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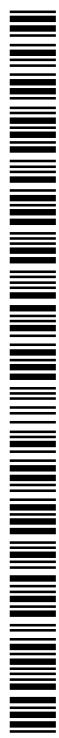
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(54) Title: COMPOSITION WITH COOLING SENSATION

(57) Abstract: A cosmetic or dermatological composition, with a liquid crystal phase, comprises: (i) one or more alkylpolysaccharides; (ii) one or more alcohols with a carbon chain having from 12 to 22 carbon atoms; (iii) at least one ester with a melting point less than or equal to 30°C; and (iv) at least one hydrophilic UV filter. The preparation of the composition and the method using the composition are also disclosed.



WO 2018/086005 A1

Composition with cooling sensation

The present invention relates to a composition, in particular a cosmetic or dermatological composition, with a liquid crystal phase.

5 More particularly, said composition is a controlled release composition.

PRIOR ART

10 Lamella structure compositions are conventionally used in cosmetic field for providing a controlled release effect to the skin. For example, sunscreen formula's ability to protect the skin from UV damage depends on a wide variety of factors, among which lamella structure formulations are introduced, see in Gao et al. *Sunscreen Formulas with Multilayer Lamella Structure*, *Cosmetics & Toiletries magazine*, Vol.118, No.10, 2003, p41-48. These publications relates to the use of liquid crystal system as a controlled release system.

15 On the other hand, skin sensory of a cosmetic product after application has always been one of the key factors to the consumers. Due to its nature, consumers find sunscreen products are often unpleasant to apply on the skin, especially when the temperature is relatively high, such as during summer time. There is thus a need for a composition, in particular a sunscreen composition with a pleasant sensory after application, such as a fresh and cooling sensation.

20 However none of the above mentioned document of the prior art has disclosed such a composition with a desired cooling and fresh sensory.

Besides, such liquid crystal system as a controlled release system needs to be improved notably with respect to their stability over time.

25 Also, such liquid crystal system as a controlled release system needs to be improved notably with respect to their instant and long-lasting cooling sensation after application.

AIMS OF THE INVENTION

30 Accordingly, one aim of the present invention is to provide a composition, in particular a cosmetic or dermatological composition, and in particular a liquid crystal system as a controlled release system, having a good stability over time.

35 Another aim of the present invention is to provide a composition, in particular a cosmetic or dermatological composition, and in particular a liquid crystal system as a controlled release system, having an instant and long-lasting cooling effect on a keratin material, especially on skin.

In particular, one aim of the present invention is to provide a composition, in particular a cosmetic or dermatological composition, and in particular a liquid crystal system as a controlled release system, having an instant and long-lasting cooling effect on a keratin material, especially on skin.

Another aim of the present invention is to provide a composition, in particular a cosmetic or dermatological composition, and in particular a liquid crystal system as a controlled release system, having together an instant and long-lasting effect on a keratin material, especially an instant and long-lasting cooling effect, and a good stability over time.

DESCRIPTION OF THE INVENTION

The Applicant has now discovered that it is possible to solve the above technical problems by providing a composition, in particular a cosmetic or dermatological composition, with a liquid crystal phase, comprising:

- (i) one or more alkylpolysaccharides;
- (ii) one or more alcohols with a carbon chain having from 12 to 22 carbon atoms;
- (iii) at least one ester with a melting point of less than or equal to 30°C; and
- (iv) at least one hydrophilic UV filter.

More particularly, said composition is a controlled release composition.

The invention relates to a cosmetic article comprising at least one composition as defined in the present invention.

The invention relates to a cosmetic process process for caring and/or making up a keratin material, comprising the application, to the surface of said keratin material, of at least one composition as defined in the present invention, wherein said keratin material is preferably skin, in particular face

By "keratin materials" we intend to mean human keratin materials and more specifically skin.

By "cooling effect" we intend to mean a fresh, hydration feeling on the skin after application of the composition of the invention.

Such an effect is measured and demonstrated by infrared thermometer camera. More specifically, the cooling effect is measured according to the following protocol:

The composition according to the present invention is applied on a substrate; then a thermometer is placed on top of the substrate. The temperature of the substrate is measured using the thermometer at different time points.

Other subjects and characteristics, aspects and advantages of the invention will emerge even more clearly on reading the description and the examples that follows.

In that which follows and unless otherwise indicated, the limits of a range of values are included within this range, in particular in the expressions "of between" and "ranging from ... to ...".

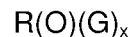
Moreover, the expression "at least one" used in the present description is equivalent to the expression "one or more".

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS

Advantageously, said alkylpolysaccharide is a surfactant.

For the purposes of the present invention, the term "alkylpolyglycoside" means an alkylmonosaccharide (degree of polymerization 1) or an alkylpolyglycoside (degree of polymerization greater than 1).

The alkylpolyglycosides may be used alone or in the form of mixtures of several alkylpolyglycosides. They generally correspond to the following structure:



in which the R substituent is a linear or branched C12-C22 alkyl substituent, G is a saccharide residue and x ranges from 1 to 5, preferably from 1.05 to 2.5 and more preferentially from 1.1 to 2.

The saccharide residue may be chosen from glucose, dextrose, saccharose, fructose, galactose, maltose, maltotriose, lactose, cellobiose, mannose, ribose, dextran, talose, allose, xylose, levoglucan, cellulose and starch.

More preferentially, the saccharide residue denotes glucose.

It should also be noted that each unit of the polysaccharide part of the alkylpolyglycoside may be in a α or β isomer form, in L or D form, and the configuration of the saccharide residue may be of furanoside or pyranoside type.

It is, of course, possible to use mixtures of alkylpolysaccharides, which may differ from each other in the nature of the borne alkyl unit and/or the nature of the bearing polysaccharide chain.

Alkylpolysaccharides can be also selected from the group consisting of myristyl alcohol/myristyl glucoside (Montanov 14®); isostearyl alcohol/isostearyl glucoside; cetylstearyl alcohol/cetylstearyl glucoside (Montanov 68®); cetylstearyl alcohol/cocoglucoside (Montanov 82®); arachidyl alcohol and behenyl alcohol/arachidyl glucoside (Montanov 202®); C14-22 Alcohols/C12-20 Alkyl Glucoside- (Montanov L®); cocoyl alcohol/cocoyl glucoside (Montanov S®); hydroxystearyl alcohol and hydroxystearyl glucoside (SIMULGREEN 18-2®); octyldodecyl xyloside and PEG-30 dipolyhydroxystearate (EASYNOV®); Octyldodecanol and octyldodecyl oylside (FLUIDANOV 20X®), or any mixture thereof.

