboxylate, sodium PEG-20 almond glyceride carboxylate, potassium PEG-35 almond glyceride carboxylate, ammonium PEG 60 almond glyceride carboxylate, sodium avocado oil glycereth-8 carboxylate, sodium PEG-11 avocado glyceride carboxylate, sodium argan oil glycereth-8 carboxylate, sodium almond oil glycereth-8 carboxylate, sodium PEG-14 almond glyceride carboxylate, sodium corn oil glycereth-8 carboxylate, sodium PEG-20 corn glyceride carboxylate, sodium PEG-60 corn glyceride carboxylate, sodium PEG-20 Evening Primrose glyceride carboxylate, sodium PEG-60 Evening Primrose glyceride carboxylate, sodium grape seed oil glycereth-8 carboxylate, sodium Cannabis Sativa kernel oil glycereth-8 carboxylate, sodium jojoba oil glycereth-8 carboxylate, sodium PEG-16 macademia glyceride carboxylate, sodium PEG-25 moringa glyceride carboxylate, sodium PEG-2 olive glyceride carboxylate, sodium PEG-6 glyceride carboxylate, sodium PEG-7 olive glyceride carboxylate, sodium olive oil glycereth-8 carboxylate, sodium PEG-10 olive glyceride carboxylate, sodium PEG-40 olive glyceride carboxylate, sodium peach kernel oil glycereth-8 carboxylate, sodium PEG-60 Passiflora edulis seed glyceride carboxylate, sodium PEG-60 Passiflora Incarnata seed glyceride carboxylate, sodium PEG-40 thistle glyceride carboxylate, sodium soybean oil glycereth-8 carboxylate, sodium PEG-35 soy glyceride carboxylate, sodium PEG-75 soy glyceride carboxylate, sodium PEG-2 sunflower glyceride carboxylate , Sodium PEG-7 sunflower glyceride carboxylate, sodium sunflower oil glycereth-8 carboxylate, sodium PEG-10 sunflower glyceride carboxylate, sodium PEG-13 sunflower glyceride carboxylate, sodium PEG-7 rapeseed glyceride carboxylate, sodium PEG-4 rapeseed glyceride carboxylate, sodium PEG-10 canola glyceride carboxylate, sodium PEG-5 Tsubakiate glyceride carboxylate, sodium PEG-10 Tsubakiate glyceride carboxylate, sodium PEG-20 Tsubakiate glyceride carboxylate, sodium PEG-60 Tsubakiate glyceride carboxylate, sodium cottonseed oil glycereth-8 carboxylate, sodium rice oil glycereth-8 carboxylate, sodium sesame oil glycereth-8 carboxylate, sodium wheat germ oil glycereth-8 carboxylate.

[0083] Particularly preferred in this invention are the representatives of the surfactants with the general designation

metal vegetable oil PEG-n carboxylate,

with metal = Na, K, H, ammonium;
n = whole numbers between 2 and 8,
and the preferred vegetable oils selected from the group thistle, tigernut, hemp, crambe, Iberian dragon head, camelina, linseed, lupine, lucerne, corn, olive, oil radish, rapeseed, turnip rape, sesame leaf, sunflower, soy, grape and wheat, as well as their combinations.

[0084] Particularly preferred are representatives with an HLB > 10.5 and <12.0.

[0085] Very particularly preferred is the representative, INCI name: Natrium Olivenöl PEG-7 Carboxylat or sodium olive oil PEG-7 carboxylate, IUPC name poly (oxy-1,2-ethanediyl),. Alpha.-carboxy. .Omega .-(Olive oil fatty acids) oxy, sodium salt with 7 moles EO average EO content), HLB = 11, available from Hallstar under the trade name Olivem 400.

[0086] This is particularly preferred according to the invention, since it additionally has good biodegradability (> 95% according to OECD) and has excellent dermatological properties. At comparable concentrations, it has a significantly lower skin irritation factor than the commonly used sodium laureth sulfate (1.0 = minimum irritant vs. 1.64 = mild irritant).

Use of fatty acid mixtures

[0087] For the purposes of this application, the alkoxylated surfactant (A) is based on a mixture of fatty acid derivatives based on C18 vegetable oils with different chain length and degree of saturation. The mixture preferably follows the fatty acid distribution in the native oil or as obtained in the reaction of naturally occurring vegetable oils or fats. By using mixtures of fatty acid derivatives for the synthesis of the surfactant class - as they are obtained by the conversion of naturally occurring vegetable oils or fats - the surfactants can be produced inexpensively, resource-efficiently and in an environmentally friendly manner. Here, additional purification methods are not required, such as the separation of the fatty acids or fatty acid esters by fractional distillation or additional synthesis steps, for example to the fatty alcohol. In addition to the ecological and economic advantages of using natural fatty acid mixtures, the surfactant mixtures used show an increased cleaning performance.

[0088] The compositions preferably contain 0.1 to 50 wt.-% of one or more alkoxylated surfactants (A), more preferably 0.25 to 25 wt.-%, particularly preferably 0.6 to 10 wt .-% and extremely preferably 0.6 wt.-% to 8 wt -%.

Biosurfactants in general

[0089] Biosurfactants are generally surfactants of biological origin. They do not undergo chemical reaction such as the synthetic glycolipids e.g. alkyl polyglycosides (APG). Biosurfactants can be found in

living organisms, or arise in the cultivation of various microorganisms such as e.g. Fungi, yeasts, algae, viruses, bacteria or enzymes.

[0090] Glycolipid biosurfactants can be obtained directly by the use of natural raw materials by microbiological processes, while the preparation of synthetic glycolipids usually require further chemical steps, such as the reduction of fatty acid to fatty alcohol. By biologically modifying the sugar moiety, glycolipid biosurfactants have specific properties such as, known to those skilled in the art, good fat dissolving power. The structure of the glycolipid biosurfactants and the chain lengths of the hydrophobic part vary depending on the microorganism or substrate used.

[0091] In the context of this invention, glycolipid biosurfactants (B) comprise rhamnolipids, in particular mono-, di- or poly-rhamnolipids, sophorolipids in their acid or lactone form or as their mixtures, diacetylated, acetylated or non-acetylated, trehalose lipids, mannosylerythritol lipids and cellobiose lipids.

[0092] Suitable substrates for glycolipid biosurfactants are a wide variety of carbon sources known from the literature, such as vegetable oils and their resulting glycerides or fatty acid methyl esters, fatty acids, fatty alcohols, fatty acid methyl esters or ethyl esters, carbohydrates, e.g. cellulose, glucose, starch, C4 sources such as succinate, butane, butyric acid, C1 sources such as CO_2, CO or methane, oil and / or carbohydrate-containing wastewater from refineries or the food industry and mixtures thereof.

Biosurfactant microorganisms

[0093] Preferred microorganisms for producing the biosurfactants are Bacillus, Candida, Pseudomonas, Trichosporan and / or Pseudozyma strains and others as described in the relevant literature, in particular Arthrobacter spec., Bacillus licheniformis, Bacillus subtilis, Burkholderia, Candida apicola, Candida antarctica, Candida batistae, Candida bogoriensis, Candida bombicola, Candida sp., Cryptococcus humicola, Gordonia, Mycobacterium tuberculosis, Nocardia corynebacterium, Pichia anomala, Pseudomonas aeruginosa, Pseudozyma aphidis (MEL), Pseudomonas sp, Pseudozyma antarctica (MEL), Pseudozyma parantarctica, Pseudozyma fusiformata, Rhodococcus, Rhodococcus erythropolis, Rhodotorula bogoriensis, Sphingomonas sp. NM05, Starmerella bombicola, Trichosporon cutaneum, Trichosporan loubieri; Torulopsis magnoliae, Torulopsis bombicola, Tsukamurella spec., Yarrowia alipolytica, Yarrowia lipolytica, Ustilago maydis (MEL), Wickerhamiella domercqiae Y2A.

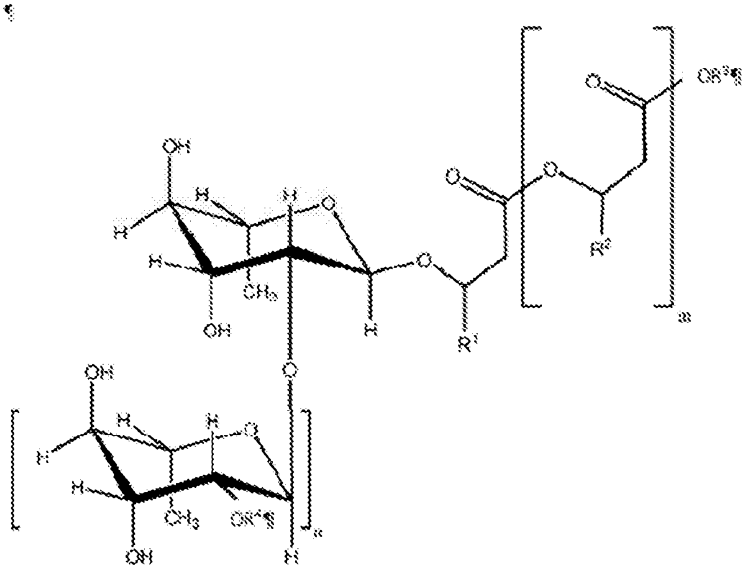
[0094] The glycolipid biosurfactants can be obtained as described for example in EP 0 499 434, US Pat. No. 7,985,722, WO 03/006146, JP 60-183032, DE 19648439, DE 19600743, JP 01-304034, CN 1337439, JP 2006 - 274233, KR 2004033376, JP 2006-083238, JP 2006-070231, WO 03/002700, FR 2740779, DE 2939519, US 7,556,654, FR 2855752, EP 1445302, JP 2008-062179 and JP 2007-181789, Mannosylerythritol: WO 2004/020647, JP 20042544595, or the publications cited therein.

Biosurfactant structures

Rhamnolipids

[0095] The term rhamnolipid in the context of the present invention is understood in particular to mean compounds of the general formula (IV) or their salts,

(IV)



where

- m = 2, 1 or 0,
- n = 1 or 0,
- R^1 and R^2 = independently of one another identical or different organic radical having 2 to 24, preferably 5 to 13 carbon atoms, in particular optionally branched, optionally substituted, in particular hydroxy-substituted, optionally unsaturated, in particular optionally mono-, di- or tri-unsaturated hydrocarbon radical, preferably selected from the group consisting of pentenyl, heptenyl, nonenyl, undecenyl and tridecenyl and $(CH_2)_o$-CH_3 where o = 1 to 23, preferably 4 to 12, particularly preferably o = 6.
- R^3 = H, CH_3, cation, in particular alkali cation or H, preferably H
- R^4 = H or the group $CH_3(CH_2)_aCH$ = CH-CO, with a as numbers between 4 and 10, preferably H.

[0096] The term "di-rhamnolipid" in connection with the present invention is understood to mean compounds of the general formula (IV) or salts thereof in which n = 1.
The term "mono-rhamnolipid" in connection with the present invention means compounds of the general formula (IV) or salts thereof in which n = 0.

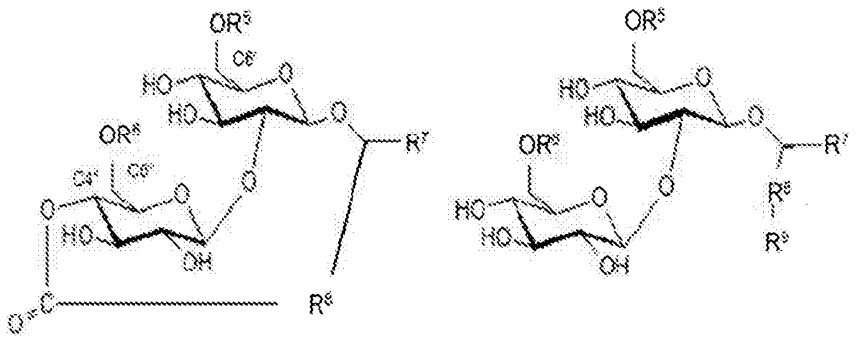
[0097] Rhamnolipids are accessible via organisms such as Pseudomonas and Burkholderia, both wild types. Furthermore, they are produced via recombinant cells. Commercially available rhamnolipids are available from Evonik under the trade name Rewoferm®, The Gene Biotech or from Jeneil Biosurfactant Co.LLC.

[0098] Particularly preferred in this invention are the rhamnolipids from Evonik Rewoferm® and JBR 425 from Jeneil Biosurfactant, in particular JBR 425.

Sophorolipids

[0099] The term sophorolipid in the context of the present invention is understood in particular as meaning compounds of the open or acid form, the ring or the lactone form, or mixtures thereof, preferably following formula (V)

(V)



Ring Form Open Form

where

- R^8 and R^6 independently of one another are H or acetyl groups
- R^7 is H or a completely saturated or unsaturated, hydroxylated or non-hydroxylated hydrocarbon chain having 1-9 carbon atoms, preferably CH_3
- R^8 is a saturated or unsaturated, hydroxylated or non-hydroxylated, linear or branched hydrocarbon chain having 1-22 carbon atoms, preferably R^8 consists of a saturated hydrocarbon chain of 11 to 22 carbon atoms or of a mono- or di-unsaturated hydrocarbon chain of 13 to 22 carbon atoms, particularly preferably of a mono- or di-unsaturated hydrocarbon chain of 15 or 16 carbon atoms derived from rapeseed oil as a substrate.
- R^9 is COOH or a cationic salt thereof, or $COO(CH_2)_mCH_3$ with m between 0 and 3.

[0100] In the lactone configuration, the lactone formation of the carboxyl group with the hydroxyl group may take place at C 4", as shown here by way of example in formula (V), or alternatively at C6" or C6', at the C4" position there is then a hydroxyl group.

[0101] In addition, the sophorolipids may contain impurities such as fatty alcohols, fatty acid esters, fatty acids, triglycerides or oils, sugars, especially glucose, sophorose, or organic acids.

[0102] By using different substrates, the biosurfactant can be structurally modified, e.g. the ratio of lactone form to free acid can be controlled by the substrate.

[0103] According to the invention, a wide variety of substrates can be used, as described in C. Mulligan, Biosurfactants: Research Trends and Application, CRC Press 2014, p. 112. Examples of preferred

substrates for sophorolipids from the literature are corn oil (EP 0282942), oil of C22 fatty acids (KR20100022289), olive oil (ES 2018637, CN 1431312), rapeseed oil or esters (CN 102250790, US2008032383), sunflower or rapeseed fatty acid esters (DE4319540, FR 2692593) or waste oils or fats (JP 2004254595, JP 2007252279, CN 101845468, CN 101948786).

[0104] Sophorolipids are accessible by a variety of different organisms known in the art such as Candida bombicola, Starmerella or Wickerhamiella.

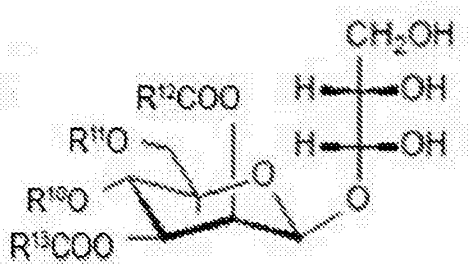
[0105] Furthermore, they are commercially available, for example from Evonik e.g. under the trade name Rewoferm SL 446 or Soliance / Givaudan.

[0106] Particularly preferred in this invention are the sophorolipids having the trade names Sophogreen, Sophoclean, Soliance S.

Mannosylerythritol lipids

[0107] The term mannosylerythritol lipids in the context of the present invention is understood in particular to mean compounds of the general formula (VI) or salts thereof,

(VI)



where

R^{10} and R^{11} independently of one another H or -$COCH_3$

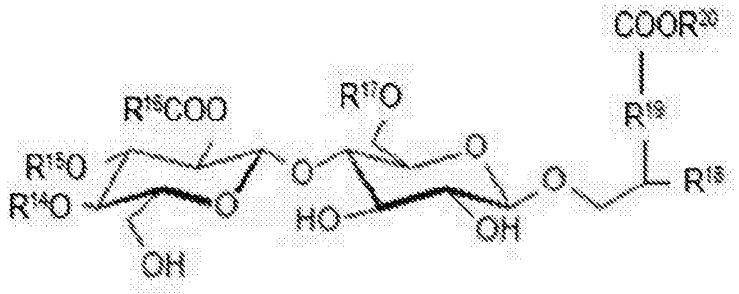
R^{12} and R^{13} independently of one another, linear or branched C_1 to C_{23}, preferably C_1 to C_{17}, and particularly preferably C_7 to C_{15} alkyl groups; or linear or branched C_2 to C_{23}, preferably C_2 to C_{17}, and particularly preferably C_7 to C_{15} alkenyl groups; or linear or branched C_5 to C_{23}, preferably C_5 to C_{17}, and more preferably C_7 to C_{15} alkadienyl groups; or linear or branched C_8 to C_{19}, preferably C_8 to C_{17}, and particularly preferably C_8 to C_{15} alkatrienyl groups.

[0108] Mannosylerythritol lipids can be obtained by Pseudozyma Antarctica NBRC 10736 in a nutrient medium with soybean oil, alternatively they are accessible by the smut fungus Ustilago maydis.

Cellobiose lipid

[0109] The term cellobiose lipid in the context of the present invention is understood in particular to mean compounds of the general formula (VII) or their salts

(VII)



R^{14}, R^{15} and R^{17}= independently of one another H or -$COCH_3$,

R^{16} = saturated or unsaturated, hydroxylated or non-hydroxylated hydrocarbon having 5 to 23 carbon atoms, or -CH_3, preferably -CH_3 or - CH_2-CH(OH)-$(CH_2)_n$-CH_3 where n = 2-4,

R^{18} = H or -OH,

R^{19} = saturated or unsaturated, hydroxylated or non-hydroxylated hydrocarbon having 9 to 21 carbon atoms, preferably 13 carbon atoms, more preferably - $(CH_2)_n$-CH(OH)- with n = 12,

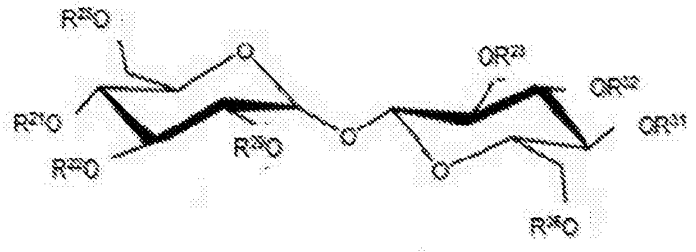
R^{20} = H, or a cation.

[0110] Cellobiose lipids can be obtained by known methods described in literature by Crypotcoccus humicola, Pseudozyma fusiformata or by the smut fungus Ustilago maydis.

Trehalose lipids

[0111] The term trehalose lipids in the context of the present invention is understood in particular to mean compounds of the general formula (VIII) or salts thereof.

