

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property
Organization

International Bureau

(43) International Publication Date
18 June 2020 (18.06.2020)



(10) International Publication Number
WO 2020/122088 A1

(51) International Patent Classification:

A61K 8/36 (2006.01) *A61Q 17/04* (2006.01)
A61K 8/37 (2006.01) *A61Q 19/02* (2006.01)
A61K 8/44 (2006.01)

Published:

— with international search report (Art. 21(3))

(21) International Application Number:

PCT/JP2019/048367

(22) International Filing Date:

04 December 2019 (04.12.2019)

(25) Filing Language:

English

(26) Publication Language:

English

(30) Priority Data:

2018-231470 11 December 2018 (11.12.2018) JP

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(81) Designated States (unless otherwise indicated, for every
kind of national protection available): AE, AG, AL, AM,
AO, AT, AU, AZ, BA, BB, BG, BH, BN, BR, BW, BY, BZ,
CA, CH, CL, CN, CO, CR, CU, CZ, DE, DJ, DK, DM, DO,
DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT, HN,
HR, HU, ID, IL, IN, IR, IS, JO, KE, KG, KH, KN, KP, KR,
KW, KZ, LA, LC, LK, LR, LS, LU, LY, MA, MD, ME, MG,
MK, MN, MW, MX, MY, MZ, NA, NG, NI, NO, NZ, OM,
PA, PE, PG, PH, PL, PT, QA, RO, RS, RU, RW, SA, SC,
SD, SE, SG, SK, SL, SM, ST, SV, SY, TH, TJ, TM, TN, TR,
TT, TZ, UA, UG, US, UZ, VC, VN, ZA, ZM, ZW.

(84) Designated States (unless otherwise indicated, for every
kind of regional protection available): ARIPO (BW, GH,
GM, KE, LR, LS, MW, MZ, NA, RW, SD, SL, ST, SZ, TZ,
UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, RU, TJ,
TM), European (AL, AT, BE, BG, CH, CY, CZ, DE, DK,
EE, ES, FI, FR, GB, GR, HR, HU, IE, IS, IT, LT, LU, LV,
MC, MK, MT, NL, NO, PL, PT, RO, RS, SE, SI, SK, SM,
TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW,
KM, ML, MR, NE, SN, TD, TG).

(54) Title: COMPOSITION WITH LESS ODOR

(57) Abstract: The present invention relates to a composition comprising: (a) at least one cinnamic acid derivative with a specific chemical structure; (b) at least one oil to which the (a) cinnamic acid derivative is soluble; and (c) water. The present invention can provide a composition with a less or reduced amount of odor material, such as p-vinylguaicol, even if the composition includes a cinnamic acid derivative, such as ferulic acid, and water.

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DESCRIPTION

COMPOSITION WITH LESS ODOR

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TECHNICAL FIELD

The present invention relates to a composition, in particular a cosmetic composition, in which the odor of the composition can be prevented or reduced.

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BACKGROUND ART

Cinnamic acid and derivatives thereof, such as ferulic acid, have been known to be useful in the field of, for example, cosmetics because they can function as a UV filter and the like. However, they tend to be unstable under some conditions. For example, ferulic acid is soluble in water under alkaline conditions, but the aqueous solution of ferulic acid may rapidly discolor.

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USP 6632444 discloses stabilizing ferulic acid by non-volatile polyol such as propylene glycol in water with a pH of from about 3 to about 5 under specific conditions. The aqueous compositions, which include ferulic acid and non-volatile polyol under specific conditions and have a pH of from about 3 to about 5, disclosed in USP 6632444 are explained to not rapidly discolor.

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DISCLOSURE OF INVENTION

It has been found that when a cinnamic acid derivative, such as ferulic acid, contacts water, it produces odor material such as p-vinylguaiacol.

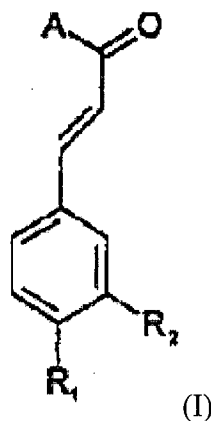
30

Thus, an objective of the present invention is to provide a composition with a lower or reduced amount of odor material, such as p-vinylguaiacol, even if the composition includes a cinnamic acid derivative, such as ferulic acid, and water.