In one embodiment, said alkylpolysaccharides are selected from the group consisting of alkylpolysaccharides with an alkyl having from 12 to 22 carbon atoms.

In one embodiment, said alkylpolysaccharides are selected from the group consisting of alkylpolysaccharides with an alkyl having from 14 to 18 carbon atoms.

5 In one embodiment, said alkylpolysaccharide is present in the form of a mixture of are alkylpolysaccharides with an alkyl part having a 12 to 22 carbon atoms and even more preferentially from 14 to 18 carbon atoms.

10 In one embodiment said alkylpolysaccharide is selected from the group consisting of cocoyl glucoside, arachidyl glucoside, myristyl glucoside, cetearyl glucoside, cetylstearyl glucoside, isostearyl glucoside, and any mixture thereof.

In one embodiment said alkylpolysaccharide is selected from the group consisting of myristyl glucoside, cetearyl glucoside, and any mixture thereof.

15 In one embodiment, the amount of alkylpolysaccharide(s) ranges from 0.1 to 20%, preferably from 1 to 10%, and more preferably from 3 to 9% by weight relative to the total weight of the composition.

For example, the amount of alkylpolysaccharide(s) is of about 6% by weight relative to the total weight of the composition.

20 As regards the alcohol(s), they may be linear or branched alcohols, of synthetic origin, or of natural origin, for instance alcohols derived from plant matter (coconut, palm kernel, palm, etc.) or animal matter (tallow, etc.). Long-chain alcohols may also be used, for instance ether alcohols or Guerbet alcohols. Finally, use may also be made of certain more or less long fractions of alcohols of natural origin, for instance coconut or tallow oil.

Such alcohols are typically referred to as fatty alcohols.

25 Advantageously, the fatty alcohol is solid at room temperature (20°C).

According to a preferred embodiment of the present invention, the fatty alcohol(s) used are chosen from those containing from 12 to 22 carbon atoms and even more preferentially from 14 to 18 carbon atoms.

30 As particular examples of fatty alcohols that may be used in the context of the present invention, mention may be made especially of lauryl alcohol, cetyl alcohol, myristyl alcohol, stearyl alcohol, isostearyl alcohol, palmityl alcohol, oleyl alcohol, behenyl alcohol and arachidyl alcohol, which may thus be taken alone or as mixtures.

In one preferred embodiment, the composition comprises myristyl alcohol, cetyl alcohol, stearyl alcohol, or any mixture thereof.

35 In one embodiment, the amount of fatty alcohol(s) ranges from 0.1 to 50%, preferably from 1 to 30% by weight relative to the total weight of the composition.

For example, the amount of fatty alcohol(s) is from 5 to 20% by weight relative to the total weight of the composition.

Advantageously, the composition comprises a fatty alcohol/alkylpolyglycoside mixture forming an emulsifying mixture. Such mixtures are described for example in patent applications WO 92/06778, WO 95/13863, WO 98/47610, and WO 2014/048648 which are incorporated herein by reference and are prepared for example according to the preparation processes indicated in those documents.

Among the fatty alcohol/alkylpolyglycoside mixtures that are particularly preferred, mention may be made of the products sold by the company SEPPIC under the name Montanov®, such as the following mixtures: cetylstearyl alcohol/cocoyl glucoside (Montanov 82®), arachidyl alcohol and behenyl alcohol/arachidyl glucoside (Montanov 202®), myristyl alcohol/myristyl glucoside (Montanov 14®), cetylstearyl alcohol/cetylstearyl glucoside (Montanov 68®), C14-22 Alcohols/C12-20 Alkyl Glucoside- (Montanov L®), cocoyl alcohol/cocoyl glucoside (Montanov S®).

In one embodiment, the composition comprises at least one fatty alcohol and at least one alkylpolysaccharide whose alkyl parts are identical.

The amount fatty of the alcohol/alkylpolyglycoside mixture ranges preferably from 0.5% to 50%, and more preferentially from 1 % to 30%, and even more preferentially from 5 % to 30% by weight relative to the total weight of the emulsion.

The terms “ester according to the invention” (or equivalent terms) means an ester with a melting point of less than or equal to 30°C, wherein said ester is an ester or a mixture of esters.

Preferably, the melting point of the monoester is ranging from 22 to 27° C

In one embodiment, the ester is a monoester.

In one embodiment, said ester with a melting point of less than or equal to 30°C is selected from the group consisting of monoesters of C₄ -C₁₀ aliphatic acids and of C₁₆ -C₁₈ aliphatic alcohols, and any mixtures thereof.

The monoester(s) of C₄ -C₁₀ aliphatic acids and of C₁₆ -C₁₈ aliphatic alcohols which may be employed according to the invention are preferably selected from the group consisting of monoesters of C₄ -C₁₀ linear or branched saturated aliphatic acids and of C₁₆ -C₁₈ linear saturated aliphatic alcohols.

Monoesters of this type which are more particularly preferred according to the present invention are the ester of heptanoic acid and of stearyl alcohol (or stearyl heptanoate), the ester of octanoic acid and of stearyl alcohol (or stearyl octanoate) or

stearyl heptanoate/octanoate mixtures, in particular the stearyl heptanoate/octanoate mixture such as for example the stearyl heptanoate (70%)/octanoate (30%) mixture sold, for example, by the company Croda under the trade name Crodamol W or by the company Stearinerie Dubois under the trade name Dub Solide.

5

Within the meaning of the invention, the melting point corresponds to the temperature of the most endothermic peak observed in thermal analysis (DSC) as described in Standard ISO 1 1357-3; 1999. The melting point of the ester may be measured using a differential scanning calorimeter (DSC), for example the calorimeter sold under the name MDSC 2920® by the company TA Instruments.

10

The measurement protocol is as follows: A sample of 5 mg of ester placed in a crucible is subjected to a first temperature rise ranging from -20°C to 100°C, at a heating rate of 10°C/minute, it is then cooled from 100°C to -20°C at a cooling rate of 10°C/minute and it is finally subjected to a second temperature rise ranging from -20°C to 100°C at a heating rate of 5°C/minute. During the second temperature rise, the variation in the difference in power absorbed by the empty crucible and by the crucible containing the sample of ester is measured as a function of the temperature. The melting point of the compound is the temperature value corresponding to the top of the peak of the curve representing the variation in the difference in power absorbed as a function of the temperature.

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In one embodiment, monoester is selected from the group consisting of Stearyl Heptanoate (MP: 23-27° C)(TEGOSOFT SH); Astrocaryum Murumuru Seed Butter (MP: 31+/- 6° C) – (RAIN FOREST RF3710), Theobroma Grandiflorum Seed Butter (MP: 31+/- 6° C) (RAIN FOREST RF3410 CUPUACU BUTTER REFINED GRADE), and any mixture thereof.