(VIII)



R^{21}, R^{22}, R^{31} and R^{32} each independently represent hydrogen or COR^{27} with R^{27} saturated or unsaturated, hydroxylated or non-hydroxylated hydrocarbon of 5 to 23 carbon atoms;

R^{25} and R^{26} are each independently of one another hydrogen or COR^{28} with R^{28} saturated or unsaturated, branched or unbranched, hydroxylated or non-hydroxylated hydrocarbon having 5 to 23 carbon atoms or $R^{28} = CH[(CH_2)_nCH_3]CHOH(CH_2)_dCH_3$ with c + d = 27;

R^{29} and R^{33} are each independently of one another hydrogen, COR^{30} with R^{30} saturated or unsaturated, branched or unbranched, hydroxylated or non-hydroxylated hydrocarbon having 5 to 23 carbon atoms or $R^{30} = (CH)_2COOR^{34}$ with R^{34} = H or cation.

[0112] Tetralose dimycolates, tetralose monomycolates, succinyl trehalose lipids and trehalose tetraesters or mixtures thereof are preferably suitable according to the invention.

[0113] Trehalose lipids can be obtained by methods described in literature by Rhodococcus erythropolis, Arthobacter spec., Gordonia, Mycobacterium tuberculosis, Nocardia Corynebacterium spec. or Tsukamurella spec..

[0114] The compositions preferably contain 0.1 to 50 wt.-% of one or more glycolipid biosurfactants, more preferably 0.1 to 25 wt.-%, particularly preferably 0.1 to 15 wt.-% and extremely preferably 0.3 to 10 wt.-%, based on the total amount of the composition.

Other surfactants

[0115] Another object of the invention is a composition additionally containing at least one soap (C), and / or one or more nonionic alkoxylated surfactants (D) selected from the group of alkoxylated fatty acid esters, alkoxylated fatty acid glycerid esters, alkoxylated vegetable oil esters, or alkoxylated fatty acid amides as well as mixtures thereof.

[0116] Surprisingly, the combinations (A), (B) and (C), or (A), (B) and (D) or (A), (B), (C), (D) show an unchanged high or even better cleansing power on carbohydrate or colored stains.

[0117] This is surprising in that the combination (A) / (B) with a third surfactant (C) or (D) acts synergistically on carbohydrate stains or colored stains.

Soaps (C)

[0118] In a further embodiment, it has proved to be advantageous if the agent additionally contains at least one soap (C). Soaps are alkali or ammonium salts of saturated or unsaturated fatty acids of 6 to 24 carbon atoms.

[0119] Surprisingly, the compositions consisting of surfactant (s) (A) and glycolipid biosurfactant or surfactants (B) can be additionally combined with a soap (C) at neutral or alkaline pH so that the overall result is further improved with high detergency on carbohydrate stains or colored stains. Furthermore, the addition of soap may be desirable for additional formulation properties such as consistency, stability,

softness, and not least cost. As shown in the exemplary embodiments, the addition of soap has positive effects on the cleaning performance, depending on the embodiment.

[0120] Particularly preferred in this invention are salts of fatty acids of the formula (IX)

RCOOM (IX)

M is an alkali or ammonium cation

R or RCO as defined in formula (I) and derived from C18 vegetable oils, i.e. with R being a saturated, mono- or polyunsaturated hydrocarbon chain with 5-23 carbon atoms and RCO derived from a fatty acid mixture, wherein the proportion of 18 and more carbon atoms of the fatty acid radical RCO is over 60 wt.-%, preferably over 72 wt.-% and particularly preferably greater than 77% by weight; and wherein the proportion of unsaturated fatty acid radicals is above 55% by weight, preferably above 65% by weight and particularly preferably above 72% by weight, in each case based on the total proportion of fatty acid radicals RCO of the surfactant (I) used; and wherein the surfactant (I) consists of a mixture of different chain lengths and saturation levels of the fatty acid radical RCO as defined above and derived from a C-18 vegetable oil.

[0121] Exemplary representatives of the products useful in the present invention are sodium olive oil soaps, potassium rapeseed oil soaps, ammonium thistle oil soaps, sodium linseed oil soaps, sodium sunflower oil soaps, sodium soybean oil soaps, and others.

[0122] Preferably, the soap (C) is present as a mixture according to the fatty acid distribution in the native oil or as obtained in the reaction of naturally occurring vegetable oils or fats.

[0123] Preferred in this embodiment are compositions containing the formula (XI) which are characterized in that they are included from 0.001 to 50% by weight, more preferably 0.01 to 20% by weight and particularly preferably 0.1 to 20% by weight and most preferably 1 to 10 wt.-%; Weight percent based on the total composition.

Nonionic surfactants (D)

[0124] In a further embodiment, it has proved to be advantageous if the composition additionally contains one or more nonionic alkoxylated surfactants (D) selected from the group of alkoxylated fatty acid esters, alkoxylated fatty acid glyceride esters, alkoxylated vegetable oil esters represented by the formula (X) and alkoxylated fatty acid amides represented by the formula (XI) and mixtures thereof.

(X) $RCO\text{-}O(C_mH_{2m}O)_o\text{-}\{CH_2\text{-}CH[O(C_mH_{2m}O)_pR^{33}]\text{-}CH_2O\}_w\text{-}(C_mH_{2m}O)_q\text{-}R^{34}$

with R and RCO as described for formula (I) and derived from a C-18 vegetable oil
wherein
m is 2, 3 or 4, preferably 2 or 3, more preferably 2;
o, p, q are independently numbers from 0 to 75, preferably 0-10, more preferably 0-6, where o + p

+ q ≠ 0. The numbers o, p, q represent the degree of alkoxylation. Although these numbers may assume only integers at the molecular level, including zero, the total degree of alkoxylation x may be given as a decimal, since it represents the stoichiometric equivalents of butylene oxide, propylene oxide or ethylene oxide,

R^{33} is H, or COR,

R^{34} is H, COR, or a linear or branched alkyl radical having 1-8 C atoms,

w is an integer between 0 and 10;

(XI) R-CO-NH-$(C_mH_{2m}O)_n$-H

with R and RCO as described for formula (I) and derived from a C-18 vegetable oil,

and wherein

m is the integer 2 or 3, is preferred 2,

n is a number in the range of 2-10, preferably in the range 2-8, most preferably 2-4.

[0125] Surprisingly, the compositions consisting of the one or more surfactants (A) and the glycolipid biosurfactant (s) (B) can be additionally combined with a surfactant (D) at any pH value.

[0126] It is particularly surprising in that combination (A) / (B) acts synergistically despite the addition of a third surfactant (D) on carbohydrate stains or colored stains.

Exemplary representatives of the invention suitable surfactants (D) are

[0127] PEG-6 Almond Oil, PEG-8 Almond Oil, PEG-8 Apricot Kernel Oil, PEG-8 Buxus Chinensis Oil, PEG-6 Apricot Kernel Oil, PEG-40 Apricot Kernel Oil, PEG-8 Argan Oil, PEG-8 Avocado Oil, PEG-11 Avocado Oil, PEG-8 Borage Seed Oil, PEG-8 Macadamia Tenuifolia Oil, PEG-6 Corn Oil, PEG-8 M Corn Oil, PEG-8 Grape Seed Oil, PEG-8 Hazelnut Oil, PEG-8 Linseed Oil, PEG-6 Olive Oil, PEG-7 Olive Oil, PEG-7 Olive Oil, PEG-8 Olea Europaea Oil, PEG-7 Olive Oil, PEG-7 Olive Oil, PEG-8 Olive Oil, PEG-10 Olive Oil, PEG-8 Oryza Sativa Oil, PEG-8 Prunus Dulcis Oil, PEG-8 Persea Gratissma Oil, PEG-8 Passiflora edulis seed Oil, PEG-6 Peanut Oil, PEG-45 Crambe Absyssinica Seed Oil, PEG-75 Meadowfoam Oil, PEG-8 Pumpkin Seed Oil, PEG-3 Rapeseed Oil, PEG-20 Rapeseed Oil, PEG-8 Safflower Oil, PEG-8 Schinziophyton Rautanelì Kernel Oil, PEG-8 Sesame Seed Oil, PEG-8 Senum Indicum Oil, PEG-8 Soybean Oil, PEG-20 Soybean Oil, PEG-36 Soybean Oil, PEG-8 Sunflower Oil, PEG-32 Sunflower Oil, PEG-8 Sweet Almond Oil, PEG-8 Watermelon Seed Oil, PEG-8 Wheat Germ Oil, PEG-8 Zea Mais Oil.

[0128] PEG-6 Almond Glyceride, Almond Oil Glycereth-8 Ester, PEG-20 Almond Glyceride, PEG-35 Almond Glyceride, PEG-60 Almond Glyceride, Avocado oil Glycereth-8 Ester, PEG-11 Avocado Glyceride, Argan Oil Glycereth-8 ester, Almond Oil Glycereth-8 Ester, PEG-14 Almond Glyceride, Corn Oil Glycereth-8 Ester, PEG-20 Corn Glyceride, PEG-60 Corn Glycende, PEG-20 Evening Primrose Glyceride, PEG-60 Evening Primrose Glyceride, Grape Seed Oil Glycereth-8 Ester, Cannabis Sativa Kernel Oil Glycereth-8 Ester, Jojoba Oil Glycereth-8 Ester, PEG-16 Macadamia glyceride, PEG-25 Moringa glyceride, PEG-2 Olive Glyceride, PEG-6 Olive Glyceride, PEG-7 Olive Glyceride, Olive Oil Glycereth-8 Ester, PEG-10 Olive Glyceride, PEG-40 Olive Glyceride, Peach Kernel Oil Glycereth-8 Ester,

PEG-60 Passiflora edulis Seed Glyceride, PEG-60 Passiflora Incarnata Seed Glyceride, PEG-40 Safflower Glyceride, Soy Oil Glycereth-8 Ester, PEG-35 Soy Glyceride, PEG-75 Soy Glyceride Ester, PEG-2 Sunflower Glyceride, PEG-7 Sunflower Glyceride, Sunflower Oil Glycereth-8 Ester, PEG-10 Sunflower Glyceride, PEG-13 Sunflower Glyceride, PEG-7 Rapeseed Glyceride, PEG-4 Rapeseed Glyceride, PEG-10 Canola Glyceride, Sodium PEG-5 Tsubakiate Glyceride, PEG-10 Tsubakiate Glyceride, PEG-20 Tsubakiate Glyceride, PEG-60 Tsubakiate Glyceride, Cotton Oil Glycereth-8 Ester, Rice Oil Glycereth-8 Ester, Sesame Oil Glycereth-8 Ester, Wheat Germ Oil Glycereth-8 Ester.

[0129] Ethoxylated rapeseed methyl ester (EO 7-15), ethoxylated rapeseed ethyl ester (EO 7-15), ethoxylated soybean methyl ester (EO 7-15), ethoxylated soya ethyl ester (EO 7-15).

[0130] Particular preference is given to alkoxylated surfactants having an HLB > 10.5 and <12.0. Examples of these representatives are rapeseed methyl ester oxylate 7 EO, PEG-4 rapeseed amide from Kao, olive oil glycereth-PEG-8 ester, almond oil PEG-7 ester, PEG-10 olive glycerides.

Very particular preference is given to the representatives PEG-4 rapeseed amide from Kao, plant oil glycereth-y ester, plant PEG-y ester, ethoxylated rapeseed methyl ester (y EO), with plant = apricot (kernel), avocado, cotton, thistle, hemp, jojoba, linseed, macademia, almond, corn, olive, peach kernel, rice, sesame, soy, sunflower, grape (kernel), wheat (germ), rapeseed, canola oil with y = 6-10, preferably 7-8.

[0131] Preferred in this embodiment are compositions which are characterized in that they contain, based on their weight, from 0.1 to 50% by weight, preferably from 0.1 to 10% by weight and particularly preferably from 0.2 to 5% by weight of one or more additional alkoxylated surfactants, in each case based on the total composition.

[0132] The surfactant or surfactants (D) may be combined in any ratio with (A) and (B) and optionally (C).

[0133] Preferably, the surfactants (D) are present in the surfactant (A) / glycolipid-biosurfactant (B) mixture in a ratio between (D) :(A / B) ≤ 50: 1 and ≥ 1:50; for example, 20: 1, 9: 1, 8: 1, and so on.

The surfactants (D) are more preferably present in a ratio of between (D) :(A / B) ≦ 20: 1 and ≥ 1: 20, and particularly preferably the surfactants (D) are present in a ratio of (D) :(A / B) ≤ 10: 1 and ≥1: 10, most preferably (D): (A / B) ≤ 3: 1 and ≥ 1: 10; in each case based on the weight percent active content in the entire composition.

Other optional surfactants (E)

[0134] In this context, surfactant is understood to mean amphiphilic organic substances having surface-active properties which adsorb to the interface between two liquids, such as oil and water, and which have the ability to reduce the surface tension of water. In solution, surfactants tend to self-aggregate and form structures such as micelles, lamellar structures and the like. In the context of this invention surfactants are referred to as compounds that have the ability to reduce the surface tension of water at

20° C and at a concentration of 0.5 wt.-% based on the total amount of the composition to less than 45 mN / m.

[0135] For other optional surfactants, which may be freely combined with the inventive composition by the skilled person, reference is made to the relevant literature such as Richard J. Farn, Chemistry and Technology of Surfactants, Blackwell Publishing. Some examples are mentioned below, wherein the hydrocarbon chains derived from fatty acids or synthetic hydrocarbons comprise saturated or unsaturated, substituted or unsubstituted, linear or branched with 4-24 carbon atoms in the hydrocarbon chain. Optional surfactants preferably include, but are not limited to, other surfactants from C18 vegetable oils.

[0136] Other optional nonionic surfactants which can be freely combined by the skilled person with the composition according to the invention are, for example, alcohol polyglycol ethers, i.e. ethoxylated and / or propoxylated alcohols having 1-40 ethylene oxide (EO) and / or propylene oxide (PO) units, amine oxides, further alkoxylated amides, polyethylene glycol mercaptans, glycolipids, such as alkyl polyglycosides having 1-10 glycoside units, polyhydroxy fatty acid amides, polyhydroxy fatty acid esters, carboxylic esters, sorbitan esters, as well as alkoxylated sorbitan esters, alkanolamine-carboxylic acid condensates, N-alkylpyrrolidones, amidoalkyl-2-pyrrolidone.

[0137] Suitable optional anionic surfactants which can be combined freely by the skilled person with the composition according to the invention are acyl lactylate, further fatty alcohol carboxylates and also other alkyl polyglycol ether carboxylates or mixtures thereof.

[0138] In addition, optionally the less preferred sulfuric surfactants, phosphates or phosphonates can be used. Examples are alkylbenzenesulfonates, alkane / alkene sulfonates, alkyl sulfates or fatty alcohol sulfates, alkyl polyglycol ether sulfates containing from 2 to 6 ethylene oxide units (EO) in the ether portion, and sulfosuccinates, carboxylic acid amide ether sulfates, sulfosuccinic acid mono- and di-alkyl esters, α-olefinsulfonates, alkyl isethionate, acyl isethionate, alkyl sulfoacetates, sulfonated fatty acids, sulfonated fatty acid esters, such as sulfonated fatty acid glycerol esters and sulfonated fatty acid methyl esters, N-acylaminosulfonic acids, alkyl phosphates and alkyl ether phosphates, phosphoric and polyphosphoric acid esters.

[0139] Surprisingly, the compositions according to the invention show comparable cleaning performance to conventional agents with sulfuric surfactants, even without their use. For environmental reasons and the increasing sulphate contents in drinking water, a preferred embodiment is free from all sulfuric surfactants.

[0140] Likewise, the water-polluting phosphates and phosphonates without sacrificing the cleaning performance can be left out. Another preferred embodiment is phosphate and phosphonate free.

[0141] Furthermore, the composition may optionally contain cationic surfactants, for example primary, secondary, tertiary or quaternary alkyl ammonium salts of the formula (RI) (RII) (RIII) (RIV) N^+X^-, in which RI to RVI independently of one another are identical or different alkyl radicals, branched and unbranched,

saturated or unsaturated, unsubstituted, monosubstituted or polysubstituted, or H, wherein X^- represents an anion.

[0142] Furthermore, optional amphoteric surfactants, which may be freely combined by the skilled person with the inventive composition, may be included, such as N-alkyl betaines, alkylamido betaine, imidazolinium betaine, amine oxides, and less preferably sulfobetaines, phosphobetaines and suitaines.

[0143] The compositions according to the invention develop a stable foam and thus make the frequently used cocoamidopropyl betaine dispensable. This substance has a considerable irritation potential. A preferred embodiment is therefore free from cocoamidopropyl betaine.

[0144] A further preferred embodiment variant is free from cocamide DEA, cocamide MEA, which are also used for foam stabilization and are known to irritate the skin.

[0145] Most preferably, the compositions contain surfactants (E) derived from fatty acids RCOOH with R as defined above. The radicals R preferably are present as a mixture according to the fatty acid distribution in the native oil or as they arise in the reaction of native oils.

Surfactant composition in the inventive composition

[0146] Preferably, the composition contains a proportion of surfactants consisting of surfactant (A) of the formula (I), the surfactants (C) and (D), and optionally surfactants (E), with the proviso that the surfactant or surfactants (E) are derived from a C-18 vegetable oil, and the biosurfactant glycolipids (B), which is in total ≥ 35%, preferably ≥ 60%, more preferably ≥ 95% and most preferably ≥ 99%, based on the total content of surfactants in wt.-% in the composition.

[0147] This proportion in % represents the proportion of surfactants in the composition derived from C-18 plants and is determined according to the formula:

Surfactants in the composition derived from C-18 plants and is determined according to the formula:

$$\text{Anteil} = [(A) + (B) + (C) + (D) + (E_{C18})] / [(A) + (B) + (C) + (D) + (E)]$$

With

(A), (B), etc., in each case the amount of the surfactant or surfactants (A), (B), etc., based on wt.-% based on the total composition,

where (C), (D) and (E) can independently of another, be zero,

wherein (E) represents further optional surfactants (RX with X = hydrophilic radical) as defined above, which are either derived from C-18 plants (here called E_{C18}) - with R derived from fatty acids RCOOH with R, or RCO defined as in formula (I) - or derived from other oils or fats such as petroleum, palm kernel oil, coconut oil, animal fats, castor oil or silicone surfactants and others (here called $E_{remainder}$). I.e. (E) = (E_{C18} + $E_{remainder}$).

[(A) + (B) + (C) + (D) + (E)] represents the total content of surfactants in wt.-% in the composition.

Additives & Properties

Other biosurfactants / bioemulsifiers (F)

[0148] Furthermore, emulsifiers may also be present in the composition according to the invention. For optional emulsifiers, which can be freely combined by the skilled person with the inventive composition, reference is made to the relevant literature. Since the transitions of surfactants and emulsifiers are flowing, in the context of this invention, emulsifiers and surfactants are differentiated as described under (E).

[0149] The compositions according to the invention may additionally contain further optional bioemulsifiers (E), in particular lipopeptides, which preferably consist of a cycloheptapeptide with saturated, unsaturated, substituted or unsubsituted fatty acid residues of chain lengths of 2-30 carbon atoms, which are attached to the amino acid residues, for example surfactin, iturin, fengycin.