25

In one embodiment, the amount of ester(s) according to the invention ranges from 0.1 to 20%, preferably from 1 to 10%, and more preferably from 2 to 8% by weight relative to the total weight of the composition.

30

For example, the amount of ester(s) according to the invention is of about 5% by weight relative to the total weight of the composition.

In one embodiment, the composition of the invention comprises one or more sunscreen agents, known also as UV filters.

35

More preferably the composition comprises one or more hydrophilic UV-screening agents. In a preferred embodiment, said composition comprises only hydrophilic UV-

screening agents among UV-screening agents present in the composition. In such a particular embodiment, the composition comprises 0% by weight of hydrophobic UV-screening agent, relative to the total weight of the composition.

In one embodiment the composition of the invention comprises less than 0.2%, preferably less than 0.1%, more preferably less than 0.05%, by weight of hydrophobic (or in other words "lipophilic") UV-screening agent, relative to the total weight of the composition. In a particular embodiment, the composition comprises 0% by weight of hydrophobic UV-screening agent relative to the total weight of the composition.

In one embodiment, said composition comprises one or more UV filters other than said at least one hydrophilic UV filter. The term "hydrophilic UV-screening agent" means any organic or mineral sunscreen agent capable of being fully dissolved in molecular form in a liquid aqueous phase or of being dissolved in colloidal form (for example in micellar form) in a liquid aqueous phase.

The term "hydrophobic UV-screening agent" or "lipophilic screening agent" means any organic or mineral sunscreen agent which can be fully dissolved in molecular state in a liquid fatty phase or which can be dissolved in colloidal form (for example in micellar form) in a liquid fatty phase.

In one embodiment, the composition of the invention is a sunscreen composition.

The term "sunscreen composition" or "sunscreen agent" means any composition or ingredient that absorbs or scatters at least a part of UV radiations and prevents said UV radiations from reaching the skin, especially deeper layers of the skin (typically the dermis). This term is broadly used to cover sunblocks and sunscreens. The efficacy of such compositions or agents is typically measured by the SPF and/or PPD value.

The compositions according to the invention may comprise organic or inorganic sunscreen agents, also known as filtering agents or filters, filtering wavelengths within the UVA and/or UVB ranges, which are hydrophilic or lipophilic or insoluble in routine cosmetic solvents.

The organic filters may be selected from anthranilics; cinnamic derivatives; salicylic derivatives; benzophenone derivatives; phenyl benzotriazole derivatives; benzalmalonate derivatives particularly those cited in the patent US5624663; phenyl benzimidazole derivatives; imidazolines; 4,4-diarylbutadiene derivatives; bis-benzoazole derivatives as described in the patents EP669323 and US 2,463,264; p-aminobenzoic acid (PABA) derivatives; methylene bis-(hydroxyphenyl benzotriazole) derivatives as described in the applications US5,237,071, US 5,166,355, GB2303549, DE 197 26 184 and EP893119; benzoxazole derivatives as described in the patent

applications EP0832642, EP1027883, EP1300137 and DE10162844; filter polymers and filter silicones such as those particularly described in the application WO-93/04665; dimers derived from α -alkylstyrene such as those described in the patent application DE19855649; 4,4-diarylbutadienes as described in the applications EP0967200, DE19746654, DE19755649, EP-A-1008586, EP1133980 and EP133981; merocyanine derivatives such as those described in WO04006878, WO05058269 and WO06032741 and the mixtures thereof.

Classification according to UVA and/or UVB radiation wavelength range

I/ Lipophilic UV-A screening agents

Dibenzoylmethane derivatives:

Isopropyl Dibenzoylmethane;

Aminobenzophenones:

n-hexyl 2-(4-diethylamino-2-hydroxybenzoyl)-benzoate particularly sold under the trade name "UVINUL A +" by BASF;

1,1'-(1,4-piperazinediyl)bis[1-[2-[4-(diethylamino)-2-hydroxybenzoyl]phenyl]-methanone (CAS 919803-06-8)

Anthranilic derivatives:

Menthyl anthranilate particularly sold under the trade name "NEO HELIOPAN MA" by SYMRISE;

4,4-diarylbutadiene derivatives:

1,1-dicarboxy (2,2'-dimethyl-propyl)-4,4-diphenylbutadiene;

Merocyanine derivatives:

Octyl-5-N,N-diethylamino-2-phenylsulfonyl-2,4-pentadienoate;

Within the scope of the invention, and according to one particular embodiment, the following lipophilic filters are used:

Butyl Methoxydibenzoylmethane

II/ Hydrophilic UV-A screening agents

The bis-benzoazolyl derivatives as described in the patents EP 669 323, and US 2,463,264 and more specifically the compound Disodium Phenyl Dibenimidazo tetra-sulfonate sold under the trade name "NEO HELIOPAN AP" by SYMRISE;

- 5 The preferred hydrophilic UVA filter is Terephthalylidene Dicamphor Sulfonic Acid.

III/ Lipophilic UV-B screening agents

Para-aminobenzoates:

- 10 Ethyl PABA;

Ethyl Dihydroxypropyl PABA;

Ethylhexyl Dimethyl PABA (ESCALOL 507 from ISP);

Salicylic derivatives:

- 15 Homosalate particularly sold under the name "Eusolex HMS" by Rona/EM Industries;

Ethylhexyl Salicylate particularly sold under the name "NEO HELIOPAN OS" by SYMRISE;

Dipropyleneglycol Salicylate particularly sold under the name "DIPSAL" by SCHER;

- 20 TEA Salicylate sold under the name "NEO HELIOPAN TS" by SYMRISE;

Cinnamates

Ethylhexyl Methoxycinnamate particularly sold under the trade name "PARSOL MCX" by DSM Nutritional Products, Inc.;

Isopropyl Methoxy cinnamate;

- 25 Isoamyl Methoxy cinnamate particularly sold under the trade name "NEO HELIOPAN E 1000" by SYMRISE;

Diisopropyl Methylcinnamate;

Cinnoxate;

Glyceryl Ethylhexanoate Dimethoxycinnamate;

β,β' -diphenylacrylate derivatives:

Etocrylene, particularly sold under the trade name "UVINUL N35" by BASF;

Benzylidene camphor derivatives:

5 3-Benzylidene camphor manufactured under the name "MEXORYL SD" by CHIMEX;

Methylbenzylidene camphor sold under the name "EUSOLEX 6300" by MERCK;

Polyacrylamidomethyl Benzylidene Camphor manufactured under the name "MEXORYL SW" by CHIMEX;

Triazine derivatives:

10 Ethylhexyl triazone particularly sold under the trade name "UVINUL T150" by BASF;

Diethylhexyl Butamido Triazone particularly sold under the trade name "UVASORB HEB" by SIGMA 3V;

2,4,6-tris(dineopentyl 4'-amino benzalmalonate)-s-triazine;

15 2,4,6-tris(diisobutyl 4'-amino benzalmalonate)-s- triazine;

2,4-bis(dineopentyl 4'-amino benzalmalonate)-6-(n-butyl 4'-aminobenzoate)-s-triazine;

2,4-bis(n-butyl 4'-amino benzoate)-6-(aminopropyltrisiloxane)-s-triazine;

20 the symmetrical triazine filters described in the patent US 6,225,467, the application WO 2004/085412 (see compounds 6 and 9) or the document "Symmetrical Triazine Derivatives" IP.COM Journal, IP.COM INC WEST HENRIETTA, NY, US (September 20, 2004) particularly 2,4,6-tris-(biphenyl)-1,3,5-triazine (particularly 2,4,6-tris(biphenyl-4-yl-1,3,5-triazine) and 2,4,6-tris(terphenyl)-1,3,5-triazine, the latter two filters being described in the BEIERSDORF applications WO 06/035000, WO 06/034982, WO 25 06/034991, WO 06/035007, WO 2006/034992, WO 2006/034985).

Imidazoline derivatives:

Ethylhexyl Dimethoxybenzylidene Dioxoimidazoline Propionate,

Benzalmalonate derivatives:

30 Polyorganosiloxanes with a benzalmalonate function such as Polysilicone-15 particularly sold under the trade name "PARSOL SLX" by DSM Nutritional Products, Inc.;

Di-neopentyl 4'-methoxybenzalmalonate;

Within the scope of the invention, and according to one particular embodiment, the following lipophilic UV-B filters are used in the composition according to the invention:

Ethylhexylsalicylate;

5 Octocrylene;

Ethylhexyl triazone.

IV/ Hydrophilic UV-B screening agents

The following p-aminobenzoic acid (PABA) derivatives:

10 PABA,

Glyceryl PABA and

PEG-25 PABA particularly sold under the trade name "UVINUL P25" by BASF.

Phenylbenzimidazole Sulfonic Acid particularly sold under the trade name "EUSOLEX 232" by MERCK,

15 ferulic acid,

salicylic acid,

DEA methoxycinnamate,

Benzylidene Camphor Sulfonic Acid manufactured under the name "MEXORYL[®] SL" by CHIMEX,

20 Camphor Benzalkonium Methosulfate manufactured under the name "MEXORYL[®] SO" by CHIMEX,

According to a preferred embodiment, the preferred hydrophilic UVB screening agent is Phenylbenzimidazole Sulfonic Acid.

25 V/ Combined lipophilic UVA and UVB screening agents

Benzophenone derivatives

Benzophenone-1 particularly sold under the trade name "UVINUL 400" by BASF;

Benzophenone-2 particularly sold under the trade name "UVINUL D50" by BASF;

Benzophenone-3 or Oxybenzone particularly sold under the trade name "UVINUL M40" by BASF;

Benzophenone-6 particularly sold under the trade name "Helisorb 11" by Norquay;

5 Benzophenone-8 particularly sold under the trade name "Spectra-Sorb UV-24" by American Cyanamid;

Benzophenone-10;

Benzophenone-11;

Benzophenone-12;

10 **Phenyl benzotriazole derivatives:**

Drometrizole Trisiloxane particularly sold under the name "Silatrizole" by RHODIA CHIMIE or manufactured under the name "Meroxyl XL" by CHIMEX;

15 Methylene bis-Benzotriazolyl Tetramethylbutylphenol, sold in solid form particularly under the trade name "MIXXIM BB/100" by FAIRMOUNT CHEMICAL or in micronized form in aqueous dispersion particularly under the trade name "TINOSORB M" by CIBA SPECIALTY CHEMICALS.

Benzoxazole derivatives:

20 2,4-bis-[5-1(dimethylpropyl)benzoxazol-2-yl-(4-phenyl)-imino]-6-(2-ethylhexyl)-imino-1,3,5-triazine particularly sold under the name Uvasorb K2A by Sigma 3V.

The preferential lipophilic organic UVA and UVB filters are selected from:

Drometrizole Trisiloxane;

Methylene bis-Benzotriazolyl Tetramethylbutylphenol;

25 Bis-Ethylhexyloxyphenol Methoxyphenyl Triazine.

VI/ Combined hydrophilic UVA and UVB screening agents

Benzophenone derivatives comprising at least one sulfonic radical such as

30 Benzophenone-4 particularly sold under the trade name "UVINUL MS 40" by BASF,

Benzophenone-5 and

Benzophenone-9. The composition according to the invention may also comprise mineral filters which are pigments. The pigments may be coated or uncoated.

The coated pigments are pigments which have undergone one or a plurality of chemical, electronic, mechanochemical and/or mechanical surface treatments with compounds as described for example in *Cosmetics & Toiletries*, February 1990, Vol. 105, p. 53-64, such as amino acids, beeswax, fatty acids, fatty alcohols, anionic surfactants, lecithins, sodium, potassium, zinc, iron or aluminum salts of fatty acids, metal (titanium or aluminum) alkoxides, polyethylene, silicones, proteins (collagen, elastin), alkanolamines, silicon oxides, metal oxides or sodium hexametaphosphate.

According to the prior art, the silicones are organosilicate polymers or oligomers with a linear or cyclic, branched or cross-linked structure, with a variable molecular weight, obtained by polymerization and/or polycondensation of suitably functionalized silanes, and essentially consisting of a repetition of primary structural units wherein the silicon atoms are interconnected by oxygen atoms (siloxane bond), optionally substituted hydrocarbon radicals being directly bound via a carbon atom on said silicon atoms.

The term "silicones" also covers the silanes required for the preparation thereof, particularly, alkyl silanes.

The silicones used for coating pigments suitable for the present invention are preferably selected from the group containing alkyl silanes, polydialkylsiloxanes, and polyalkylhydrogen siloxanes. More preferentially, the silicones are selected from the group containing octyl trimethyl silane, polydimethylsiloxanes and polymethylhydrogen siloxanes.

Obviously, prior to the treatment thereof with silicone, the metal oxide pigments may have been treated with other surface agents, particularly cerium oxide, alumina, silica, aluminum compounds, silicon compounds, or mixtures thereof.