[0150] Bioemulsifiers (F) are produced by microorganisms. Bioemulsifiers belong to the biosurfactants, but are understood in the literature as higher molecular weight compounds than the classical glycolipid biosurfactants (Chibuzo Uzoigwe et al., Front. Microbiol. 2015; 6; 245), consisting of complex mixtures of heteropolysaccharides, lipopolysaccharides, lipoproteins and proteins. Further examples of bioemulsifiers (E) are emulsan, produced by Acinetobacter calcoaceticus, alasan, produced by A. redioresistens, or mannoprotein bioemulsifiers by Kluyveromyces marxianus, Saccharomyces cerevisiae, or Acinetobacter sp..

[0151] Preferred compositions according to the invention may contain one or more additional bioemulsifiers (F) in a total amount of 0.05-50% by weight, preferably 0.2-20% by weight, in particular 0.5-10% by weight, based on the total amount of the composition.

Solvents

[0152] The composition according to the invention may contain all solvents customary in washing, care and cleaning composition. They serve to stabilize the formulation, to solubilize poorly soluble ingredients and to increase the cleaning performance.

[0153] In a preferred liquid or gel-kind embodiment, the composition contains water as solvent, wherein more than 5 wt.-%, preferably more than 15 wt.-% and particularly preferably more than 25 wt.% water, in each case based on the total amount of the composition. Particularly preferred compositions contain - based on their weight - 5 to 98 wt.-%, preferably 10 to 90 wt.-%, particularly preferably 25 to 75 wt.-% water. Alternatively, they may be low in water or anhydrous, whereas the content of water in a preferred embodiment is less than 10% by weight, and more preferably less than 8% by weight, based in each case on the total liquid composition.

[0154] In another liquid or gel-kind embodiment, the composition is anhydrous, whereas the composition contains an organic solvent as the main solvent. Herein it is preferred that the composition contains 5 to 98 wt.-%, preferably 10 to 90 wt.-%, particularly preferably 25 to 75 wt.-% solvent.

[0155] Exemplary solvents are the following compounds named according to INCI: Alcohol denat. (Ethanol), alcohols, buteth-3, butoxy diglycol, butoxyethanol, butoxyisopropanol, butoxypropanol, n-butyl alcohol, t-butyl alcohol, butyl 3-hydroxybutyrate, butylene glycol, butyloctanol, C1-C6 alkanes, C7-C15 alkanes, diethylene glycol, diethylene glycol monobutyl ether, dimethoxy diglycol, dimethyl ether, dimethyl 2-methylglutarate, dipropylene glycol, dipropylene glycol phenyl ether, ethyl lactate, 2-ethyl lactate, ethyl levulinate glycerol ketal, ethyl levulinate propylene glycol ketal, ethylene glycol ketal, ethoxydiglycol, ethoxyethanol, ethyl hexanediol, fatty acid methyl ester e.g. based on C-18 plants, gamma laverolactone, glycol, glycerol, hexanediol, 1,2,6-hexanetriol, hexyl alcohol, hexylene glycol, isobutoxypropanol, isopentyldiol, isopropyl alcohol (isopropanol), levulinic acid ester, methoxybutanol, methoxy diglycol, methoxyethanol, methoxyisopropanol, methoxymethylbutanol, methoxy PEG-10, methylal, methyl alcohol, methyl 9-dodecenoate, methyl hexyl ether, methyl propane diol, 2-methyl THF, neopentyl glycol, N, N-dimethyl-9-decenamide, polyols, PEG-4, PEG-6, PEG-7, PEG-8, PEG-9, PEG-6 methyl ether, pentylene glycol, PPG-7, PPG-2-buteth-3, PPG-2 butyl ether, PPG-3 butyl ether, PPG-2 methyl ether, PPG-3 methyl ether, PPG -2 propyl ether, 1,2-propanediol, 1,3-propanediol, propyl alcohol (n-propanol), propylene glycol, propylene glycol butyl ether, propylene glycol propyl ether, terpenes, e.g. limonene, thymol, etc., particularly of natural origin such as lemon oil, lavender oil, thyme oil, etc., tetrahydrofurfuryl alcohol, trimethylhexanol. According to the invention, these solvents can be freely combined with other ingredients in a manner well known to those skilled in the art.

[0156] In a preferred embodiment, solvents are selected from the group of solvents derived from vegetable raw materials and are biodegradable. Particular preference is given to solvents which contain no VOCs (volatile organic compounds).

[0157] A particularly preferred embodiment additionally contains fatty acid alkyl esters of the formula $R\text{-}CO\text{-}OR^{25}$ as solvent
wherein the fatty acid alkyl ester consists of a mixture of different chain lengths and saturation levels of the fatty acid residue RCO as defined in surfactant (A) and derived from a C-18 vegetable oil;
and wherein R^{25} is a linear or branched hydrocarbon of 1-5 carbon atoms, preferably consisting of a methyl or ethyl group, more preferably methyl.

[0158] Preferred representatives are rapeseed methyl ester, sunflower methyl ester, safflower methyl ester or soybean methyl ester.

[0159] Softeners and complexing agents
INCI chelating agents, sequestering agents
Suitable in accordance with the invention are all complexing agents customary in washing, care and cleaning composition. They increase the detergency and the stability of the agents.

[0160] Softeners and complexing agents from the groups of phosphates and phosphonates, phyllosilicates, zeolites, carbonates and polycarboxylates, aminopolycarboxylic acids, such as

aminoacetic acids and polyaminoacetic acids and their salts, hydroxycarboxylic acids and their salts, polyglycosides and -gluconic acids and their salts are suitable according to the invention.

[0161] Suitable examples are the following complexing agents: aminotrimethylene phosphonic acid, beta-alanine acetoacetic acid, calcium disodium EDTA, chitosan, citric acid and its salts and hydrates, cyclodextrin, cyclohexanediamine tetraacetic acid, diammonium citrate, diammonium EDTA, diethylenetriamine pentaacetic acid, diethylenetriamine pentamethylene phosphoric acid, dipotassium EDTA, disodium azacycloheptane diphosphonate, disodium EDTA, disodium pyrophosphate, EDTA, ethylenediamine-*N*, N'-disuccinic acid (EDDS), etidronic acid, galactaric acid, β-glucan, gluconic acid, glucuronic acid, glucoheptonic acid, HEDTA, hydroxypropyl cyclodextrin, methyl cyclodextrin, pentapotassium triphosphate, pentasodium aminotrimethylene phosphonate, phosphonobutane tricarboxylic Acid (PBTC), pentasodium ethylenediamine tetramethylene phosphonate, pentasodium pentetate, pentasodium triphosphate, pentetic acid, (DTPA), phytic acid, potassium citrate, potassium EDTMP, potassium gluconate, potassium polyphosphate, potassium trisphosphonomethylamines oxides, ribonic acid, sodium chitosan methylene phosphonates, sodium citrate, sodium diethylenetriamine pentamethylene phosphonates, sodium dihydroxyethylglycinate, sodium EDTMP, sodium glucoheptate, sodium gluconate, sodium glycereth-1 polyphosphates, sodium hexametaphosphate, sodium metaphosphate, sodium metasilicate, sodium phytate, sodium polydimethylglycinophenolsulfonate , Sodium trimetaphosphates, TEA-EDTA, TEA polyphosphates, tetrahydroxyethyl ethylenediamine, tetrahydroxypropyl ethylenediamine, tetrapotassium etidronate, tetrasodium iminodisuccinate (IDS), tetrapotassium pyrophosphate, tetrasodium EDTA, tetrasodium etidronate, tetrasodium pyrophosphate, tripotassium EDTA, tripotassium dicarboxymethyl alaninate, trisodium EDTA, trisodium HEDTA , Trisodium methylglycine dieacetic acid (MGDA-Na_3), trisodium NTA and trisodium phosphates, phytic acid, plants extracts such as Lupinus Albus Seed Extract, carnosine, Bambusa Arundinacea Leaf Extract, Citrus Paradisi (Grapefruit) Peel Extract, Sambucus Nigra Extract; or in the case of acids, their salts. These chelating agents can be freely combined by the skilled person with other ingredients mentioned here.

[0162] In a preferred embodiment, the compositions according to the invention contain complexing agents which are biodegradable. The compositions according to the invention therefore preferably contain no phosphates, no phosphonates, no EDTA and no polycarboxylates.

[0163] Very particularly preferred in this invention are the following complexing agents based on renewable raw materials, such as beta-alanines diacetic acid, cyclodextrin, diammonium citrate, galactaric acid, gluconic acid, glucuronic acid, methylcyclodextrin, hydroxypropyl cyclodextrin, polyaspartic acid, alkali salts of gluconates, sodium carbonate, carboxymethyl inulin and sodium carboxymethyl inulin (NaCMI), sodium citrate, sodium dihydroxyethylglycinate, sodium gluconate, sodium glucoheptonate, sodium iminodisuccinate, sodium lactate, sodium lignosulfate, tetrasodium GLDA (L-glutamic acid, N,N-di (acetic acid), tetrasodium salt), citric acid and its salts.

[0164] Preferred compositions according to the invention comprise at least one complexing agent in a total amount of 0.1-20% by weight, preferably 0.2-15% by weight, in particular 0.5-10% by weight, based on the total amount of the composition.

Abrasives and polishes

[0165] The compositions according to the invention show such a good cleaning action, that the addition of abrasives is not required. Nevertheless, the compositions, especially in the field of oral and dental care or in the field of heavy cleaning, may optionally contain abrasives as components for certain cleaning applications. These include plastic abrasives based on polyethylene or polyurethane, organic polymers, mineral abrasives such as silicic acids for example gel silica, hydrogel silica and precipitated silica, aluminum hydroxide, alumina, magnesium sulfate, sodium aluminum silicates, calcium carbonate, kaolin, sand, chalk, calcium pyrophosphate, dicalcium phosphate dihydrate and others as well as vegetable-based abrasives such as cellulose derivatives, wood flour or core and shell flours, and mixtures thereof.

[0166] Especially preferred for use as a coarse cleaning are abrasives based on natural core and / or shell flours, in particular walnut shells, almond shells, hazelnut shells, olive kernel, apricot kernel and cherry kernel flour or pearls from waxes (e.g. jojoba wax).

[0167] Preferred polishing agents for use in dental care are low in calcium, such as silicic acids, aluminum hydroxide, alumina, sodium aluminum silicates, organic polymers, or mixtures of such abrasives.

[0168] The concentration of abrasives may be up to 50 wt.-%, preferably 0 - 30 wt.-%, based on the total amount of the composition.

Preservatives

[0169] The composition according to the invention can contain all preservatives customary in washin, care and cleaning compositions, which can be freely combined with other ingredients by the person skilled in the art for the purposes of this application.

[0170] These are, for example, active compounds from the groups of alcohols, aldehydes, antimicrobial acids or their salts, carboxylic esters, acid amides, phenols, phenol derivatives, diphenyls, diphenylalkanes, urea derivatives, oxygen and nitrogen acetals and formals, benzamidines, isothiazoles and derivatives thereof such as isothiazolinones, phthalimide derivatives, pyridine derivatives, surface active compounds, guanidines, antimicrobial amphoteric compounds, quinolines, 1,2-dibromo-2,4-dicyanobutane, iodo-2-propynyl-butyl-carbamate, iodine, iodophores and peroxides.

[0171] Particularly preferred is the preservation of the inventive composition based on antimicrobial agents selected from antimicrobial peptides, ethanol, benzyl alcohol, dehydroacetic acid and its salts, sorbic acid and potassium sorbate, vegetable organic acids and their salts, formic acid, glycerol, citric acid, lactic acid, salicylic acid, and their salts.

[0172] Most preferred is the embodiment free from chemical preservatives as disclosed in the embodiments, i.e. in particular without parabens, without formaldehyde-containing preservatives or formaldehyde releasers, without isothiazoles and their derivatives, without halogen-containing

compounds, without phthalimides, without benzalkonium chloride, without benzoic acid, without phenoxyethanol.

Antioxidants

[0173] Antioxidants are preferably added to the cosmetic composition, on the one hand to protect the unsaturated hydrocarbon chains of the inventive composition and on the other hand to reduce harmful oxidative effects on the skin or hair. For example, the antioxidants are selected from the group consisting of amino acids (e.g. glycine, histidine, tyrosine, tryptophan) and their derivatives, imidazoles (e.g. urocanic acid) and their derivatives, peptides such as D, L-carnosine, D-carnosine, L-carnosine and their derivatives (e.g. anserine), carotenoids, carotenes and their derivatives, chlorogenic acid and its derivatives, lipoic acid and its derivatives, aurothioglucose, propylthiouracil and other thiols (e.g. thioredoxin, glutathione, cysteine, cystine, cystamine and their glycosyl, N-acetyl, methyl, ethyl, propyl, amyl, butyl and lauryl, palmitoyl, oleyl, [gamma] -linoleyl -, cholesteryl and glyceryl esters) and their salts, dilaurylthiodipropionat, distearylthiodipropionat, thiodipropionic acid and its derivatives (esters, ethers, peptides, lipids, nucleotides, nucleosides and salts) and sulfoximin derivatives in very low tolerated dosages (e.g. buthioninsulfoximine, homocysteinsulfoximin, buthioninsulfone, penta-, hexa-, heptathioninsulfoximin), also (metal) –chelating agents (e.g. [alpha] hydroxy fatty acids, palmitic acid, phytic acid, lactoferrin), [alpha] hydroxy acids (e.g. citric acid, lactic acid, malic acid), nucleic acid, bile acid, bile extracts, bilirubin, biliverdin, EDTA, EGTA and their derivatives, unsaturated fatty acids and their derivatives (e.g. B. [gamma] -linolenic acid, linoleic acid, oleic acid), folic acid and its derivatives, ubiquinone and ubiquinol and their derivatives, vitamin C and derivatives (e.g. ascorbyl palmitate, Mg ascorbyl phosphate, ascorbyl acetate), tocopherols and derivatives (eg. vitamin E acetate), vitamin A and derivatives (vitamin A palmitate) and benzylic koniferyl resin, benzylic acid, rutinic acid and derivatives thereof, [alpha] glycosylrutin, ferulic acid, furfurylidene glucitol, carnosine, butylhydroxytoluene, butylhydroxyanisole, nordihydro guaiac resin acid, nordihydroguairetic acid, trihydroxybutyrophenone, uric acid and its derivatives, mannose and its derivatives, zinc and its derivatives (e.g. ZnO, ZnSO4) selenium and its derivatives (e.g. Selenium methionine), stilbenes and their derivatives (e.g. stilbene oxide, trans-stilbene oxide), superoxide dismutase and the respective derivatives suitable for the invention (salts, esters, ethers, sugars, nucleotides, nucleosides, peptides and lipids) of these substances.

[0174] Antioxidants are preferred according to the invention, which are based on raw materials from plants, preferably C-18 plants, such as, for example, antioxidants from the groups of the amino acids, peptides, carotincids, chelators, plant extracts and hydroxy acids, as well as mixtures thereof.

[0175] The amount of antioxidants (one or more compounds) in the compositions is preferably 0.001 to 30 wt.-%, particularly preferably 0.05-20 wt.-%, in particular 1-10 wt.-%, based on the total amount of the composition. These antioxidants may be combined by the skilled person with other ingredients mentioned herein.

Conditioning Agents

[0176] The compositions according to the invention may comprise conventional conditioning agents known to the person skilled in the art, for example monographed in the "International Cosmetic Ingredient Dictionary and Handbook", 14th Edition, K. Schrader, or in the "Fundamentals and Formulations of Cosmetics", 2nd Edition (Hüthig Verlag, Heidelberg, 1989), pp. 782-815.

Deodorizing agents

[0177] The composition may contain deodorizing agents. These are understood to be odor absorbers, deodorizing ion exchangers, germ-inhibiting agents, prebiotic components and enzyme inhibitors or combinations of the active substances mentioned.

[0178] Silicates are used as odor absorbers, which at the same time can positively support the viscosity of the compositions according to the invention. These include phyllosilicates, in particular montmorillonite, kaolinite, illit, beidellite, nontronite, saponite, hectorite, bentonite, smectite and talcum. Further advantageous odor absorbers are, for example, zeolites, zink ricinoleat, cyclodextrins, certain metal oxides, such as alumina, and chlorophyll.

[0179] They are used in an amount of 0.1-10% by weight, preferably 0.5-7% by weight and in particular 1-5% by weight, in each case based on the total amount of the composition.

Germ-inhibiting, fungicidal and antimicrobial agents

[0180] Optionally, the composition according to the invention may contain active substances against microorganisms, such as fungi or bacteria, to prevent odor, dandruff, caries, acne and the like.

[0181] Suitable germ-inhibiting or antimicrobial agents according to the invention are organohalogen compounds and halides, quaternary ammonium compounds, a range of plant extracts and zinc compounds. These include amongst others triclosan, chlorhexidine and chlorhexidine gluconate, 3,4,4'-trichlorocarbanilide, bromochlorophene, dichlorophen, chlorothymol, chloroxylenol, hexachlorophene, dichloro-m-xylenol, dequalinium chloride, domiphenbromide, ammonium phenolsulfonate, benzalkonium halides, benzalkonium cetyl phosphate, benzalkonium saccharinates, benzethonium chloride, cetylpyridinium chloride, laurylpyridinium chloride, laurylisoquinolinium bromide, methylbenzedonium chloride. Furthermore, phenol, phenoxyethanol, disodium dihydroxyethylsulfosuccinyl undecylenate, sodium bicarbonate, zinc lactate, sodium phenolsulfonate and zinc phenolsulfonate, ketoglutaric acid, terpene alcohols such as farnesol, chlorophyllin copper complexes, α-monoalkyl glycerol ether with a branched or linear, saturated or unsaturated, optionally hydroxylated C_8-C_{22} alkyl radical, particularly preferably α-(2-ethylhexyl) glycerol ether, carboxylic acid esters of mono-, di- and triglycerol (e.g. glycerol monolaurate, diglycerol monocaprate), lantibiotics and plant extracts (e.g. green tea and components of lime blossom oil) can be used.

[0182] Further preferred active substances are selected from so-called prebiotically active components, which according to the invention are to be understood as those components which inhibit only or at least

predominantly the undesired germs of the skin microflora, but not the desired, that is, those which belong to a healthy skin microflora. These include conifer extracts, in particular from the group of Pinaceae, and plant extracts from the group of Sapindaceae, Araliaceae, Lamiaceae and Saxifragaceae, in particular extracts from Picea sp., Paullinia sp., Panax sp., Lamium album or Ribes nigrum and mixtures of these substances.

[0183] Further preferred active substances are selected from the germ-inhibiting perfume oils or essential oils.

[0184] Furthermore, the composition may contain enzyme inhibitors which inhibit the enzymes responsible for the sweat decomposition, in particular arylsulfatase, β-glucuronidase, aminoacylase, ester-splitting lipases and lipoxygenase, e.g. B. trialkylcitric acid esters, in particular triethyl citrate, or zinc glycinate.

[0185] The amount of deodorizing active ingredients in the compositions according to the invention is 0.1-10% by weight, preferably 0.2-7% by weight, in particular 0.3-5% by weight and most preferably 0.4-1,0 wt.-%, based on the total amount of the composition.