The coated pigments are, for example, titanium oxides coated with:

- silica such as the product "SUNVEIL" from IKEDA and the product "Eusolex T-AVO" from MERCK

- silica and iron oxide such as the product "SUNVEIL F" from IKEDA,

- silica and alumina such as the products "MICROTITANIUM DIOXIDE MT 500 SA" and "MICROTITANIUM DIOXIDE MT 100 SA" from TAYCA, "TIOVEIL" from TIOXIDE, and "Mirasun TiW 60" from Rhodia,

- alumina such as the products "TIPAQUE TTO-55 (B)" and "TIPAQUE TTO-55 (A)" from ISHIHARA, and "UVT 14/4" from KEMIRA,

- alumina and aluminum stearate such as the product "MICROTITANIUM DIOXIDE MT 100 TV, MT 100 TX, MT 100 Z, MT-01" from TAYCA, the products "Solaveil CT-10 W", "Solaveil CT 100" and "Solaveil CT 200" from UNIQEMA,

- silica, alumina and alginic acid such as the product "MT-100 AQ" from TAYCA,

- alumina and aluminum laurate such as the product "MICROTITANIUM DIOXIDE MT 100 S" from TAYCA,

- iron oxide and iron stearate such as the product "MICROTITANIUM DIOXIDE MT 100 F" from TAYCA,

- zinc oxide and zinc stearate such as the product "BR351" from TAYCA,

- silica and alumina and treated with a silicone such as the products "MICROTITANIUM DIOXIDE MT 600 SAS", "MICROTITANIUM DIOXIDE MT 500 SAS" or "MICROTITANIUM DIOXIDE MT 100 SAS" from TAYCA,

- silica, alumina, aluminum stearate and treated with a silicone such as the product "STT-30-DS" from TITAN KOGYO,

- silica and treated with a silicone such as the product "UV-TITAN X 195" from KEMIRA, or the product SMT-100 WRS from TAYCA.- alumina and treated with a silicone such as the products "TIPAQUE TTO-55 (S)" from ISHIHARA, or "UV TITAN M 262" from KEMIRA,

triethanolamine such as the product "STT-65-S" from TITAN KOGYO,

- stearic acid such as the product "TIPAQUE TTO-55 (C)" from ISHIHARA,

- sodium hexametaphosphate such as the product "MICROTITANIUM DIOXIDE MT 150 W" from TAYCA.

Further titanium oxide pigments treated with a silicone are for example TiO_2 treated with octyl trimethyl silane such as that sold under the trade name "T 805" by DEGUSSA SILICES, TiO_2 treated with a polydimethylsiloxane such as that sold under the trade name "70250 Cardre UF TiO_2SiI_3 " by CARDRE, anatase/rutile TiO_2 treated with a polydimethylhydrogen siloxane such as that sold under the trade name "MICROTITANIUM DIOXYDE USP GRADE HYDROPHOBIC" by COLOR TECHNIQUES.

The uncoated titanium oxide pigments are for example sold by TAYCA under the trade names "MICROTITANIUM DIOXIDE MT 500 B" or "MICROTITANIUM DIOXIDE

MT600 B", by DEGUSSA under the name "P 25", by WACKHER under the name "Oxyde de titane transparent PW", by MIYOSHI KASEI under the name "UFTR", by TOMEN under the name "ITS" and by TIOXIDE under the name "TIOVEIL AQ".

The uncoated zinc oxide pigments are for example

- 5
- those marketed under the name "Z-cote" by Sunsmart;
 - those marketed under the name "Nanox" by Elementis;
 - those marketed under the name "Nanogard WCD 2025" by Nanophase Technologies;

The coated zinc oxide pigments are for example

- 10
- those marketed under the name "Z-COTE HP1" by SUNSMART (ZnO coated with dimethicone);
 - those marketed under the name "CS-5 zinc oxide" by Toshiba (ZnO coated with polymethylhydrogen siloxane);
 - those marketed under the name "Nanogard Zinc Oxide FN" by Nanophase Technologies (in 40% dispersion in Finsolv TN, C12-C15 alcohol benzoate);
- 15
- those marketed under the name "DAITOPERSION ZN-30" and "DAITOPERSION Zn-50" by Daito (dispersions in cyclopolydimethylsiloxane/oxyethylenated polydimethylsiloxane, containing 30% or 50% zinc oxides coated with silica and polymethylhydrogen siloxane);
- 20
- those marketed under the name "NFD Ultrafine ZnO" by Daikin (ZnO coated perfluoroalkyl phosphate and perfluoroalkylethyl-based copolymer in dispersion in cyclopentasiloxane);
 - those marketed under the name "SPD-Z1" by Shin-Etsu (ZnO coated with silicone-grafted acrylic polymer, dispersed in cyclodimethylsiloxane);
- 25
- those marketed under the name "Escalol Z100" by ISP (ZnO treated with alumina and dispersed in the ethylhexyl methoxycinnamate / PVP-hexadecene copolymer / methicone mixture);
 - those marketed under the name "Fuji ZnO-SMS-10" by Fuji Pigment (ZnO coated with silica and polymethylsilsesquioxane);
- 30
- those marketed under the name "Nanox Gel TN" by Elementis (ZnO in 55% dispersion in C₁₂-C₁₅ alcohol benzoate with hydroxystearic acid polycondensate).

The uncoated cerium oxide pigments are sold for example under the name "COLLOIDAL CERIUM OXIDE" by RHONE POULENC.

The uncoated iron oxide pigments are for example sold by ARNAUD under the names "NANOGARD WCD 2002 (FE 45B)", "NANOGARD IRON FE 45 BL AQ",
5 "NANOGARD FE 45R AQ", "NANOGARD WCD 2006 (FE 45R)", or by MITSUBISHI under the name "TY-220".

The coated iron oxide pigments are for example sold by ARNAUD under the names "NANOGARD WCD 2008 (FE 45B FN)", "NANOGARD WCD 2009 (FE 45B
10 556)", "NANOGARD FE 45 BL 345", "NANOGARD FE 45 BL", or by BASF under the name "TRANSPARENT IRON OXIDE".

It is also possible to cite metal oxide mixtures, particularly of titanium dioxide and cerium dioxide, including the mixture of equal weights of titanium dioxide and cerium dioxide coated with silica, sold by IKEDA under the name "SUNVEIL A", and the mixture
15 of titanium dioxide and zinc dioxide coated with alumina, silica and silicone such as the product "M 261" sold by KEMIRA or coated with alumina, silica and glycerin such as the product "M 211" sold by KEMIRA.

The pigments may be introduced into the compositions according to the invention as is or in pigment paste form, i.e. in a mixture with a dispersion agent, as described for
20 example in the document GB-A-2206339.

According to a particular embodiment, the composition does not comprise hydrophobic UV-screening agents.

According to a particular embodiment, said UV-screening agent is selected from the group consisting of sulfonic acid based hydrophilic UV-screening agents.

In a specific embodiment, the composition of the invention comprises
25 phenylbenzimidazole sulfonic acid and/or terephthalylidene dicamphor sulfonic acid.

In general the composition of the invention comprises from 3% to 40% by weight, more preferably from 5% to 30% by weight, and even more preferably from 8 to 20% by weight, relative to the total weight of the composition, of hydrophilic UV-screening agents.

30 **Active ingredient**

In one embodiment, said composition comprises one or more skin benefit active ingredients.

In one embodiment, said composition comprises one or more cooling active agents.

Cooling active agents are known by skilled persons in the art of active ingredients in the field of cosmetics. Cooling active agents typically provides a cooling effect on a keratin material and especially on skin. The cooling effect of menthol derivatives and menthoxypropanediol derivatives are all well known by their neuro-sensory mechanism. In one embodiment, one or more cooling active agents are selected from the group consisting of substituted cyclohexanols and their esters, carboxamides, menthone ketals, menthoxypropanediols, and mixtures thereof.

In one embodiment, one or more cooling active agents are selected from the group consisting of menthol and menthol derivatives (for example L-menthol, D-menthol, racemic menthol, isomenthol, neoisomenthol, neomenthol), menthyl lactate, menthyl glycolate, menthyl pyrrolidone carboxylic acid, menthyl methyl ether, menthoxypropanediol, menthone glycerine acetal (9-methyl-6-(1-methylethyl)-1,4-dioxaspiro(4,5)decane-2-methanol), N-ethyl-3-p-menthane carboxamide (WS-3), 2-isopropyl-N,2,3-trimethyl butanamide (WS-23), N-ethoxycarbonylmethyl-3-p-menthane carboxamide (WS-5), monomenthyl glutarate, monomenthyl succinate, 2-hydroxymethyl-3,5,5-trimethylcyclohexanol, isopulegol, and mixtures thereof. Preferred cooling active agents include menthol, isopulegol, menthyl lactate, menthoxypropanediol and menthylpyrrolidone carboxylic acid as well as mixtures of these substances, in particular mixtures of menthol and menthyl lactate; menthol, menthol glycolate and menthyl lactate; menthol and menthoxypropanediol or menthol and isopulegol.

In one embodiment the active agent is selected from the group consisting of pentylene glycol, 4-t-butylcyclohexanol, EDTA and salts thereof, such as for example sodium EDTA, or any mixture thereof.

In one embodiment, the amount of active ingredient(s) ranges from 0.0001 to 10%, preferably from 0.001 to 10%, and more preferably from 0.01 to 5% by weight relative to the total weight of the composition.

For example, the amount of active ingredient(s) is from 0.1 to 1% by weight relative to the total weight of the composition.

The amount of aqueous phase may range, for example, from 0.1% to 99.9% by weight, preferably from 0.5% to 99% by weight relative to the total weight of the composition.

According to an embodiment, the amount of water in the compositions according to the invention ranges from 20% to 90% by weight, preferably from 30% to 80% by weight, more preferably from 40% to 75% by weight, relative to the total weight of the composition.

Preferably, the compositions of the invention comprise more than 50% by weight of water relative to the total weight of the composition.

The cosmetic composition of the present invention may further comprise at least one additive. A person skilled in the art can adjust the type and amount of additives present in the compositions according to the invention by means of routine operations, so that the desired cosmetic properties and stability properties for these compositions are not affected by the additives. Said additive may be chosen from thickeners, colorants and preservatives, and so on.

The compositions according to the present invention may also comprise conventional cosmetic additives soluble in the aqueous phase of the composition of the invention chosen in particular organic solvents, ionic or nonionic thickeners, softeners, humectants, additional opacifiers, stabilizers, emollients, silicones, antifoams, fragrances, preserving agents, anionic, cationic, nonionic, zwitterionic or amphoteric surfactants, active agents, fillers, polymers, propellants, acidifying or basifying agents or any other ingredient commonly used in the cosmetic and/or dermatological field.

In one embodiment, the aqueous phase may also contain additives such as water-soluble active ingredients, preservatives, salts, gelling agents, fillers, water-soluble or water-dispersible polymers, water-soluble dyes, and any mixture thereof.

The preservatives may be chosen from propyl p-hydroxybenzoate (propyl paraben), methyl p-hydroxybenzoate (methyl paraben), butyl p-hydroxybenzoate (butyl paraben) and phenoxyethanol.

Preferred compositions of the invention are compositions comprising:

- (i) one or more alkylpolysaccharides with an alkyl having from 12 to 22 carbon atoms;
- (ii) one or more alcohols with a carbon chain having from 12 to 22 carbon atoms;
- (iii) at least one monoester with a melting point of less than or equal to 30°C; and
- (iv) at least one hydrophilic UV filter.

The invention relates in a preferred embodiment to a composition, in particular a cosmetic or dermatological composition, with a liquid crystal phase, comprising:

(i) from 0.1 to 20%, preferably from 1 to 10%, and more preferably from 3 to 9% of one or more alkylpolysaccharides with an alkyl having from 12 to 22 carbon atoms;

(ii) from 0.1 to 50%, preferably from 1 to 30%, and for example from 5 to 20%, of one or more alcohols with a carbon chain having from 12 to 22 carbon atoms ;

(iii) from 0.1 to 20%, preferably from 1 to 10%, and more preferably from 2 to 8% of at least one monoester with a melting point of less than or equal to 30°C; and

(iv) from 3% to 40% by weight, more preferably from 5% to 30% by weight, and even more preferably from 8 to 20% at least one hydrophilic UV filter,

wherein said percentages are expressed by weight relative to the total weight of the composition.

The invention relates in a preferred embodiment to a composition, in particular a cosmetic or dermatological composition, with a liquid crystal phase, comprising:

(i) from 0.1 to 20%, preferably from 1 to 10%, and more preferably from 3 to 9% of one or more alkylpolysaccharides with an alkyl having from 14 to 18 carbon atoms;

(ii) from 0.1 to 50%, preferably from 1 to 30%, and for example from 5 to 20%, of one or more alcohols with a carbon chain having from 14 to 18 carbon atoms ;

(iii) from 0.1 to 20%, preferably from 1 to 10%, and more preferably from 2 to 8% of at least one monoester of C₄ -C₁₀ aliphatic acids and of C₁₆ -C₁₈ aliphatic alcohols with a melting point of less than or equal to 30°C; and

(iv) from 3% to 40% by weight, more preferably from 5% to 30% by weight, and even more preferably from 8 to 20% at least one hydrophilic UV filter,

wherein said percentages are expressed by weight relative to the total weight of the composition.