Antiperspirant active ingredients

[0186] Optionally, antiperspirant active ingredients may also be present, such as water-soluble astringent inorganic and organic salts of aluminum, zirconium and zinc or any desired mixtures of these salts. These include aluminum chlorohydrates, for example aluminum sesquichlorohydrate, aluminum chlorohydrex-propylene glycol (PG) or polyethylene glycol (PEG), aluminum sesquichlorohydrex-PG or -PEG, aluminum PG-dichlorhydrex or aluminum PEG-dichlorhydrex, aluminum hydroxide, furthermore aluminum zirconium chlorohydrates, such as aluminum zirconium trichlorohydrate, aluminum zirconium tetrachlorohydrate, aluminium zirconium pentachlorhydrat, aluminium zirconium octachlorhydrat, the aluminum-zirconium chlorohydrat- glycine complexes, such as aluminium zirconium trichlorhydrexglycin, aluminium zirconium tetrachlorhydrexglycin, aluminium zirconium pentachlorhydrexglycin, aluminium zirconium octachlorhydrexglycin, potassium aluminum sulphate ($KAl(SO_4)_2 \times 12\ H_2O$, alum), aluminium undecylenoylcollagen amino acid, Sodium aluminium lactate + aluminum sulfate, sodium aluminum, aluminum bromohydrate, aluminum chloride, complexes of zinc and sodium salts, complexes of lanthanum and cerium, aluminum salts of lipo amino acids, aluminum sulfate, aluminum lactate, aluminum chlorohydroxy allantoinate, sodium aluminum chlorhydroxylactate, zinc chloride, zinc sulfocarbolate, zinc sulfate and zirconium chlorohydrate.

[0187] The amount of antiperspirant active ingredients in the compositions according to the invention can be up to 10% by weight, preferably 0.2-7% by weight, in particular 0.3-5% by weight and very preferably 0.4-1.0% by weight, based on the total amount of the composition.

[0188] A preferred embodiment does not contain any antiperspirant active ingredients.

UV filter

[0189] It is also possible and advantageous for the purposes of the present invention to use UV protective substances. The composition according to the invention is particularly suitable since pigments are dispersed extremely well in the combination of the surfactants as disclosed. In addition to the effect that pigments can be easily detached from a substrate, this also has the effect of stabilizing compositions with paint or pigments. Examples of pigmentary UV filters are zinc oxide, titanium dioxide, methylene bis-benzotriazolyl tetramethylbutylphenol, and the like.

[0190] Therefore, compositions according to the invention can advantageously contain substances which absorb UV radiation in the UVA and UVB ranges, the total amount of filter substances in the entire composition preferably being between 0.1% by weight and 30% by weight. Preference is given to commercial water or oil-soluble UV filters. Usually, combinations of UV filters are used, which can be combined by the skilled person with other ingredients mentioned here.

Anti-dandruff agents

[0191] The cosmetic composition may contain ingredients that are effective against dandruff. Examples of these are zinc pyrithione, selenium disulfide, piroctone olamine, climbazole or plant extracts such as Vitis vinifera seed extract, Thymus Serpyllum extract, Rosmarinus Officialis leaf extract, Leuconostoc / radish root ferment filtrate, Leptospermone / Isoleptospermone / Flavesone, Leptospermum Scoparoi, branch / leaf oil, Fragaria Ananassa (strawberry) seed oil, Adianthum Capillus Veneris Leaf Extract, nettle extract, juniper extract, thyme extract and others.

[0192] In the compositions according to the invention with anti-dandruff actives, these are used in concentrations of up to 7% by weight, preferably 0.1-4% by weight, particularly preferably 0.1-2% by weight, in each case based on the total amount of the composition.

Other active ingredients

[0193] Furthermore, other active ingredients may be included in the cosmetic composition, such as anti-aging agents, peptides, UV absorbers, vitamins & minerals (e.g. ascorbic acid, biotin, tocopherol or rutin, niacin), mineral salts such as manganese, zinc or magnesium salts, other plant extracts.

[0194] They are preferably used in amounts of 0.01- 5 wt.-% in the compositions according to the invention, wt.-% based on the total amount of the composition.

Hair Dyes

[0195] Compositions according to the invention may also contain dyes for the direct or oxidative coloring of hair. The coloring compositions should protect the hair and harm as little as possible. Both hair colorants and tinting shampoos can be prepared on the basis of the compositions according to the invention.

[0196] The advantage of the composition according to the invention is that post-washing after dyeing the hair with a shampoo can be dispensed, since the dye preparation already contains surfactants.

Binder / bodying agent

[0197] The composition according to the invention can be used as binder or consistency controllers for example natural and / or synthetic water-soluble polymers such as alginates, carrageenates, traganth, starch and starch ethers, cellulose ethers such as carboxymethylcellulose (sodium salt), hydroxyethylcellulose, methylhydroxypropylcellulose, guar, acacia, agar, xanthan gum, succinoglycan gum, locust bean gum, pectins, water soluble carboxyvinyl polymers, polyvinyl alcohol, polyvinylpyrrolidone, polyethylene glycols.

[0198] They are preferably used in amounts of from 0.01 to 10% by weight in the compositions according to the invention, % by weight, based on the total amount of the composition.

Fatty acids

[0199] Composition according to the invention may additionally contain linear, saturated, unsaturated, optionally polyunsaturated fatty acids having 6-24 carbon atoms. Fatty acids derived from C18 plants are preferred according to the invention.

Emollients

[0200] Composition according to the invention may comprise customary emollients known to the person skilled in the art. Emollients include water-insoluble organic compounds, whereby the water-insolubility according to the invention being understood to mean a solubility of less than 10% by weight at 20° C.

[0201] The emollients which can be used according to the invention include, for example, glycerides, hydrocarbons, silicone oils, dialkyl ethers, dialkyl carbonates, wax esters, etc. Any mixtures of emollients can be used according to the invention.

[0202] Glycerides are fatty acid esters of glycerol, which may be of natural (animal, microbial, algae-based and vegetable) or synthetic origin. A distinction is made between mono-, di- and triglycerides. These are known substances which can be prepared by relevant processes of preparative organic chemistry. Synthetically produced glycerides are usually mixtures of mono-, di- and triglycerides which are obtained by transesterification of the corresponding triglycerides with glycerol or by specific esterification of fatty acids. Triglycerides or glyceride mixtures with a high content of triglycerides (> 90% by weight) are preferred. As fatty acid according to the invention C6-C30 fatty acids are suitable. The fatty acids may be branched or unbranched, hydroxylated or non-hydroxylated, saturated or unsaturated. According to the invention, the use of glycerides of plant origin is preferred, particularly preferred are glycerides of C-18 plants, for example soybean oil, cottonseed oil, sunflower oil, linseed oil, almond oil, corn oil, olive oil, rapeseed oil, sesame oil, thistle oil, wheat germ oil, peach kernel oil and the like. By way of example, some compositions with emollients are disclosed in the exemplary embodiments.

[0203] The inventively usable emollients include natural and synthetic, aliphatic and / or naphthenic hydrocarbons, such as as squalane, squalene, paraffin oils, isohexadecane, isoeicosane or polydecenes and dialkylcyclohexanes.

[0204] Silicone oils are also suitable according to the invention as emollients. These include for example, dialkyl and alkyl arylsiloxanes such as cyclomethicones, dimethylpolysiloxane and methylphenylpolysiloxane, as well as their alkoxylated and quaternized analogues. Suitable non-volatile silicone oils, such as polyalkylsiloxane, polyalkylarylsiloxane and polyether siloxane copolymers are shown in Cosmetics: Science and Technology, eds.: M. Balsam and E. Sagarin, Vol. 1, 1972, pp. 27-104. Silicone oils are not preferred for sustainability considerations in the compositions according to the invention.

[0205] Suitable and inventively preferred emollients are further branched saturated or unsaturated fatty alcohols having 6 to 30 carbon atoms. These alcohols are also often referred to as Guerbet alcohols, as they are obtainable by the Guerbet reaction. Examples of preferred alcohol oils are hexyldecanol, octyldodecanol, 2-ethylhexyl alcohol and the commercial products Guerbitol® 18, Isofol® 12, Isofol® 16, Isofol® 24, Isofol® 36, Isocarb® 12, Isocarb® 16 or Isocarb® 24.

[0206] Other suitable emollients are mixtures of Guerbet alcohols and Guerbet alcohol esters, e.g. hexyldecanol and hexyldecyl laurate.

[0207] As emollient also esters of linear, saturated or unsaturated C_6-C_{30} fatty acids are suitable with linear or branched, saturated or unsaturated C_6-C_{30} fatty alcohols or esters of branched C_6-C_{30} carboxylic acids with linear or branched, saturated or unsaturated C_6-C_{30} fatty alcohols, which may be hydroxylated (so-called wax esters).

[0208] Among the wax esters following representatives are given as for examples: myristyl myristate, myristyl palmitate, myristyl stearate, myristyl isostearat, myristyl oleate, myristyl behenate, myristyl erucate, cetyl myristate, cetyl palmitate, cetyl stearate, cetyl isostearat, cetyl oleate, cetyl behenate, cetyl erucate, stearyl myristate, stearyl palmitate, stearyl stearate, stearyl isostearate, steary oleate, stearyl behenate, stearyl erucate, isostearyl myristate, isostearyl palmitate, Isostearyl stearate, isostearyl isostearate, isostearyl oleat, isostearyl behenate, isostearyl oleat, oleyl myristate, oleyl palmitate, oleyl stearate, oleyl isostearate, oleyl oleate, oleyl behenate, oleyl erucate, behenyl myristate, behenyl palmitate, behenyl stearate, behenyl isostearat, behenyl oleate, behenyl behenate, behenyl erucate, erucyl myristate, erucyl palmitate, erucyl stearate, erucyl isostearate, erucyl oleate, erucyl behenate and erucyl erucate. Preference is given to using mono- or polyunsaturated wax esters, for example oleyl oleate and oleyl erucate. Most preferably, these wax esters are derived from C18 plants. Also suitable are esters of linear C_6 -C_{22} -fatty acids with branched alcohols, in particular 2-ethylhexanol, esters of C_2 –C_{38} –alkylhydroxy carboxylic acids with linear or branched C_6 -C_{22} fatty alcohols, esters of linear and / or branched fatty acids with polyhydric alcohols (such as propylene glycol, dimer diol or trimer triol) and / or Guerbet alcohols, and 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 (e.g. dioctyl malate) or polyols having 2 to 10 carbon atoms and 2 to 6 hydroxyl groups.

Other exemplary representatives are: hexyldecyl stearate, hexyldecyl laurate, isodecyl neopentanoat, isononyl isononanoate, 2-ethylhexyl palmitate and 2-ethylhexyl stearate, isopropyl myristate, isopropyl palmitate, isopropyl stearate, isopropyl isostearate, isopropyl oleate, isooctyl stearate, Isononyl stearate, isocetyl stearate, isononyl isononanoate, isotridecyl isononanoate, cetearyl isononanoate, 2-ethylhexyl laurate, 2-ethylhexyl isostearate, 2-ethylhexyl cocoate, 2-octyl dodecyl palmitate, butyloctanoic acid 2-butyloctanoate, diisotridecyl acetate, n-butyl stearate, n-hexyl laurate, n-decyl oleate, ethylene glycol dioleate and - dipalmitate, linolyl myristate, linolyl palmitate, linoleyl myristate, linoleyl palmitate, isostearyl oleate, isostearyl behenate, isostearyl oleate, linoyl stearate, linoleyl stearate, oleyl oleate, oleyl linolate, oleyl linolenate, oleyl ricinoleate, oleyl erucate, linolyl oleate, linolyl linoleate, linolyl ricinoleate, linolyl erucate, linolenyl oleate, linolenyl linoleate, linolenyl linolenolate, linolenyl ricinoleate, linolenyl erucate, erucyl linolate, erucyl lineolenate, erucyl ricinoleate, whereas the linolenic derivatives include alpha- and gamma-linolenic derivatives.

[0209] Suitable emollients are linear or branched, symmetrical or asymmetrical, saturated or unsaturated di-n- alkyl(en) ethers having 12 to 24 carbon atoms per alkyl(en) group, such as di-n-octyl ether, di (2-ethylhexyl) ether, lauryl methyl ether or octyl butyl ether, didodecyl ether or dibehenyl ether, preferably using ethers derived from C18 plants.

[0210] Particularly preferred emollients are linear or branched, saturated or unsaturated C6-C40 fatty alcohol carbonates. These compounds can be prepared by transesterification of dimethyl or diethyl carbonate with the corresponding hydroxyl compounds according to prior art methods; an overview can be found in Chem. Rev. 96, 951 (1996). Typical examples of dialkyl (ene) carbonates are complete or partial transesterification products of dimethyl and / or diethyl carbonate with caproic alcohol, caprylic alcohol, 2-ethylhexyl alcohol, capric alcohol, lauryl alcohol, isotridecyl alcohol, myristyl alcohol, cetyl alcohol, palmoleyl alcohol, stearyl alcohol, isostearyl alcohol, oleyl alcohol, elaidyl alcohol, petroselinyl alcohol, linolyl alcohol, linolenyl alcohol, elaeostearyl alcohol, arachidyl alcohol, gadoleyl alcohol, behenyl alcohol, erucyl alcohol and brassidyl alcohol and their technical mixtures, as they incur in the high-pressure hydrogenation of technical methyl esters based on fats and oils.

Preferably suitable dialkyl carbonates are derived from C-18 vegetable oils.

[0211] Further emollients which are suitable according to the invention are selected from the dicarboxylic acid esters of linear or branched C_2 -C_{10} -alkanols, in particular diisopropyl adipate, di-n-butyl adipate, di (2-ethylhexyl) adipate, dioctyl adipate, diethyl / dibutyl / dioctyl sebacate, diisopropyl sebacate, dioctyl malate, dioctyl maleate, dicaprylyl maleate, diisooctyl succinate, di-2-ethylhexyl succinate and di- (2-hexyldecyl) succinate.

[0212] Also suitable are emollients of esters of linear or branched, saturated or unsaturated fatty alcohols having 2-30 carbon atoms with linear or branched saturated or unsaturated fatty acids having 2 to 30 carbon atoms, which may be hydroxylated.

Other emollients are selected from the addition products of ethylene oxide and / or propylene oxide to mono- or polyhydric C_{3-20} alkanols such as butanol, butanediol, myristyl alcohol and stearyl alcohol, e.g. PPG-14 butyl ether, PPG-9 butyl ether, PPG-10-butanediol, PPG-3 myristyl ether and PPG-15 stearyl ether.

[0213] It is preferred to use emollients based on C-18 plants, such as, for example, vegetable oils and corresponding mono- / di- / triglyceride mixtures based on saturated and unsaturated C_6-C_{24} fatty acids, esters of C_6-C_{24} fatty alcohols and / or fatty alcohols with carboxylic acids or polyols, such as sugars having 2 to 10 carbon atoms and 2 to 6 hydroxyl groups. In a preferred embodiment, no silicones are used.

Oils, fats and waxes

[0214] Typical examples of fats and oils are glycerides, i.e. solid or liquid vegetable or animal products consisting essentially of mixed glycerol esters of higher fatty acids. Suitable waxes are inter alia natural waxes, such as beeswax, crepe fat, candelilla wax, carnauba wax, ceresin, esparto grass wax, guaruma wax, japan wax, cork wax, lanolin (wool wax), microwaxes, montan wax, ozokerite (earth wax), petrolatum, paraffin waxes, ouricoury wax, rice germ oil wax, shellac wax, sunflower wax, fruit waxes such as orange waxes, lemon waxes, grapefruit waxes, sugarcane wax, chemically modified waxes (hard waxes), such as montan ester waxes, Sasol waxes, hydrogenated jojoba waxes, hydrogenated castor oil and synthetic waxes such as polyalkylene waxes and polyethylene glycol waxes.

[0215] In addition to the fats, additives and fat-like substances such as lecithins and phospholipids may be used. Examples of natural lecithins include cephalins. In addition, sphingosines or sphingolipids are suitable. Furthermore, mixtures of said oils and waxes are possible. Particular preference is given to vegetable oils, or triglycerides, as they are isolated from plants of the temperate zones. Very particular preference is given to oils of the plants and plant families as described in the application in the section "C18 plants".

[0216] The emollients may be present in the compositions according to the invention in an amount of 0.2 to 80% by weight, preferably of 0.2 to 70% by weight, based on the total amount of the composition.

Pearlescent waxes

[0217] Suitable pearlescent waxes are, for example: alkylene glycol esters, especially ethylene glycol distearate; Fatty acid alkanolamides, partial glycerides, esters of polyvalent, optionally hydroxyl-substituted carboxylic acids with fatty alcohols having 6 to 24 carbon atoms, fatty substances, such as fatty alcohols, fatty ketones, fatty aldehydes, fatty ethers and fatty carbonates, which have a total of at least 24 carbon atoms; Fatty acids such as stearic acid, hydroxystearic acid or behenic acid, ring-opening products of olefin epoxides having 12 to 24 carbon atoms with fatty alcohols having 12 to 24 carbon atoms and / or polyols having 2 to 15 carbon atoms and 2 to 10 hydroxyl groups and mixtures thereof.

[0218] Pearlescent waxes based on C18 plants are preferred according to the invention.

[0219] The amount used of pearlescent waxes - based on the total amount of the composition – can be at 0.1 to 5, preferably 0.5 to 3 and in particular 1 to 1.5 wt.-%.

Other ingredients

[0220] In addition to the components mentioned so far, the compositions according to the invention may contain further conventional ingredients for cosmetics which are well known to the person skilled in the art.

[0221] Accordingly, the cosmetic and dermatological compositions according to the invention can also contain other auxiliary cosmetic ingredients as they are usually used in such compositions , such as desensitizing additives (e.g. hydroxyl apatite, arginine with calcium carbonate, tin chloride, potassium chloride, strontium chloride, potassium nitrate, etc.), consistency enhancer, cationic polymers, film formers, superfatting agents, stabilizers, biogenic active ingedients, opacifiers, further protein derivatives such as gelatin, collagen hydrolysate, amino acids, oligo- or polypeptides of natural and synthetic origin, DNA or RNA oligonucleotides, deoxy sugars or polysaccharides containing deoxy sugar building blocks, creatine, xanthine derivatives, e.g. caffeine, theophylline, theobromine, aminophylline, egg yolk, honey, lanolin and lanolin derivatives, keratolytic and keratoplastic substances, enzymes and excipients, plant extracts, vitamins, provitamins and their esters, antiageing substances, fillers, pigments, suspending agents, buffer mixtures, surface-active substances, softening, wetting and / or moisturizing substances, antiinflammatory substances, meristem actives, flavonoids and flavonoid-rich plant extracts, isoflavonoids and isoflavonoid-rich plant extracts, ubiquinone and ubiquinone-rich plant extracts, silymarin, self-tanning active ingredients, depilatories and hair growth-promoting or hair-growth-regulating active ingredients, sebum-regulating active ingrdients, skin lightening actives or whitening agents in toothpastes (e.g. phosphates or papain), light stabilizers, insect repellents, bactericides, salts, antimicrobial, proteolytic or active substances, drugs or other regular ingredients of a cosmetic or dermatological formulation such as alcohols, polyols, polymers, foam stabilizers, organic solvents or electrolytes, and mixtures thereof ,

[0222] These are preferably contained in an amount of 0.001-20% by weight in the composition.

Foam

[0223] Composition according to the invention already forms a stable foam without further aids. Also suitable is the further addition of saponins, for example saponins from Indian soapnut (Sapindus mukorossi), Korean ginseng (Panax ginseng), agave plants, Inca cucumber (Cyclanthera pedata), liquorice (Glycyrrhiza glabra), ivy (Hedera), cowslip (Primula veris), chickweed (Stellaria media), forest-sanickel (Sanicula europaea), thorny toadstool (Ononis spinosa), legumes (Leguminosae), spinach (Spinacia), asparagus (Asparagaceae), oat (Avena), (Ononis spinosa), Shadow flowers (Maianthemum bifolium), soapwort (Saponaria officinalis), walnut (Aesculus hippocastanum), red chickweed (Anagallis arvensis), downy hempnettle (Galeopsis segetum), carthusian pink (Dianthus carthusianorum), common horsetail (Equisetum arvense) and soap bark (Quillaja saponaria Molina).

The amount of saponins is usually up to 5 wt.-%, preferably 0.001 to 3 wt.-%, in particular 0.01 to 2 wt.-%. (Wt.-% active ingredient based on the total composition) The saponins can be freely combined with other ingredients in inventive compositions.

pH adjusting agent

[0224] The pH of the composition according to the invention can be adjusted by means of customary pH regulators, to different pH ranges from acidic (pH 0-4) to neutral (pH 5-7) to basic (pH 8-14), depending on the application. The pH-adjusting agents are acids and / or alkalis. Suitable acids are in particular organic acids such as formic acid, acetic acid, citric acid, glycolic acid, lactic acid, succinic acid, adipic acid, malic acid, tartaric acid and gluconic acid or amidosulfonic acid. Particular preference is given to acids which are obtained from vegetable raw materials such as acetic acid, citric acid, lactic acid, malic acid and tartaric acid and to the mineral acids hydrochloric acid, sulfuric acid and nitric acid or mixtures thereof. Preferred bases are selected from the group of alkali and alkaline earth metal hydroxides and carbonates. In addition, the composition may contain ammonia and alkanolamines.

[0225] The composition is stable over a wide pH range, so different embodiments are possible, such as in the cosmetic hair dyeing a range between 5 and 11, shaving / hair removal between 3 and 10, soaps, deodorant and facial pH 5-9, in particular a skin-neutral pH of 5.5. Preferably, the composition has a pH between 0-14, more preferably between 3 and 11. In the field of detergents, acidic cleaners are possible such as bath, sanitary or toilet cleaners, neutral cleaners such as dishwashing detergents as well as alkaline cleaners such as grease and oil cleaners or detergents.

Solubilizers

[0226] In addition to the ingredients already mentioned, the compositions according to the invention can also contain solubilizers, so-called hydrotropics. All substances normally used for this purpose in washing and cleaning agents can be used.

Builders

[0227] Builders, which are commonly used in washing and cleaning compositions, are suitable. The builders can be freely combined with other ingredients by those skilled in the art in the inventive composition. Especially preferred in the composition according to the invention are builders based on renewable raw materials that can be obtained from plants of the temperate zone, such as polyaspartates, polycarboxylates such as citrates, and gluconates, succinates or malonates.

Dyes and perfumes

[0228] In order to improve the aesthetic impression of the composition according to the invention, all the fragrances and dyes customary in detergents and cleaners can be added to the composition according to the invention. Preferred dyes and fragrances, the selection of which presents no difficulty to the skilled person, have a high storage stability and insensitivity to the other ingredients of detergents or cleaners. The dyes have no pronounced substantivity to textile fibers or hard surfaces and do not stain them.

[0229] In a further preferred embodiment of the invention, as shown in the examples, neither dyes nor fragrances are added. The compositions have a satisfactory aesthetics and a pleasant fragrance even without the addition of dyes or fragrances, so as to enable embodiments without dyes and / or fragrances, such as for consumers with allergies and / or sensitive skin.

Enzymes

[0230] The composition shows such a good cleaning performance that enzymes are dispensable. The composition may optionally contain enzymes, especially in the embodiments for cleaning textiles, specialty detergents and dishwashing. The enzymes can be combined with all other ingredients mentioned here in the composition according to the invention by the person skilled in the art. Preference is given to using proteases, lipases, amylases, hydrolases and / or cellulases. They can be added to the composition according to the invention in any form established according to the prior art. In the case of liquid or gel-containing compositions, these include, in particular, solutions of the enzymes, preferably highly concentrated, low in water and / or mixed with stabilizers. Furthermore, the enzymes can be applied encapsulated.
In order to protect an enzyme contained in a composition according to the invention from damage such as inactivation, denaturation or decomposition, for example by physical influences, oxidation or proteolytic cleavage, enzyme stabilizers can be added to the enzyme-containing composition. Depending on the type of enzyme used, suitable enzyme stabilizers are, for example: benzamidine hydrochloride, borax, boric acids, boronic acids or their salts or esters, especially derivatives with aromatic groups, for example substituted phenylboronic acids or their salts or esters; Peptide aldehydes, amino alcohols such as mono-, di-, triethanol- and -propanolamine and mixtures thereof, aliphatic carboxylic acids up to C12, such as succinic acid, other dicarboxylic acids or salts of said acids; end-capped fatty acid amide alkoxylates; lower aliphatic alcohols and especially polyols, for example glycerol, ethylene glycol, propylene glycol or sorbitol; and reducing agents and antioxidants such as sodium sulfite and reducing sugars. Other suitable stabilizers are known in the art.

[0231] Particularly suitable according to the invention are biotechnologically produced enzymes with the aid of non-genetically modified organisms (non GMO), and stabilizers based on renewable raw materials and / or mineral substances, for example boric acid and / or borax, reducing sugars, succinic acid or other dicarboxylic acids, polyamino compounds in particular based on natural amino acids.

[0232] Surprisingly, in the enzyme-free embodiment, an outstanding cleaning performance with respect to carbohydrates is found, which is quite comparable with available enzyme-containing compositions, this is disclosed by way of example in the exemplary embodiments.
A particularly preferred embodiment of the invention is therefore one without cellulases or amylases, very particularly preferred is the enzyme-free embodiment. This is especially beneficial for consumers with allergies and / or sensitive skin. Enzyme-free embodiments with comparable cleaning power are disclosed in the embodiments.

Viscosity

[0233] The liquid or gel-kind embodiment of the composition according to the invention preferably has a viscosity of from 0.4 to 10000 mPa.s. For this purpose, the composition may contain viscosity regulators. The amount of viscosity regulators is usually up to 1.5 wt .-%, preferably 0.001 to 1.0 wt .-%, in particular 0.01 to 0.5 wt .-%: % by weight of active ingredient based on the total composition.

[0234] Suitable viscosity regulators include for example organically modified natural products (carboxymethylcellulose and other cellulose ethers, hydroxyethyl and - propylcellulose and the like, kernel flour ethers), organic fully synthetic thickeners (polyacrylic and polymethacrylic compounds, vinyl polymers, polycarboxylic acids, polyethers, polyimines, polyamides) and inorganic thickeners (polysilicic acids , phyllosilicates, clay minerals such as montmorillonites, zeolites, silicas), as well as organic natural thickeners (agar-agar, carrageenan, xanthan, traganth, gum arabic, alginates, pectins, polyoses, guar flour, locust bean gum, starch, dextrins, gelatin, casein).

[0235] In a preferred embodiment, the viscosity regulators are natural organic thickening agents from vegetable raw materials - including algae - for example, polysaccharides such as pectins or starch. In this embodiment, no organic fully synthetic thickeners such as polyacrylic and polymethacrylic compounds, vinyl polymers, polycarboxylic acids, polyethers, polyimines, or polyamides are used. Also preferred are inorganic thickeners.
Also preferred are biotechnologically produced thickening agents using non-GMOs such as xanthan gum.

[0236] Preferred compositions according to the invention thickened with xanthan gum are disclosed in the exemplary embodiments.

[0237] For the composition according to the invention, the viscosity regulators can be freely combined with other ingredients mentioned here by the skilled person.

Other ingredients

[0238] In addition to the components mentioned so far, the composition according to the invention may contain further ingredients known to the person skilled in the art which can be combined freely with other ingredients mentioned here.

- Fillers and auxiliaries such as adsorbents, bittering agents, bleaches, ironing auxiliaries, other bases, other acids, inlet preventer, film formers, neutral fillers, alkali and alkaline earth salts such as NaCl or $MgSO_4$, further builders, lubricants, hydrotropes, further solvents and solubilizers, opacifiers, Polymers, buffers, swelling agents, organic and inorganic salts, foam inhibitors, silicone oils, cosurfactants, viscosity regulators, waxes.
  Surprisingly, the composition according to the invention shows a very good cleaning performance against colored stains, as disclosed in the exemplary embodiments. A preferred embodiment therefore is without bleach.

- Process chemicals such as glycerin, denaturants, e.g. methyl ethyl ketone, etc., stabilizers and impurities or secondary components from the manufacturing process. In a preferred embodiment,

the composition contains glycerol, which is contained as a secondary component of the saponification reaction of natural fatty acids or added as an ingredient, wherein the proportion of glycerol preferably is between 0.01 and 10 wt.-%, particularly preferably 0.01 to 7 wt.-% and all particularly preferably 0.01 to 3 wt.-%, based on the total content in the composition.

- Functional agents and active ingredients such as abrasives, anti-redeposition agents, antistatic agents, bactericides, bleach activators, disinfectants, dye transfer inhibitors, other enzymes, fluorescent agents, fungicides, germicides, skin protection and skin care agents, hydrophilicizing agents, impregnating agents, insecticides, crease inhibitors, corrosion inhibitors, optical brighteners, oxidizing agents and catalysts, perfume carriers, repellents, probiotic ingredients, anti-slip agents, UV absorbers, grayness inhibitors, laundry starches.
- Stabilizers such as antioxidants, ascorbic acid and derivatives, tocopherol and derivatives, other antimicrobial agents and other preservatives,
- Fragrances and dyes
- and mixtures thereof.

Method

[0239] Another object of the invention relates to a method for cleaning, care and washing according to Claim 6. Methods for cleaning are generally distinguished by the fact that different cleaning-active substances are applied in several process steps to the items to be cleaned and washed off after the contact time, or that the items to be cleaned are otherwise treated with a washing, care or cleaning composition or a solution of this composition.

[0240] Preferred embodiments in the field of cosmetics are rinse-off products to clean and care.

[0241] The washing or cleaning method comprising the process steps

a) providing a washing, caring or cleaning solution comprising a composition according to claims 1-5, 10-12

b) contacting a natural or manufactured surface, a body or body part such as skin, hair, fur, etc., a hard or flexible surface, as well as textiles, carpets or natural fibers with the washing solution according to (a).

[0242] In the method described, temperatures of up to 90° C and less are used in the embodiment of the detergent or washing additive. Preference is given to temperatures below 60°C and very particularly preferred are temperatures that do not require heating the water for energy saving reasons (about 20°C). These temperature indications refer to the temperatures used in the washing steps.

[0243] In another method, the composition is applied to solid substrates, such as cloths of textile, composite, non-woven, fleece, paper, wadding or felt, among others. These are impregnated with the composition by a pressing, dipping, wiping or spraying process.

[0244] All facts, subjects and embodiments described for the compositions are also applicable to the washing and cleaning method and its use, and vice versa.

Uses

[0245] The uses are disclosed in claims 7-9. As described above, the invention also relates to the use of the composition for improving the washing or cleaning performance, in particular on dye, pigment or carbohydrate contaminants.

[0246] The composition according to the invention can be used as or for the production of washing and cleaning compositions for surfaces made of natural or manufactured, hard or flexible materials, as well as textiles, carpets or natural fibers. In the context of the invention, the washing and cleaning compositions also include washing aids which are added to the actual composition during manual or mechanical cleaning. Furthermore, detergents within the scope of the invention also include pre- and post-treatment compositions, i.e. those compositions which are used before the actual cleaning, for example for dissolving stubborn soiling.

[0247] The compositions can be applied to the items to be cleaned, which can be found in household, industry, trade or institutions, port facilities, as well as industrial and recreational, and sports facilities. Preferably, the composition is used for cleaning hard surfaces or textiles.

[0248] Hard surfaces in the context of this application are windows, mirrors, and other glass surfaces, surfaces made of ceramic, plastic, metal or wood, flat or uneven, painted and unpainted, flexible surfaces are, for example, plastic sheets, foam materials, skin, earth or others.

[0249] For the purposes of this application, natural surfaces are surfaces of living beings, humans, animals, plants or soil; such as skin, hair, soil, plants and their fruits or leaves, leather.

[0250] For the purposes of this application, textiles and fibers are fabric, clothing, upholstery, carpets, yarns, amongst others.

[0251] The subject matter of this application is furthermore the use of the compositions according to the invention as or for the production of cleansing and care preparations for the body, mouth and teeth, skin and hair as well as for animal care.

[0252] In particular, the invention relates to the use of the composition for removing colored or carbohydrate contaminants.

[0253] In a preferred embodiment, the composition is used at acidic pH between 0 and 7, preferably between 1 and 6, and most preferably at a pH between 2 and 4. Surprisingly, the combination according to the invention shows markedly good suitability for acidic cleaners and in particular shows a very good lime release power at acidic pH. The composition according to the invention is therefore suitable for the use of lime-dissolving detergents or cleaners, especially as sanitary cleaners, toilet cleaners, decalcifiers, rinse aids, dishwashing detergents, removers for cement and limescale, urine stone, beer stone, moss, algae, rust, water marks, fungal spots, coverings of brass and copper, oil stains etc. and others.

[0254] In the case of cosmetic use of the compositions according to the invention, it is suitable for use in depilatories, remedies such as, for example, psoriasis or atopic dermatitis, in particular for their prevention, furthermore for hair dyeing products and for intimate use.

[0255] In another preferred embodiment, the composition is used at an alkaline pH of between 7 and 14, preferably between 8 and 12. Typical examples of uses at alkaline pH are detergents, surface cleaners, kitchen cleaners, grill and oven cleaners, rim cleaners, and others.

[0256] Typical examples of cosmetic uses at alkaline pH are shaving soap, hair dye, soap cleansing.

[0257] In another preferred embodiment, the composition is used at neutral pH between 5 and 8, e.g. when a skin-neutral pH is required, such as in a dishwashing detergent.

[0258] Cosmetic applications include, for example, hand soap, face care, tonic, eye make-up remover, make-up remover, shampoo, shower preparations, contact lens cleansing, and others.

[0259] The compositions according to the invention are used as or for the preparation of cleansing and care products, preferably as cosmetic, dermatological or medical cleansing and / or care products which come into direct or indirect contact with the human body. These are, for example: shower preparations, bath preparations, hand soaps, also for coarse cleaning, hand pastes, intimate cleansing, cleaning of the eye area, contact lens cleaning, make-up remover, eye make-up remover, body cleansing, oral and dental care, hair shampoos, conditioning shampoos, anti-dandruff shampoo, baby shampoo, cleaning and care products for psoriasis, atopic dermatitis, acne; especially for the prevention, body or facial tonic, facial lotion, wet wipes, also with nourishing or other active ingredients, e.g. deodorizing, anti-aging, inter alia, depilatories and shaving products, hair tonics, coloration shampoos, hair dyes and hairstyling preparations, oral care product (oral hygiene product), in particular in the form of toothpaste, tooth gel, tooth powder, liquid to clean the teeth, foam to clean the teeth, mouthwash, mouthwash concentrate, toothpaste and mouthwash as a 2-in-1 product, oral spray.

[0260] Enclosed is according to the invention animal care and cleaning.

[0261] The compositions according to the invention are suitable for cleaning and washing preparations such as, for example, hand soaps, hand dishwashing detergents, machine dishwashing detergents, dishwasher cleaners, washing machine cleaners, toilet cleaners, WC cleaners, universal and all-purpose cleaners, kitchen cleaners, bathroom and sanitary cleaners, floor cleaners, oven and grill cleaners, windows and glass cleaners, metal cleaners, upholstery and carpet cleaners, heavy-duty detergents, color detergents, light-duty detergents, textile auxiliaries, pretreatment agents, specialty detergents and cleaners, and other products for industrial, commercial or institutional cleaning, products for textile and fiber treatment, products for leather treatment, as well as other forms of preparation.

[0262] For the purpose of this application, the composition can be used as a liquid, solution or dispersion, emulsion, lotion, gel, dunking liquid, spray or foam. So they can be present for example as a solution, an emulsion (O/W), or a multiple emulsion, for example, the type of water-in-oil-in-water (W/O/W), a gel, a

hydrodispersion, a lamellar phase, a liquid isotropic solution phase or a micellar phase. It can be adsorbed on powders, granules or tabs.

[0263] The compositions are suitable both for diluted application, as well as for direct application to the substrate to be cleaned. It is suitable for direct application, as well as for use via an aid such as a cloth. A special product form are solid substrates, such as wipes. These are soaked with the composition according to the invention, sprayed, coated or used up by another method. Solid substrates have the advantage that in them the preparation is already given in the correct dosage. This meets in particular the consumer request for convenience, they are easy to use, can be used directly without additional steps and can even be applied on the go, for instance when traveling, even if no water is available.

[0264] The liquid or gel embodiment with water or an organic solvent is preferred, particularly preferred is the aqueous embodiment.

[0265] Additional aspects of the present invention will become apparent from the following examples and the appended claims.

EXAMPLES

[0266] Following surfactants were used for the examples. All concentration data refer to the active content of the ingredients.

Surfactant A	Sodium Olive Oil PEG-7 Carboxylate	Hallstar
Surfactant R	Sodium Laureth-5 Carboxylate	Akypo Foam RL40, Kao
Biosurfactant 1	Sophorolipid	Sophoclean, Soliance
Biosurfactant 2	Sophorolipid	Soliance S Soliance
Biosurfactant 3	Sophorolipid	Sophogreen Soliance
Biosurfactant 4	Rhamnolipid	JBR425 Jeneil
Biosurfactant 5	Mannosylerythritollipid	via Usillago maydis
Biosurfactant 6	Cellobioselipid	via Usillago maydis
Biosurfactant 7	Trehaloselipid	via Rhodococcus

Stain removal ability

Experimental procedure on textiles:

[0267] Comparative washing tests were performed according to the AISE protocol November 2013.

[0268] Washing temperature: 40°C, dosage: 70 ml, washing machine load: 3kg, water hardness: 4.36 mmol $CaCO_3$ / l (hard water conditions)
Representative stain set according to AISE on cotton: Tea, coffee, red wine, fruit juice, tomato puree, carrots baby porridge, French mustard, chocolate, grass, grass / mud, blood, unused motor oil, frying fat, make-up. Standardized soiled test fabric can be purchased for example from EMPA (Swiss Federal Institute for Materials and Testing Switzerland). Analysis by statistical evaluation of the washing results.