The invention relates in a preferred embodiment to a composition, in particular a cosmetic or dermatological composition, with a liquid crystal phase, comprising:

(i) from 0.1 to 20%, preferably from 1 to 10%, and more preferably from 3 to 9% of a mixture of myristyl glucoside and cetearyl glucoside;

(ii) from 0.1 to 50%, preferably from 1 to 30%, and for example from 5 to 20%, of a mixture of myristyl alcohol, cetyl alcohol, and stearyl alcohol;

(iii) from 0.1 to 20%, preferably from 1 to 10%, and more preferably from 2 to 8% of at least one stearyl heptanoate/octanoate mixture with a melting point of less than or equal to 30°C; and

(iv) from 3% to 40% by weight, more preferably from 5% to 30% by weight, and even more preferably from 8 to 20% at least one hydrophilic UV filter,

wherein said percentages are expressed by weight relative to the total weight of the composition.

The present invention relates to a composition, in particular a cosmetic or dermatological composition, in the form of an emulsion, preferably an oil-in-water emulsion.

In one embodiment, the composition of the invention is an oil-in-water liquid crystal emulsion. The present invention relates more particularly to a composition in the form of an oil-in-water emulsion formed by oily globules provided with a lamellar liquid crystal coating and dispersed in an aqueous phase.

The present invention relates more particularly to an oil-in-water liquid crystal emulsion having oily globules comprising one or more alkylpolysaccharides, one or more alcohols having a 12-22 carbon chain, one or more active ingredients, especially one or more cooling active agents, and a at least one ester with a melting point of less than or equal to 30°C, encapsulated in a lamellar liquid crystal coating and dispersed in an aqueous phase, preferably an aqueous continuous phase.

In the context of the present invention, the term "lamellar liquid crystal phase" means a stack of swollen lipid bilayers.

Lamellar liquid crystal phases are for example liposomes, niosomes or oleosomes.

The invention also relates to a process for preparing a composition as defined in the present invention.

In one embodiment, said process comprises:

- preparing a first liquid phase comprising water;
- preparing a second liquid phase comprising one or more alkylpolysaccharides, one or more alkyl-alcohols, at least one monoester, at least one hydrophilic UV filters, and optionally one or more cooling active ingredients;
- preparing an emulsion by mixing the first and the second phases;
- cooling down the emulsion;

Preferably, said process comprising after cooling down the emulsion a step of forming multilayer lamella vesicles, for example by crystallizing the emulsion.

In one embodiment, for its preparation said first phase is mixed and heated.

In one embodiment, for its preparation said second phase is mixed and heated
5 until all solids raw materials are melted.

The invention also relates to a cosmetic article comprising at least one composition as defined in the present invention.

The invention also relates to a cosmetic process for caring and/or making up a
10 keratin material, comprising the application, to the surface of said keratin material, of at least one composition as defined in the present invention, wherein said keratin material is preferably skin, in particular face.

The invention also relates to a cosmetic process for providing a cooling effect on a keratin material, comprising the application, to the surface of said keratin material, of at
15 least one composition as defined in the present invention, wherein said keratin material is preferably skin, in particular face.

The invention also relates to a cosmetic process for instant and long lasting cooling effect on a keratin material, comprising the application, to the surface of said keratin material, of at least one composition as defined in the present invention, wherein
20 said keratin material is preferably skin, in particular face.

The composition according to the invention may be applied by any means enabling a uniform distribution, in particular using a finger, or a cotton ball, a rod, a brush, gauze, a spatula, or by spraying, and can be removed by rinsing with water or using a gentle detergent.

25 The composition of the invention may be implemented so as to improve the general state of the epidermis, in particular the skin.

The composition of the present invention is stable over time.

“Stable over time” is understood to mean compositions of the present invention which, after storage at all temperatures between 4° C and 45° C for 2 months, do not
30 exhibit any macroscopic change in colour, smell or viscosity, any variation in pH or any variation in microscopic appearance.

The composition of the present invention can be used for a cosmetic process, such as a cosmetic process or method, for making up/caring for the keratin materials,
35 such as the skin, in particular the face and the lips, by being applied to the skin, especially the face.

The present invention also relates to a use of the composition according to the present invention, for making up/caring for the skin, especially for the face. The examples that follow are aimed at illustrating the compositions and processes according to this invention, but are not in any way a limitation of the scope of the invention.

EXAMPLES

Example 1

Preparation of Invention

Compositions of the invention are prepared as follows:

- 5 ✓ Prepare the Phase A:

By mixing water, water soluble preservative, and EDTA) and then heat up to 80DC while mixing

- ✓ Prepare the Phase B:

- 10 Add RMs in to Phase B (alkylpoysaccharides, alkyl-alcohols, monoester, Hydrophilic UV filters, and cooling actives) heat up to 80DC while mixing until all Solid RMs totally melting and uniformly.

- ✓ Transfer phase B to phase A slowly with homogenization by using turbine for over 5 mins

- 15 ✓ Cooling down the yellowish O/W emulsion with the speed on 500rpm (keep cooling to 50DC by using the ice-water bath) by stirring with homogenizer until the liquid changed to paste

- ✓ Finally remove the ice-water bath, let the paste to be recrystallized slowly with homogenizer (300 rpm) very slowly to RT until the multilayer lamella vesicles (MLVs) sufficiently forming by microscope confirmation.