[0269] For the analysis of the stain removal ability, all stains were evaluated statistically and evaluated visually according to a scale from 0 (very good, stain no longer visible) to 5 (insufficient, untreated reference stain). For reference, an enzyme-containing market product with EU Ecolabel was used.

[0270] To assess the results, the stains were categorized into carbohydrate-rich stains and colored stains (pigments and dyes). Then, the statistical washing performance per stain type, the total washing performance as arithmetic mean of all stains, the average washing performance on predominantly carbohydrate stains such as cellulose or starch and the averaged washing performance of the predominantly bleachable stains (colored stains) of the different test formulations were compared.

[0271] The compositions according to the invention show surprisingly good cleaning on carbohydrate stains such as starch and cellulose (Table 1)

Table 1: Synergy A/B1, Total surfactant concentration 9%, pH = 9,7

	1	2	3	4	Reference A	Reference B	Reference C
Linseed fatty acids, sodium salt	-			3,0%	Market product containing enzyme: Tandil Complete detergent with EU Ecolabel: DE/006/022	9,0%	
Surfactant A	-	9,0%	4,5%	3,0%		-	-
Surfactant R	-	-	-	-		-	4,5%
Biosurfactant 1	9,0%	-	4,5%	3,0%		-	4,5%
Sodium citrate	1,0%	1,0%	1,0%	1,0%		1,0%	1,0%
Tetrasodium Glutamate Diacetate	1,0%	1,0%	1,0%	1,0%		1,0%	1,0%
Sodium gluconate	2,4%	2,4%	2,4%	2,4%		2,4%	2,4%
NaOH (10%)	pH- adj.	pH- adj.	pH- adj.	pH- adj.		pH- adj.	pH- adj.
Acqua	ad 100	ad 100	ad 100	ad 100		ad 100	ad 100
Wash results							
Tea	4	4	4	4	4	4	4
Coffee	4	4	3	3	4	4	5
Red wine	4	3	2	1	4	4	4
Fruit juice	1	1	0	0	1	1	2
Tomato	2	1	1	1	1	2	3
Carrots	2	2	1	0	2	2	3
Mustard	3	3	2	2	3	3	4
Chocolate	2	2	2	2	2	3	3
Grass	3	3	2	1	3	4	4
Mud	1	3	1	1	1	4	2
Blood	4	3	3	3	3	3	4
Engine oil	2	2	2	2	1	3	2
Butter	0	0	0	0	0	0	0
Makeup	4	3	4	4	4	4	4
Pen	4	4	2	2	4	4	2
Sauce	2	1	1	0	1	2	2
Egg yolk	1	1	0	0	1	1	2
Average washing efficiency							
All stains	2,53	2,35	1,76	1,53	2,29	2,82	2,94
Carbohydrate stains	2,2	1,8	1,2	0,7	1,8	2,3	3,0
Colored stains	3,4	3,6	2,4	2,2	3,4	4,0	3,4

Carbohydrates: starch, cellulose (fruit juice, tomato puree, carrot, mustard, grass, sauce)
Coloured: bleachable stains (tea, coffee, red wine, mud, pen)

[0272] Result: The formulations with the synergistic combinations of the surfactants A (Table 1) with the glycolipid biosurfactants (inventive Examples 3, 4) clearly exceed the washing performance of the individual surfactants in the area of the carbohydrate-containing stains (Ex 1 and 2) and even exceed the enzyme-containing reference market product (Reference A), despite the fact that they do not contain carbohydrate-degrading enzymes such as amylases or cellulases.

[0273] In order to exclude effects due to the washing base and to demonstrate the specific effects of the inventive surfactant combination, reference B (washing solution only with soap) is also shown in Table 1.

[0274] Reference C (Table 1) and Reference D (Table 2) show the combination of the biosurfactant with a comparable lauric acid-based polyoxyalkylene carboxylate from palm oil (sodium laureth-5-carboxylate). In the Reference Examples, no synergy with the biosurfactant is noted.

[0275] Similar results are obtained with biosurfactant 4 as shown in Table 2.

Table 2: Synergy A/B4, Total surfactant concentration 9%, pH = 9,7

	5	6	7	Ref D
Linseed fatty acids, sodium salt	-		3,0%	
Surfactant A	-	4,5%	3,0%	
Surfactant R				4,5%
Biosurfactant 4	9,0%	4,5%	3,0%	4,5%
Sodium citrate	1,0%	1,0%	1,0%	1,0%
Tetrasodium Glutamate Diacetate	1,0%	1,0%	1,0%	1,0%
Sodium gluconate	2,4%	2,4%	2,4%	2,4%
NaOH (10%)	pH-adj.	pH-adj.	pH-adj.	pH-adj.
Acqua	ad 100	ad 100	ad 100	ad 100
Average washing efficiency				
All stains	2,47	1,71	1,53	2,71
Carbohydrate stains	2,2	1,0	0,7	2,5
Colored stains	3,2	2,4	2,2	3,6
Carbohydrates: starch, cellulose (fruit juice, tomato puree, carrot, mustard, grass, sauce)				
Colored stains: bleachable stains (tea, coffee, red wine, mud, pen)				

[0276] In general, the compositions according to the invention also show an unexpected synergistic improvement in detergency compared with the reference formulations in the area of bleachable stains (colored stains). These stains are generally not water soluble. A particularly high washing performance is achieved with pens, coffee and red wine. Despite the absence of often ecologically harmful bleaching

agents, the compositions of the invention show an exceptionally good cleaning performance on bleachable stains. Further examples after addition of a third surfactant are shown in Table 3.

3. Surfactant (D)

[0277]

Table 3: Examples with an additional nonionic surfactant

	8	9	10	11
Surfactant A	4,5%	3,0%	2,0%	3,0%
Biosurfactant 1				
Biosurfactant 3	4,5%			
Biosurfactant 4		3,0%	4,0%	3,0%
PEG-4 Rapeseedamide				3,0%
Rapeseed methylester oxylat, 7 EO			2,0%	
Olive oil Glycereth-PEG-8-ester		3,0%		
Almond oil PEG-7 esters	1,0%			
Sodium citrate	1,0%	1,0%	1,0%	1,0%
Tetrasodium Glutamate Diacetate	1,0%	1,0%	1,0%	1,0%
Sodium gluconate	2,4%	2,4%	2,4%	2,4%
NaOH (10%)	pH- adj.	pH- adj.	pH- adj.	pH- adj.
Acqua	ad 100	ad 100	ad 100	ad 100
Average washing efficiency				
All stains	1,53	1,59	1,47	1,53
Carbohydrate stains	1,3	1,0	1,0	1,2
Colored stains	1,8	2,2	2,4	2,2
Carbohydrates: starch, cellulose (fruit juice, tomato puree, carrot, mustard, grass, sauce)				
Colored stains: bleachable stains (tea, coffee, red wine, mud, pen)				

Cleaning power on dyes, pigments, makeup

[0278] Experimental procedure: The make-up is applied in several subjects as a spot of about 1 cm diameter on the skin (arm or leg) and dried for 5 min. The test substances used were typical eye and face make-up (eye shadow L'Oreal luminous, mascara L'Oreal Volume Million Lashes extra black, water-soluble, make-up The Extinguisher, silicone base, Maybelline, Kajal Expression Maybelline). Subsequently, a facial tissue is soaked with 1 ml of test solution and the stain wiped off once without pressure and assessed. Subsequently, an attempt is made to completely remove the stain. The tests are evaluated according to the following rating scale from 0 to 4 (Table 3) and statistically evaluated. The averaged and rounded results are shown in Table 4.

Table 3: Rating scale Make-up remover

Rating scala	Result with one-off cleaning	Steps required for complete removal
4	Colour slightly dissolved	Not possible
3	Dissolved color, stripes	Strong rubbing with pressure
2	Colour clearly dissolved	Light rubbing with pressure
1	Color almost completely removed	Gentle cleaning 2-3 times without pressure
0	Color completely removed	Smooth immediate cleaning without pressure

Table 4: Synergistic cleaning to remove make-up, Total surfactant concentration 8% in water

	Surfactant A	Biosurfactant B	A/B = 1:1
eye shadow	1	2	0
make-up	4	3	2
Mascara (water soluble)	3	4	3
Eyeliner Kajal	2	4	2
	2,5	3,25	1,75

[0279] Result: Surprisingly, a synergistic effect between surfactant A and biosurfactant B (here exemplified biosurfactant B1) is found. For all representative make-up categories, an equally good or better cleaning effect was found for the novel combination of both surfactants. These results are particularly striking for eyeshadows and make-up based on dyes and pigments. If one considers the averaged overall result, the combination according to the invention is 1.1 evaluation points above the evaluation of the average individual surfactants, which corresponds to an improvement of the overall cleaning effect of 22%.

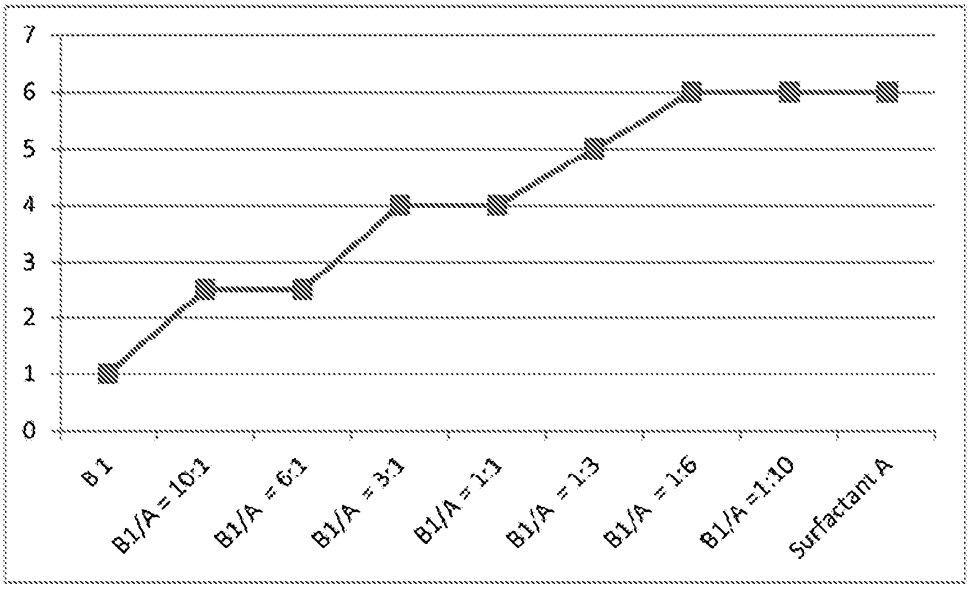
[0280] Performing with other biosurfactants gave analogous results, for example, the biosurfactant glycolipid 4 gives a total result of 3.3 as an 8% solution while the 1: 1 mixture with surfactant (A) has a total washing power of 2.0. In further experiments, it was further confirmed that the synergy for other cleaning of dyes or pigments such as ballpoint pen, earth, etc. is also given on different surfaces. By way of example, some example formulations are disclosed in the exemplary embodiments.

Foam depending on the surfactant ratio

[0281] Biosurfactants are characterized by a rather low foaming behavior. In some applications, however, foaming compositions are desired. It is therefore desirable to obtain foaming compositions by means of suitable surfactant combinations with biosurfactants. Surfactant A is known for a good foaming behavior, but primarily in combination with the well-foaming sodium laureth sulfate, where foaming in all ratios of combination is unchanged high. The behavior of surfactant A in combination with the low-foaming biosurfactants depending on the surfactant ratios is unpredictable.

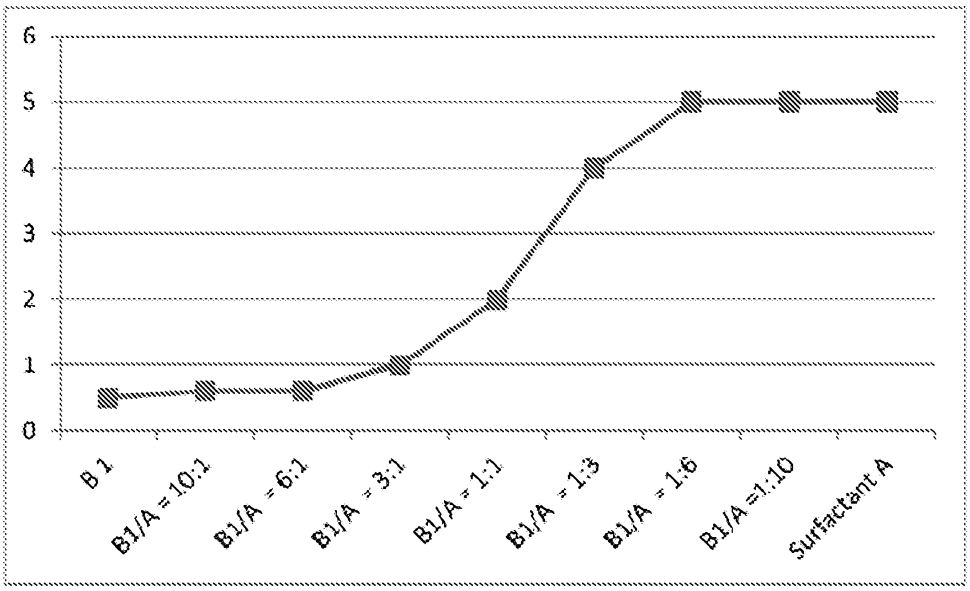
[0282] Foaming is determined by immediately measuring the foam height after shaking the test mixture. The foam stability is determined by measuring the foam height after 15 min. The mean values of 5 determinations are shown in the diagrams 1-2.

Diagram 1: Foaming (example of biosurfactant B1)



Result: Surfactant A shows approx. 6x higher foaming than biosurfactant 1. The mixtures according to the invention behave approximately additively with regard to foaming.

Diagram 2: Foam stability after 15 min (example of biosurfactant B1)



Result: Surfactant A surprisingly shows a foam-stabilizing effect on B1 starting at a ratio of A: B ≥ 1: 6.

[0283] Starting from a ratio of A: B ≥ 6: 1, the foam height corresponds to that of surfactant A.

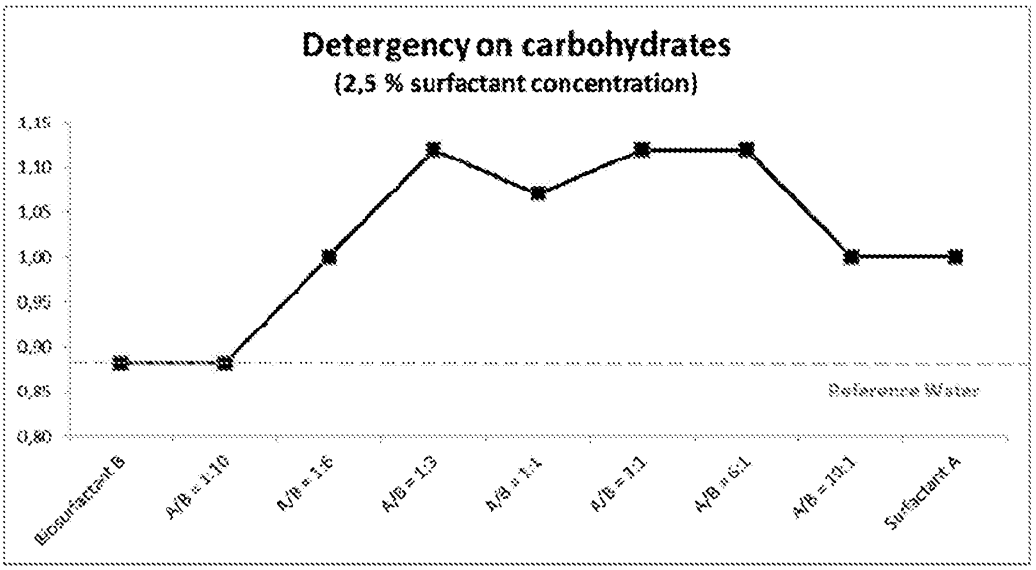
[0284] Another advantage of combining biosurfactants with surfactant A is that some of the biosurfactants, e.g. B1 and B2, can settle in water. The combination with surfactant A gives stable, transparent solutions in water.

Carbohydrate detergency as a function of the surfactant ratio

[0285] Experimental procedure: A surfactant solution of 2.5% in water was measured in order to determine the optimal surfactant ratio for the detergency on carbohydrates. For this purpose, a defined amount of sucrose / glucose mixture was compacted and colored, introduced in the test solution at 20° C and the time determined after which the tablet is completely dissolved without stirring or other mechanical action (= detergency).

[0286] Evaluation: For the comparative determination of the detergency on carbohydrates, the test series are standardized in each case on the detergency of that surfactant which shows the better detergency on carbohydrates, here surfactant A. The test values of the surfactant mixtures are given relative to the detergency of the standard, with the result listed in each case corresponding to the average of the individual results per test series (Diagram 3).

Diagram 3: Detergency on carbohydrates in dependence on the surfactant ratio, total surfactant concentration 2,5 % each, example of biosurfactant 1

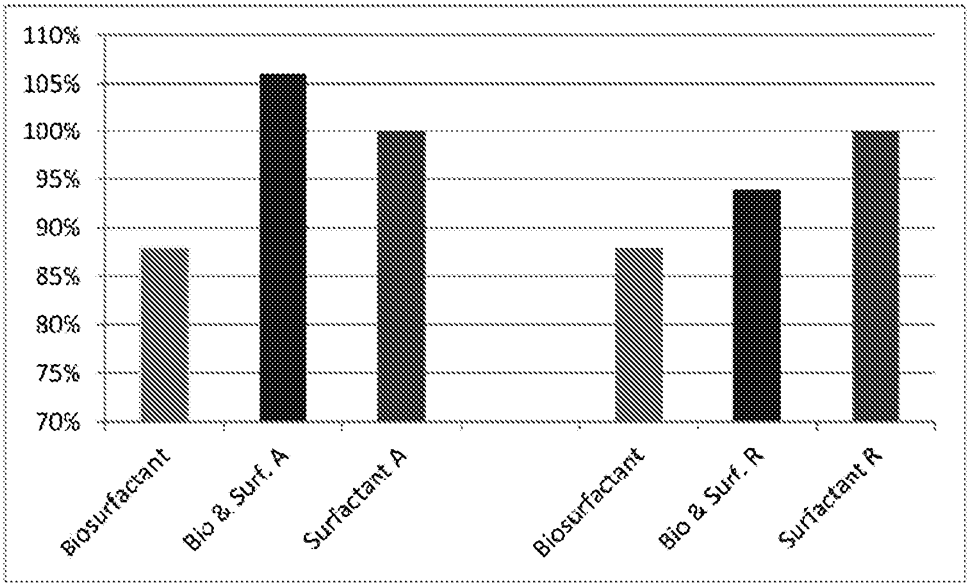


Result: In a ratio A: B ≥ 10: 1 and A: B ≤ 1:10, no effect on the detergency of carbohydrates is found. The detergency corresponds in each case to the corresponding surfactant, which is present in excess. The synergistic effect becomes apparent in the range between A: B ≥1: 6 and A: B ≤10: 1. There, the inventive mixtures show a detergency, which is - at the same concentration - significantly above the detergency of the individual surfactants. As a reference, pure water was chosen. The washing power of pure water is 88% based on surfactant A (standard) and corresponds to the value of pure biosurfactant B1.

[0287] The carbohydrate detergency of a 1% surfactant solution of surfactant A and biosurfactant B1 was measured by the same method in comparison to a 1% surfactant solution of surfactant R and biosurfactant B1, each in a ratio of 1: 1. Surfactant A and R are both polyoxyethylene carboxylates, with

the main difference that surfactant A is derived from a C-18 plant, while reference surfactant R is based on coconut fatty acids (Table 5), again based on surfactant A as standard = 100%.

Table 5: Detergency on carbohydrates of Surfactant A compared to Reference (1% total surfactant concentration)



Result: Surfactant A and surfactant R show comparable detergency on carbohydrates as sole surfactants. However, combining the surfactants, one obtains an increased detergency of surfactant A in combination with biosurfactant B1, while the combination with surfactant R shows a reduced detergency. Only the combination with surfactant A behaves synergistically.

[0288] The experiments were also performed with other types of carbohydrates with comparable results, such as sorbitol. Particularly surprising in these experiments is that the synergistic effect can already be determined in solution at low concentrations of only 1% surfactant mixture.

Acidic pH

[0290] The synergistic effect of removing carbohydrate soil or dye soil / pen can further be used in the cleaning of hard or flexible, natural or synthetic surfaces, even at acidic pH.

[0291] The prerequisite for this application, in addition to the stability of the composition in the acidic is, that the surfactant mixture does not adversely affect the effect of an acid on lime.

Experimental procedure:

[0292] The method for determining the lime dissolving power is based on the recommendations for quality assessment for bathroom cleaners or toilet cleaner from IKW (Industrieverband Körperpflege- und Waschmittel e. V.) and based on the quantitative determination of the weight loss of $CaCO_3$ (marble) after immersing the marble slabs in the test liquid for 10 min.

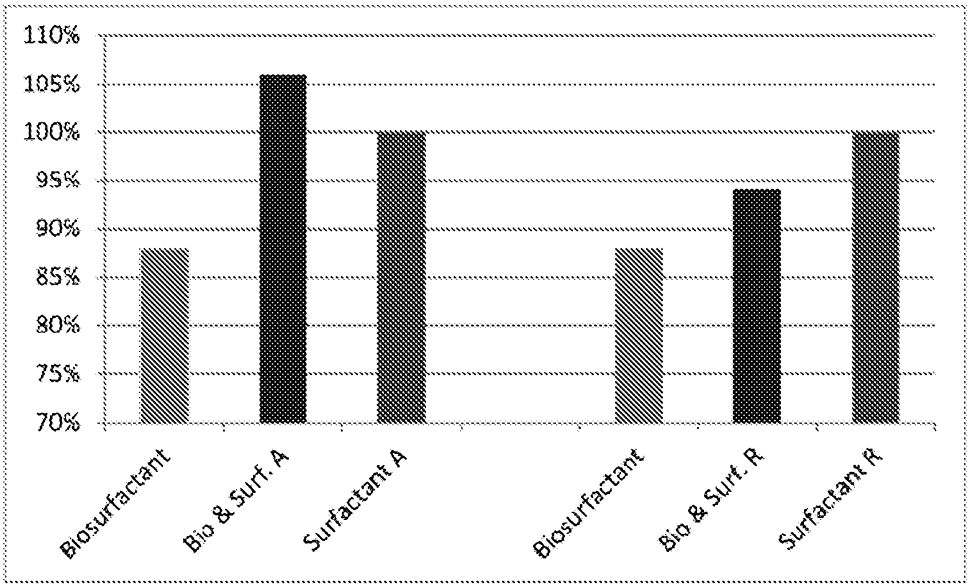
[0293] Evaluation: For the comparative determination of the lime dissolving power, the test series are each standardized to the leaching capacity of the biosurfactant used (= 100% reference). The test value of the surfactant mixtures is given relative to the lime-dissolving power of the reference, the result listed being in each case the mean value of the individual results per test series.

[0294] The lime-dissolving power of the compositions according to the invention (here exemplarily in the ratio of surfactant A / glycolipid biosurfactant B 1 = 1: 1, 1% surfactant solution) are determined in 5.3% citric acid and compared to the reference R based on coconut fatty acids.

Table 11: Lime dissolving power 1% surfactant solutions with citric acid at pH = 2.1-2, based here on the lime-dissolving power of the 1% biosurfactant solution

	B1	A	A:B1 = 1:1	R	R: B1 = 1:1
Surfactant A		1%	0,50%		
Surfactant R				1%	0,50%
Biosurfactant B1	1%		0,50%		0,50%
Citric acid	5,30%	5,30%	5,30%	5,30%	5,30%
Water	ad 100	ad 100	ad 100	ad 100	ad 100
Lime-dissolving power	100%	86%	97%	95%	60%

Table 12: Lime-dissolving power Surfactant A + Biosurfactant



Result: Frequently, the lime-dissolving power of an acid solution is reduced by the addition of surfactants, in particular with the addition of several surfactants, which additionally influence the interactions between the surfactants and lime.

[0295] By contrast, the inventive compositions (here exemplarily in the ratio of surfactant A / glycolipid biosurfactant B 1 = 1: 1; 1% surfactant solution) surprisingly almost reach the lime-dissolving power of the acid solution. This could generally be confirmed by experiments with other biosurfactants.

[0296] The situation is different with the C-12 surfactants commonly used: If the tests are carried out with analogous C12 surfactants of the analogous surfactant class R, the lime-dissolving power is considerably reduced and is only around 60% of the lime-dissolving power of the individual components (Table 12). ,

[0297] The 1% surfactant concentration with citric acid at pH = 2.1-2.2 is representative of acidic cleaners such as surface cleaner, toilet cleaner or bathroom cleaner.

Further examples

[0298] In the following, example formulations according to the invention are disclosed. Tables 13-23 show the following examples of cosmetic preparations and cleaning agents. The data relate in each case to % by weight of the active substance in the entire composition.

Tables 13 and 14: Skin and hair cleansing preparations:
1-4 Shampoo with active ingredients
5 Nourishing shampoo
6 Conditioning shampoo
7 Detergent preparation with soap
8 Mild shampoo
9-11 Hand cleansing
12, 13 Bath products

Table 15: Face care products
14-16 Makeup Remover
17-19 Cleansing Facial Milk

Table 16: Nourishing lotions, especially as liquid for wet wipes
20- 32 Cleansing lotions

Table 17: Hair care (without preservatives)
33 Conditioner
34, 35 Conditioner
39 Hair Color
40 Tinting Shampoo

Table 18: Shaving Products

Table 18: Oral Hygiene Products

Table 20: Alkaline cleaners and detergents, for example, for use as a grill or oven cleaner , rim cleaner, grease cleaner, surface cleaner, etc.

Table 21: Cleaner with solvents, for example surface cleaner, anti-graffiti cleaner, glass or window cleaner, cleaning solutions for wet wipes inter alia.

Table 22: Cleaner at neutral pH, for example, for use as a neutral detergent, surface cleaner, dishwashing detergent

Table 23: Acid cleaner, for example for use as toilet cleaner, sanitary cleaner, bathroom cleaner, lime remover, inter alia

Used ingredients

[0299]

Linseed fatty acids, Cremer
PEG-40 sunflowerglyceride, Levenol SR 152, Kao
Sodium gluconate, Akzo Nobel
Rapeseed methyl ester oxylat, 7 EO
Rapseed methyl ester, UCY
Oleyl monoethanolamide + 4 EO, OMA 4, Akzo Nobel
Cocamid DEA, Rewomid DC 212 S, Evonik Industries
Olive oil Glycereth-PEG-8-ester
Mandelöl PEG-7 esters, Hallstar
Propylenglycol, Dow
Lemon oil, Symrise
Propanol, Dow
Butoxypropanol, Dow
Walnut Shell Powder 40/100, Elementis Specialties
Saponin, Baja YE, Desert King
Limonene, Symrise
Saponin (Saponaria officinalis), Organic Soapwort Extract - BCE4523, Biocosmethic
Olive amidopropylbetain, Soliance
Tetrasodium Glutamate Diacetat, Akzo Nobel
Tetrasodium Iminosuccinat, Lanxess
Sodium lactate, Jungbunzlauer
Propylenglycol, Dow
Xanthan gum, Keltron, CP Kelco
Cocamid DEA Rewomid DC 212 S, Evonik Industries
Xanthan Gum, Keltrol, CP Kelco
Panthenol, BASF
Tocopheryl Acetat, BASF
Sodium Lactat, Evonik Industries
Hydrolyzed Wheat Protein, Gluadin WLM, BASF
Climbazol Crinipan AD, Symrise
Octopirox Clariant
Zinc Pyrithion, Lonza
Glycerol, Cremer
Hydroxypropylmethylcellulose, Evonik
Pentylene Glycol, Dow
Oliveamidopropylbetain, Soliance
Brassicoamidopropyldimethylamine, Kao
Saponine, Baja YE, Desert King
Almon oil PEG Glyceridester, Mulsifan, Zschimmer & Schwarz
Peg-20 Sunflower oil, Levenol, Kao
1,2-Propandiol, Dow
EDTA, Dow
Teebaumöl, Lucas Meyer
Brennnessel Extract, Phytotex Nettle, Crodarom

Rosemary Officinalis, Rosmary Eco, Provital
Sonnenblumenöl Glycereth-8 ester
Olivenöl PEG-7 Ester, Hallstar
Rapsmethylester, UCY
Sojamethylester, Stepan
Limonen, Symrise
Juglans regia, Walnut Shell Powder 40/100, Elementis Specialties
Carboxmethylcellulose, BASF
Tetrasodium Iminodisuccinat, Lanxess
Ethylendiamine-N,N-disuccinic acid, Natriquest E30 , Innospec
Prunus Armeniaca Kernel Oil, Refined Apricot Kernel Oil - BCE1021, Biocosmethic
Oenothera Biennis Oil, Refined Evening Primrose Oil - BCE1014, Biocosmethic
Cathamus Tinctorius Öl, Seatons Safflower Oil , Croda
Prunus amygdalus dulcis oil, Refined Sweet Almond Oil - BCE1082, Biocosmethic
Aloe Barbadensis Gel, Aloe Vera Gel - Eco Provital Group
Lecithin, Bergasom sun 75, Berg & Schmidt
Bentonite, Gelwhite H, Eckart Effect Pigments
PEG-20-soybean oil
Hair colors, BASF
Sodium GLDA, Akzo Nobel
Herbasec Henna, Lipoid Cosmetics
Beta Vulgaris Root Extract, Day Moist CLR, CLR Chemisches Laboratorium Dr. Kurt Richter GmbH
Oenothera Biennis Öl, Organic Evening Primrose Oil - BCE1516, Biocosmethic
Chitosan, Marine Biopolymer, Lucas Meyer
Triethylcitrat, Jungbunzlauer
Salicylic acid, A& E Connock
Niacinamide, Lonza
Matrixyl Synthe 6, Sederma
Glycerin (and) Aqua (and) Malpighia Glabra (Acerola) Fruit Extract, Fruitliquid, Crodarom
Dimethyl glutarate, Solvay
Potassium Sorbate, Tri-K Industries
Hydrated Silica, Evonik
Sorbitol 70% Food Grade , Global Starch
Zinc lactate, Jungbunzlauer
Xylite, Foodchem
Sodium Gluconate, Jungbunzlauer
Titanium dioxid, AEROXIDE® TiO2 P 25, Evonik Corporation Silica
Sodium saccharinate/ Saccharine, I.H.C. Chempharm
Beta Glucan, Clariant
Citrus Paradisi (Grapefruit) Peel Extract , Solid Extract Grapefruit FR-O, Frutarome Industries Ltd.
Sodium Benzoate, I.H.C. Chempharm
Camellia Oleifera Seed Oil, Organic Camellia Oil - BCE1542, Biocosmethic
Sodium Glucoheptonate, Akzo Nobel

Table 13: Examples for cleaning compositions for skin and hair

	1	2	3	4	5	6	7	8
Biosurfactant 3	3,5		3,5				3	
Biosurfactant 4		2,5						5
Biosurfactant 5				2,5				
Biosurfactant 6						1,5		
Biosurfactant 7					2,5			
Surfactant A	3	2,5	1,5	2,5	2,5	5	8	5
Sunfloweracids, potassium salt							2	
PEG-4 Rapeseedamid	2	2						
Brassicamidopropyl dimethylamine						1,5		
Sweet almond oil Glycereth-8 ester			0,5		2		2	
Sunflower PEG-8 Ester								2
Saponin				2				
Brassica alcohol							0,4	
Glycerol			0,5	0,5			3	3
1,2-Propandiol		0,5			0,5	0,5		
Tetrasodium GLDA	0,2	0,2						
Zinc Omadine	2	2						
Piroctone Olamine								
MELALEUCA ALTERNIFOLIA LEAF OIL				0,5				
URTICA DIOICA EXTRACT Extrakt			2					
Rosmarinus Officinalis (Rosemary) Extract					5	5		
Panthenol							1	1
Optional: thickener, perfume, preservative, silicones, pH regulating agents, active ingredients, other active ingredients.								
Acqua	ad 100	ad 100	ad 100	ad 100	ad 100	ad 100	ad 100	ad 100

Table 14: Examples for cleaning compositions for skin and hair

	9	10	11	12	13
Biosurfactant 2			0,2		
Biosurfactant 3		6	0,6		
Biosurfactant 4	6				
Biosurfactant 5					3
Biosurfactant 6				3	
Surfactant	1,5	1,5	4	5	1
Olive oil fatty acids, Sodium salts			0,5		
PEG-4 Rapsseedamid	1,5	1,5		8	
Sunflower oil PEG-20	4	4			5
Sunflower Glycereth-8 ester	1,5				10
Almond oil PEG-7 ester		1,5			
Rapeseed methylester oxylate(7EO)			5		
Apricot kernel oil					10
Saponin				2	
Ethanol		7			
Rapemethylester	0,3				
Sojmethylester		0,3			
Limonene		0,5			
Walnut Shell Powder	15				
Silica			35		
Aloe Vera extract				0,3	
Hydrolysed wheat protein				4	
Lecithine					0,5
Carboxymethylcellulose	0,6	0,6			
Sodium carbonate			0,5		
Tetrasodium iminodisuccinate (IDS)		0,2			
Ethylendiamine-N,N'-disuccinic acid (EDDS)			0,2		
Panthenol					0,5
Optional: thickener, perfume, preservative, silicones, pH regulating agents, active ingredients.					
Acqua	ad 100	ad 100	ad 100	ad 100	ad 100

Table 15: Examples for facial care products

	14	15	16	17	18	19
Biosurfactant 1		3				
Biosurfactant 2	0,5					
Biosurfactant 3				5		
Biosurfactant 4						15
Biosurfactant 5			2			
Biosurfactant 6						0,5
Biosurfactant 7					0,3	
Surfactant A	3	0,8	0,6	1	0,6	5
Apricot kernel oil				5		
Evening Primrose Oil					5	
Cathamus Tinctorius Öl						40
Sweet Almond Oil				5	5	
PEG-4 Rapsseedamid						3
Sun flower oil Glycereth-8 ester	1,75	5				20
Alkohol denat.				20	20	
Glycerol	2			10	10	
1,2-Propandiol	6		10	5	5	5
Limonene				0,001	0,001	
Aloe Barbadensis Gel	0,05		0,05	0,05	0,05	
Lecithin				0,5	0,5	0,5
Hydroysed wheat protein				0,2	0,2	
Bentonite				0,1	0,1	
Panthenol		0,5		0,1	0,1	
Optional: thickener, perfume, preservative, silicones, pH regulating agents, active ingredients.						
Acqua	ad 100	ad 100	ad 100	ad 100	ad 100	ad 100

Table 16: Examples for nourishing lotions, in particular for wet wipes

	20	21	22	23	24	25	26	27	28	29	30	31	32
Biosurfactant 1							5						
Biosurfactant 2	3		2		2								
Biosurfactant 3					0,1					3			
Biosurfactant 4		2		5		2		5			3		
Biosurfactant 5									5				
Biosurfactant 6													3
Biosurfactant 7												3	
Surfactant A	0,8	0,6	0,6	1	0,6	0,6	5	5	5	0,3	0,3	1	1
Olive oil glycereth-8 esters					2	3			10				
Rapemethylester								10					
Oenothera Biennis Öl										10	10	10	10
Alkohol	25	40					40	40					
Glycerol					1		10		40	5	5	5	5
1,2-Propandiol		3	ad 100	ad 100	ad 100	5					2	2	2
Chitosan	0,2												
Glycolic acid	0,08	0,04											
Triethylcitrat		2											
Niacinamide			0,1	0,1									
Salicylic acid			0,1	0,1									
Aloe Barbadensis Gel										0,2	0,2	0,2	0,2
Hydroxy Propyl Methyl Cellulose	0,8												
Matrixyl Synthe 6					2								
Glycerin (and) Aqua (and) Malpighia Glabra (Acerola) Fruit Extract						3							
Dimethyl glutarate							40	40	40				
Potassium sorbate					0,1	0,2				0,2	0,2	0,2	0,2
Optional: thickener, perfume, preservative, silicones, pH regulating agents, active ingredients													
Acqua	ad 100	ad 100	-	-		ad 100				ad 100	ad 100	ad 100	ad 100

Table 17: Examples for hair care

	33	34	35	39	40
Biosurfactant 1					4
Biosurfactant 3	0,5				
Biosurfactant 4		2			
Biosurfactant 5			2		
Biosurfactant 6				3	
Surfactant A	2	7	5	0,6	2
PEG-4 Rapseedamid					3
Hydrolysed Almond protein	0,6				
Hydrolysed Wheat protein	0,2				0,2
Wheat germ oil PEG-8 ester	0,5	0,3	0,3		
Brassicamidopropyl dimethylamine		0,9	0,9		
Ethanol	10			7	
Tocopherol	0,2				
Propylenglycol		2	2	2	
Herbasec Henna				5	
Beta Vulgaris Rootextract				0,2	
Juglans Regia Shell extrakt					0,2
Mignonette Tree extract				0,4	0,2
Optional: thickener, perfume, silicones, pH regulating agents, active ingredients					
Acqua	ad 100	ad 100	ad 100	ad 100	ad 100

Table 18: Examples for shaving products

	41	42	45	46	47	48
Biosurfactant 2					0,3	
Biosurfactant 3						5
Biosurfactant 4	3,5					
Biosurfactant 5		6				
Biosurfactant 6			2			
Biosurfactant 7				2		
Surfactant A	1,5	3	5	5	0,6	5
Olive oil fatty acids				5		5
Olive oil fatty acids, Sodium/ Potassium salts	18				25	
Monoethanolamin				1,3		
Oenothera Biennis Oil	5	10	0,5			