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Compositions of the invention

Table 1

Cosmetic type	INCI US	Trade Name	Composition A	Composition B	Composition C
ACTIVE COMPOUND	MENTHOL	L-menthol	0.2	0.2	0.2
ACTIVE COMPOUND	DISODIUM EDTA	DISSOLVINE NA-2	0.1	0.1	0.1
ACTIVE COMPOUND	MENTHOXYPROPANEDIOL	COOLACT 10	0.1	0.1	0.1
FATTY COMPOUND	MYRISTYL ALCOHOL	NACOL 14-98	6	7	7
FATTY COMPOUND	STEARYL HEPTANOATE (and) STEARYL CAPRYLATE	DUB SOLIDE	5	5	5
FATTY COMPOUND	CETYL ALCOHOL	NACOL 16-98	3	2	2
FATTY COMPOUND	DICAPRYLYL CARBONATE	CETIOL CC			5
PRESERVATIVE	PHENOXYETHANOL	SEPICIDE LD	0.6	0.6	0.6
SUN FILTER	ETHYLHEXYL METHOXYCINNAMATE	UVINUL MC 80	5	5	
SUN FILTER	BUTYL METHOXYDIBENZOYLMET HANE	PARSOL 1789			3
SUN FILTER	OCTOCRYLENE	EUSOLEX OCR			3.3
SUN FILTER	HOMOSALATE	HOMOSALATE			7
SUN FILTER	DROMETRIZOLE TRISILOXANE	SILATRIZOLE	2	2	
SUN FILTER	BIS-ETHYLHEXYLOXYPHENOL METHOXYPHENYL TRIAZINE	TINOSORB S			2
SUN FILTER	DIETHYLAMINO HYDROXYBENZOYL HEXYL BENZOATE	UVINUL A PLUS GRANULAR	3	3	
SURFACTANT	CETEARYL ALCOHOL (and) CETEARYL GLUCOSIDE	Montanov 68		2	
SURFACTANT	MYRISTYL ALCOHOL (and) MYRISTYL GLUCOSIDE	Montanov 14	6	4	6
SOLVENT	WATER		69	69	58.7

5 The cooling efficacy or cooling effect of this composition has been evaluated on five volunteer's arm and on reconstructed skins using thermometer sold by the company Fisher under the name IKA@RET (Fisher Thermo Infrared/Type K Thermometer, IKA@RET Control/t). It has been demonstrated that the composition of the invention showed a good instant cooling efficacy and long lasting cooling efficacy at room

temperature. The best performance in term of instant cooling efficacy and long lasting cooling efficacy at room temperature is for composition B.

CLAIMS

1.- A composition, in particular a cosmetic or dermatological composition, with a liquid crystal phase, comprising:

- 5 (i) one or more alkylpolysaccharides;
(ii) one or more alcohols with a carbon chain having from 12 to 22 carbon atoms;
(iii) at least one ester with a melting point of less than or equal to 30°C; and
(iv) at least one hydrophilic UV filter.

10 2.- The composition according to claim 1, wherein said alkylpolysaccharides are selected from the group consisting of alkylpolysaccharides with an alkyl having from 12 to 22 carbon atoms.

15 3.- The composition according to claim 1 or 2, wherein said alkylpolysaccharides are selected from the group consisting of alkylpolysaccharides with an alkyl having from 14 to 18 carbon atoms.

4.- The composition according to any one of claims 1 to 3, wherein said alcohol has has a carbon chain having from 14 to 18 carbon atoms.

20 5.- The composition according to any one of claims 1 to 4, wherein said ester with a melting point of less than or equal to 30°C is selected from the group consisting of monoesters of C₄-C₁₀ aliphatic acids and of C₁₆-C₁₈ aliphatic alcohols, and any mixtures thereof.

25 6.- The composition according to any one of claims 1 to 5, wherein said composition comprises one or more UV filters other than said at least one hydrophilic UV filter.

30 7.- The composition according to any one of claims 1 to 6, wherein said composition comprises one or more skin benefit active ingredients.

8.- The composition according to any one of claims 1 to 7, wherein said composition comprises one or more cooling active agents.

35 9.- The composition according to any one of claims 1 to 8, wherein said composition comprises:

(i) one or more alkylpolysaccharides with an alkyl having from 12 to 22 carbon atoms;

(ii) one or more alcohols with a carbon chain having from 12 to 22 carbon atoms;

(iii) at least one monoester with a melting point of less than or equal to 30°C; and

5 (iv) at least one hydrophilic UV filter.

10.- The composition according to any one of claims 1 to 9, wherein said composition is an oil-in-water liquid crystal emulsion.

10 11.- The composition according to any one of claims 1 to 11, wherein said composition is a controlled release composition.

12.- A cosmetic article comprising at least one composition according to any one of claims 1 to 11.

15

13.- A cosmetic process for caring and/or making up a keratin material, comprising the application, to the surface of said keratin material, of at least one composition according to any one of claims 1 to 11, wherein said keratin material is preferably skin, in particular face.

20

14.- A cosmetic process for providing a cooling effect on a keratin material, comprising the application, to the surface of said keratin material, of at least one composition according to any one of claims 1 to 11, wherein said keratin material is preferably skin, in particular face.

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15.- A cosmetic process for instant and long lasting cooling effect on a keratin material, comprising the application, to the surface of said keratin material, of at least one composition according to any one of claims 1 to 11, wherein said keratin material is preferably skin, in particular face.

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INTERNATIONAL SEARCH REPORT

International application No.

PCT/CN2016/105172

A. CLASSIFICATION OF SUBJECT MATTER

A61K 8/60(2006.01)i; A61K 8/37(2006.01)i; A61K 8/34(2006.01)i; A61Q 19/00(2006.01)i

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

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

A61K; A61P, A61Q

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

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

CPRSABS;CNABS;WOTXT;DWPI;SIPOABS; CNKI;DUXIU:liquid,crystal+,+glycoside?,+saccharide?,alcohol?,uv,filter, stearyl, heptanoate,octanoate,crodamol,dub solide

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	CN 105168060 A (GUANGZHOU HUANYA COSMETICS TECHNOLOGY CO LTD) 23 December 2015 (2015-12-23) description, page 2, paragraphs [0009]-[0015], page 4, paragraphs [0029], [0031]-[0033]	1-15
Y	US 2007065392 A1 (OREAL) 22 March 2007 (2007-03-22) abstract, description, page 8, paragraphs [0130]-[0131], [0143], page 11, paragraph [0183], example 4	1-15
Y	WO 2015021625 A1 (OREAL) 19 February 2015 (2015-02-19) claims 1, 15, description, page 1, lines 13-14, page 11, lines 3-5	1-15

☐ Further documents are listed in the continuation of Box C.☒ See patent family annex.

* Special categories of cited documents:

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

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

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

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

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

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

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

“&” document member of the same patent family

Date of the actual completion of the international search

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Name and mailing address of the ISA/CN

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INTERNATIONAL SEARCH REPORT
Information on patent family members

International application No.

PCT/CN2016/105172

Patent document cited in search report			Publication date (day/month/year)	Patent family member(s)			Publication date (day/month/year)
CN	105168060	A	23 December 2015	None			
US	2007065392	A1	22 March 2007	EP	1743619	A3	30 June 2010
				EP	1743619	A2	17 January 2007
				JP	2007023032	A	01 February 2007
				FR	2888493	A1	19 January 2007
WO	2015021625	A1	19 February 2015	CN	105451711	A	30 March 2016