(Tab 18 cont')	**41**	**42**	**45**	**46**	**47**	**48**
Arnica oil		10				3
Camellia Oleifera Seed Oil		10				
PEG-4 Rapssamenamid			1	2		
Sorbitan olivate						5
PEG-20 Sunflower oil			4			
Grape seed oil Glycereth-8 ester				0,2		
Glycerol	5			5	10	2
Natrium Glucoheptonate				0,2		
Tetranatrium GLDA						0,3
Sodium Glucuronat					0,2	
Panthenol	0,5		0,2			
Allantoin	0,5				10	
Aloe Vera			0,2			0,3
Hydroxypropyl Methylcellulose				0,7		
Optional: thickener, perfume, preservative, silicones, pH regulating agents, active ingredients						
Acqua	ad 100	ad 100	ad 100	ad 100	ad 100	ad 100

Table 19: Examples for oral care products

	49	**50**	**51**	**52**	**53**	**54**	**55**	**56**	**57**
Biosurfactant 2	3					0,8			
Biosurfactant 3							0,5		
Biosurfactant 4		3							
Biosurfactant 5			3					0,5	
Biosurfactant 6				1,5					0,5
Biosurfactant 7					3				
Surfactant A	0,6	0,7	0,7	0,25	0,9	0,6	0,6	0,25	0,25
Glycerol	60	10			10		13		
Hydrated Silica	20	25	25	25	25				
Sodium fluoride		0,2	0,1	0,2					0,2
Sorbitol		35	35	20	20				5
Maris sal			7						
Plant extracts (e.g. chamomile, peppermint, myrrh, thyme, sage, etc.)	1,2		0,8			3,5			
Alkohol	0,3							15	

(Tab 19 cont')	**49**	**50**	**51**	**52**	**53**	**54**	**55**	**56**	**57**
1,2-Propandiol									5
Xanthan gum		1	0,8						
Hydroxycellulose		1		1,3	1				
Sodium gluconate		0,8							
Titanium dioxide		0,8							
Sodium saccharinate		0,7			0,5				0,2
Chitosan					0,1		0,1		
ß- Glucan					0,3				
Citrus Paradisi (pompelmo) Peel Extract			0,1					0,2	
Saccharin		0,1		0,1					
Sodium benzoate		0,2				0,2			0,2
optional: flavourings, colouring agents, pH-adjusting agents									
Acqua	ad 100	ad 100	ad 100	ad 100	ad 100	ad 100	ad 100	ad 100	ad 100

Table 20: Examples of alkaline cleaners

	58	59	60	61	62	63	64	65	66	67	68	69
Biosurfactant 1	2,0%					1,0%		1,0%				
Biosurfactant 4		2,0%					0,5%		1,0%			
Biosurfactant 5			2,0%							0,5%		
Biosurfactant 6				2,0%							1,0%	
Biosurfactant 7					2,0%							1,0%
Surfactant A	0,6%	0,6%	1,5%	3,0%	1,5%	0,7%	1,0%	0,7%	0,7%	1,5%	1,0%	1,0%
Olive oil soap (Potassium salt)										0,5%	5,0%	2,0%
PEG-4 Rapsseedamid							0,5%					
Olive oil glycereth-8 ester								0,2%				
Rapseeed methylester oxylat, 7 EO	0,2%								0,2%			
Sodium gluconat	1,2%	1,2%	1,2%	1,2%	1,2%					1,2%	0,5%	
Sodium carbonat						0,2%	0,2%	0,2%	0,2%			
Tetrasodium Glutamate Diacetate	1,0%	1,0%	1,0%	1,0%	1,0%			1,3%	0,5%	0,5%	0,5%	0,5%
Ethanol	5,0%	5,0%	5,0%	5,0%	5,0%						3,0%	
Propylenglycol									3,0%			
Lemon oil						0,5%	0,5%					
Lactic acid										pH = 8.5	pH = 8.5	pH = 8.5
Acqua	ad 100	ad 100	ad 100	ad 100	ad 100	ad 100	ad 100	ad 100	ad 100	ad 100	ad 100	ad 100

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Table 21: Examples for cleaners with solvents

	70	71	72	73	74	75	76	77	78	79	82	83	84
Biosurfactant 1	1,5%	0,8%	0,8%	1,2%	1,5%	1,0%	0,2%						
Biosurfactant 5								0,8%			1,1%		
Biosurfactant 6									0,8%			2,0%	
Biosurfactant 7										0,8%			2,0%
Surfactants A	1,0%	1,0%	1,2%	0,8%	1,0%	1,0%	0,3%	0,8%	4,0%	0,6%	2,0%	2,0%	2,0%
Rapseed methyl-ester oxylat, 7 EO						1,5%							
Rapseed methyl ester				2,0%	2,0%					2,0%	2,0%	2,0%	
Ethanol	15,0%	97,8%			15,0%	96,0%	5,0%		15,0%		94,5%		
Propylenglycol			97,6%	95,6%				8,0%		15,0%		93,8%	95,6%
Butoxypropanol							0,5%						
Limonene	0,2%	0,4%	0,4%	0,4%	0,2%	0,5%		0,4%	0,2%	0,3%	0,4%	0,2%	0,4%
Acqua	ad 100				ad 100		ad 100	ad 100	ad 100	ad 100			

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Table 22 (cont´): Examples of cleaners with solvents

	85	86	87	88	89	90	91
Biosurfactant 4	1,5%	0,8%	2,0%	1,2%	4,0%	5,0%	0,2%
Surfactant A	0,6%	1,0%	0,3%	0,8%	3,5%	1,0%	0,3%
IDS	0,5%	0,1%					
PEG-4 Rapseedamid	1,0%		0,3%				
Rapseed methyl ester				2,0%	2,0%		
Ethanol	15,0%	97,8%			15,0%	89,0%	5,0%
Propylenglycol			94,4%				
Glycerol			3,0%				
Propanol				95,6%			
Butoxypropanol							0,3%
Limonene		0,3%		0,4%	0,2%	5,0%	
Potassium sorbat			0,2%				0,2%
Acqua	ad 100				ad 100		ad 100

Table 21: Examples for cleaners at pH 5,5 -7,0

	92	93	94	95	96	97	98	99	100	101	102	103
Biosurfactant 1	0,5%	5,0%	2,0%	4,0%		3,0%						
Biosurfactant 2								0,5%				
Biosurfactant 3							2,0%					
Biosurfactant 4						3,0%			4,0%			
Biosurfactant 5					2,0%					1,5%		
Biosurfactant 6											1,5%	
Biosurfactant 7												2,0%
Surfactant A	1,0%	2,0%	2,0%	4,0%	2,0%	2,0%	4,0%	1,0%	2,0%	0,8%	0,8%	2,0%
Olive oil Glycer-eth-PEG-8-ester	4,6%						2,0%				2,0%	
PEG-4 Rapseedamid				4,0%								0,8%
Rapeseed methyl-ester Oxylat 7 EO			3,0%							3,0%		
Saponin (Saponaria officinalis)					3,0%			4,6%	3,0%			
Sodium citrat	1,0%		1,0%			1,0%	1,0%				1,0%	
Tetrasodium Glutamate Diacetat	0,5%										0,2%	
Tetrasodium Iminosuccinat		0,5%										0,5%
Sodium Lactat					1,0%			1,0%				
Alkohol		2,0%							3,0%		3,0%	
Propylenglycol									0,3%	0,3%		0,3%
Limonen		0,2%									0,1%	
Lactic acid	pH-reg.	pH-reg.	pH-reg.	pH-reg.	pH-reg.	pH-reg.	pH-reg.	pH-reg.	pH-reg.	pH-reg.	pH-reg.	pH-reg.
Acqua	ad 100	ad 100	ad 100	ad 100	ad 100	ad 100	ad 100	ad 100	ad 100	ad 100	ad 100	ad 100

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Table 22: Examples for acidic cleaners

	104	105	106	107	108	109	110	111	112	113	114	115
Biosurfactant 1	3,0%	5,0%			3,0%		2,0%					0,5%
Biosurfactant 2										0,5%		
Biosurfactant 4			5,0%					2,0%			2,0%	0,5%
Biosurfactant 5						1,5%						
Biosurfactant 6				1,5%								
Biosurfactant 7									0,5%			
Surfactant A	1,0%	2,5%	2,5%	1,5%	1,5%	1,5%	0,6%	0,6%	1,5%	0,6%	1,0%	0,6%
Linseed fatty acids						0,1%						
PEG-4 Rapseedamid					0,5%							
Rapsseed methylester oxylat, 7 EO										0,2%		
Olive oil Glycereth-PEG-8-ester	0,2%											
Citric acid	1,9%						15,0%	1,9%	1,9%	1,9%	15,0%	1,9%
Lactic acid	0,9%	3,8%	3,8%	3,8%	3,8%	3,8%		0,9%	0,9%	0,9%		0,9%
Formic acid				0,9%								
Xanthan gum		0,4%			0,2%			0,4%				
Ethanol							8,0%				8,0%	
Acqua	ad 100%	ad 100%	ad 100%	ad 100%	ad 100%	ad 100%	ad 100%	ad 100%	ad 100%	ad 100%	ad 100%	ad 100%

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EP3290500 (B1) — 2019-05-15

Detergent Composition and Care Composition containing Polyoxyalkylene Carboxylate

(Wasch-, Pflege- und Reinigungsmittel mit Polyoxyalkylen Carboxylat)

Applicant: RICHLI REMO [CH]

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6052 Hergiswil / CH

Application Number: EP20170020388 20170825

Priority Number(s): CH20160001113 20160829

1. Sammensætning indeholdende mindst et alkoxyleret tensid (A) fra gruppen af polyoxyalkylencarboxylater med formlen (I) og mindst en glycolipidbiosurfaktant (B) omfattende rhamnolipider, sophorolipider, mannosylerythritollipider, cellobioselipider og trehaloselipider, hvor tensidet eller tensiderne (A) forholdet på ≥ 1: 6 til biosurfaktanterne (B) er til stede; baseret på vægtprocent aktivt middel i hele agenset;

(I) $R'\text{-}O(C_bH_{2b}O)_o\text{-}\{CH_2\text{-}CH[O(C_bH_{2b}O)_pR'']\text{-}CH_2O\}_r\text{-}(C_bH_{2b}O)_q\text{-}R'''$

med

b et helt tal mellem 2 og 4,
o, p, q uafhængigt af hinanden tal fra 0 til 75, hvor o + p + q er mindst 2,
r er 0 eller 1,

R', R'' og R''' er hver uafhængige af hinanden H, CH_2COOM eller COR, hvor en eller to, fortrinsvis en af radikalerne R', R'' og R''' repræsenterer CH_2COOM: Hvis R '= CH_2COOM derefter o ≠ 0, hvis R'' = CH_2COOM derefter p ≠ 0, hvis R'''= CH_2COOM derefter q ≠ 0, med **M** = H, alkali eller ammoniumkation, og hvor en eller to af R', R'' og R''' repræsenterer RCO;

med **R** af en mættet, mono- eller flerumættet carbonhydridkæde med 5-23 carbonatomer og RCO afledt af en fedtsyreblanding, hvor andelen af fedtsyregruppen RCO af 18 og flere carbonatomer over 60 vægt-%, fortrinsvis over 72 vægt-% og mest fortrinsvis ligger på mere end 77 vægt-%;

og hvor andelen af umættede fedtsyrerester over 55 vægt-% fortrinsvis over 65 vægt-% og mere fortrinsvis ligger over 72 vægt-% hvert tilfælde baseret på den samlede andel fedtsyrerester RCO af det anvendte tensid (I)

og hvor tensidet (I) består af en blanding af forskellige kædelængde og mætnings- niveauer af fedtsyre resten RCO som ovenfor defineret og er afledt

af en C-18 vegetabilsk olie fra gruppen omfattende: amarant, anis, æble, abrikos, argan, arnica, avocado, bomuld, borage, brændenælde, broccoli, canola, chia, hamp, hasselnød, bøg, buksbom, tidsel, spelt, jordnød, fladaks, lilla, karse, byg, granatæble, havre, hamp, hasselnød, blåbær, hyldebær, jasmin, solbær, perikum, jojoba, kamelia, kamille, kommen, gulerod, kirsebær, koriander, kongelys, strandkål, korsvortemælk, græskar, iberisk dragehoved, lavendel, sæddodder, hørfrø, liguster, lupin, lucerne, macadamia, majs, mandel, marula, mirabelle, melon, valmue, mongongo, moringa, natlys, oliven, olieradise, oliearugula, passionsblomst, pekannød, fersken, blomme, pistacie, tranebær, purgernød (jatropha), raps, ris, morgenfrue, agerkål, saflor, salvie, havtorn, sort spidskommen, sesam, sesamblad, sennep, solsikke, soja, tobak, valnød, vindrue, hvede, engkarse og vildrose; og kombinationer heraf.

2. Sammensætning ifølge krav 1 således markeret, at mindst en polyoxyalkylencarboxylater med formlen (I) er til stede som en blanding af forskellige kædelængde og mætningsniveauer af fedtsyrerest RCO, hvor andelen af mættet og umættede fedtsyrerester RCO med 20 eller flere kulstof tomer yderligere > 0,01 vægt.-%, især fortrinsvis > 0,05 vægt.-% og mest foretrukket > 0,1 vægt.-% og mest fortrinsvis > = 0,2 vægt.-%.; vægt.-% baseret på den totale fraktion af fedtsyrerester RCO i tensidet (I).

3. Sammensætning ifølge et af de foregående krav, der yderligere indeholder mindst en sæbe (C) med formlen (IX)

   RCOOM (IX)

   M er en alkali- eller ammoniumkation,

   hvor sæben eller sæberne (IX) er til stede som en blanding af forskellige kædelængder og mætningsniveauer af fedtsyrerester RCO og er afledt af C-18-vegetabilsk olie med R og RCO som i tidligere krav RCO.

4. Sammensætning ifølge et af de foregående krav, der yderlingere omfatter mindst en nonionisk tensid (D) udvalgt fra gruppen af alkoxylerede

fedtsyreester, alkoxylerede fedtsyreglyceridester, alkoxylerede vegetabilske olieestere med formel (X) eller alkoxylerede fedtsyreamider med formel (XI):

(X) $RCO\text{-}O(C_mH_{2m}O)_o\text{-}\{CH_2\text{-}CH[O(C_mH_{2m}O)_pR'']\text{-}CH_2O\}_w\text{-}(C_mH_{2m}O)_q\text{-}R'''$

m er 2, 3 eller 4,
o, p, q er uafhængigt af hinanden tal fra 0 til 75, hvor $o + p + q \neq 0$,
R" er H eller COR,
R''' er H, COR eller et lineært eller forgrenet alkylradikal med 1-8 C-atomer,
w er o eller 1;

(XI) $R\text{-}CO\text{-}NH\text{-}(C_mH_{2m}O)_n\text{-}H$

hvor
m er heltalet 2 eller 3,
n antal i intervallet 2-10, fortrinsvis i intervallet 2-8, mest fortrinsvis 2-4,

hvor det eller tensiderne (X) og (XI) uafhængigt af hinanden som en blanding af forskellige kædelængder og mætningsniveauer af fedtsyrerester RCO eksisterer, og RCO er afledt af en C18 vegetabilsk olie med R og RCO, som defineret i tidligere krav.

5. Sammensætning ifølge et af de foregående krav, kendetegnet ved, at andelen af de valgte tensider bestående af polyoxyalkylencarboxylater (A) i formlen (I), de valgfri tensider (C) og (D), og eventuelt tensider (E), med det forbehold at (E) af C-18-vegetabilske olier er afledt, og biosurfaktant glycolipider (B) udgør samlede ≥ 35 vægt.-%, fortrinsvis ≥ 60 vægt.-%, mere fortrinsvis ≥ 95 vægt.-% og mest fortrinsvis ≥99 vægt.-% er baseret på det samlede indhold af tensider i sammensætningen.

6. Vaske-, pleje- eller rengøringsproces omfattende processtrinnene
a) tilvejebringelse af en vaske-, pleje- eller rengøringsopløsning omfattende et sammensætning ifølge et hvilket som helst af de foregående krav
b) at bringe i kontakt et tekstil, overflade eller kropsdel, hud eller hår med

vaske-, pleje- og rengøringsmidler i henhold til a)

7. Anvendelse af sammensætning ifølge et hvilket som helst af de foregående krav til forbedring af rengøringsydelsen af et vaske-, rengørings- eller plejemiddel eller en gennemvædet klud til rengøring, især i kulhydrat- eller farvetilsmudsninger.

8. Anvendelse af sammensætning ifølge et af de foregående krav som håndsæbe, håndopvaskemidler, opvaskemidler til opvaskemaskiner, Vaskemiddel til opvaskemaskiner, vaskemaskiner, toiletrensere, toiletrensere, universalrensere og alt renere, køkkenrengøringsmidler, badeværelse- og sanitetsrengøringsmidler, gulvrenser, ovn og grillrengøringsmidler, glas- og vinduesrensemidler, metalrensemidler, rengøringsmidler til møbler og tæpper, hvidvaskemidler, farvevaskemidler, finvaskemidler, tekstilhjælpemidler, forbehandlingspræparater, specialvaskemidler og -rengøringsmidler, industrielle, kommercielle og institutionelle rengøringspræparater, rengøringsmidler til fødevareindustrien, tekstil- og fiberbehandlingsmidler, læderbehandlingsmidler.

9. Anvendelse af sammensætning ifølge et af de foregående krav som et kosmetisk, dermatologisk eller medicinisk rengørings- og/eller plejeprodukt, såsom brusepræparater, badepræparater, håndsæber, også til grov rengøring, håndpastaer, intim rengøring, rengøring af øjenområdet, kontaktlinserens, makeupfjerner, øjenminkfjerner, præparater til kropsrensning, oral pleje og tandpleje, hårshampoer, konditioneringsshampoer, flamshampoo, babyshampoo, rengørings- og plejeprodukter, især til forebyggelse af psoriasis, atopisk dermatitis og acne; body and face tonics, face lotion, wipes, især med omhu, deodorant, antimikrobielle eller anti-aldrende aktive ingredienser, hårfjerning og barberingsprodukter, hårfarvestofshampoer, hårfarvestoffer og hårstylingpræparater, mundhygiejneprodukter, især i form af tandpasta, fløde til børstning af tænder, gel til børstning af tænder, flydende til børstning af tænder, skum til børstning af tænder, mundskyl, mundskylskoncentrat, mundspray.

10. Sammensætning ifølge krav 1, kendetegnet ved, at glycolipidbiosurfaktanten (B) er en sophorolipid eller rhamnolipid

11. Sammensætning ifølge krav 1, kendetegnet ved, at tensidet (A) er Sodium PEG-7-olive oil carboxylat.

12. Sammensætning ifølge krav 4, kendetegnet ved at tensidet (D) er valgt fra repræsentanterne ”plante olie” glycereth-y ester, ”plante” PEG-y-ester, ethoxylated rapemethylester (y-EO), med ”plante” = abrikos (kerne), avocado, bomuld, saflor, hamp, jojoba, hørfrø, macadamia, mandel, majs, oliven, fersken kerne, ris, sesam, soja, solsikke, drue (kerner), (kim) hvede, raps, colza olie med y = 6-10, foretrækkes 7-8 og PEG-4 rapsfrøamid.