The above objective can be achieved by a composition comprising:

35

- (a) at least one cinnamic acid derivative represented by the following chemical formula (I)



wherein

A is chosen from

an OR₃ group wherein R₃ is chosen from a hydrogen atom, a phytyl group, a

benzyl group, a linear or branched C₁-C₁₈ alkyl group, a C₃-C₈ cycloalkyl group, a C₃-C₈ cycloalkyl-C₁-C₅ alkyl group, an alkali metal ion, an alkaline earth metal ion and an ammonium ion,

and

5 an NHR₄ group wherein R₄ is chosen from a hydrogen atom, a phytyl group, a benzyl group, and a linear or branched C₁-C₁₈ alkyl group, a C₃-C₈ cycloalkyl group, a C₃-C₈ cycloalkyl-C₁-C₅ alkyl group,

10 R₁ is chosen from a hydrogen atom, a hydroxyl group, a C₁-C₆ alkoxy group, a linear or branched C₁-C₁₈ alkyl group, a C₃-C₈ cycloalkyl group, a C₃-C₈ cycloalkyl-C₁-C₅ alkyl group, and

R₂ is chosen from a hydrogen atom, a hydroxyl group, and a C₁-C₆ alkoxy group;

(b) at least one oil to which the (a) cinnamic acid derivative is soluble; and

(c) water.

15 The (a) cinnamic acid derivative may be ferulic acid.

The amount of the (a) cinnamic acid derivative(s) in the composition according to the present invention may be from 0.001% to 20% by weight, preferably from 0.01% to 10% by weight, and more preferably from 0.1% to 1% by weight, relative to the total weight of the composition.

20

The solubility of the (a) cinnamic acid derivative to the (b) oil may be from 0.5% to 25%, preferably from 0.7% to 20%, and more preferably from 0.9% to 15%.

25 The (b) oil may be selected from polar oils.

The (b) oil may have a logP value of from 1.0 to 7.0, preferably from 1.5 to 6.5, and more preferably from 2.0 to 6.0.

30 The (b) oil may have at least two moieties selected from the group consisting of an amide bond, an ester bond, and mixtures thereof.

The (b) oil may be selected from the group consisting of isopropyl lauroyl sarcosinate, bis-ethoxydiglycol cyclohexane 1,4-dicarboxylate and mixtures thereof.

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The amount of the (b) oil(s) in the composition according to the present invention may be from 0.01% to 30% by weight, preferably from 0.1% to 25% by weight, and more preferably from 1% to 20% by weight, relative to the total weight of the composition.

40 The amount of (c) water in the composition according to the present invention may be from 50% to 95% by weight, preferably from 60% to 90% by weight, and more preferably from 70% to 87% by weight, relative to the total weight of the composition.

The composition according to the present invention may comprise (d) at least one surfactant.

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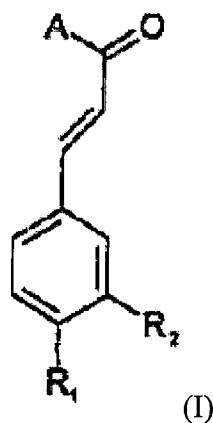
The composition according to the present invention may have a pH of less than 7.0, preferably less than 6.0, and more preferably less than 5.0.

50 The present invention also relates to a cosmetic process for a keratin substance such as skin, comprising the step of applying to the keratin substance the composition according to the

present invention.

Another aspect of the present invention is a process for preventing or reducing the production of odor material in a composition comprising:

- 5 (c) water; and
 (a) at least one cinnamic acid derivative represented by the following chemical formula (I)



wherein

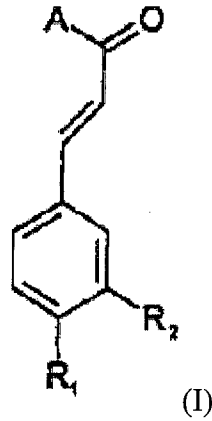
- 10 A is chosen from
 an OR₃ group wherein R₃ is chosen from a hydrogen atom, a phytyl group, a benzyl group, a linear or branched C₁-C₁₈ alkyl group, a C₃-C₈ cycloalkyl group, a C₃-C₈ cycloalkyl-C₁-C₅ alkyl group, an alkali metal ion, an alkaline earth metal ion and an ammonium ion,
 15 and
 an NHR₄ group wherein R₄ is chosen from a hydrogen atom, a phytyl group, a benzyl group, and a linear or branched C₁-C₁₈ alkyl group, a C₃-C₈ cycloalkyl group, a C₃-C₈ cycloalkyl-C₁-C₅ alkyl group,
 20 R₁ is chosen from a hydrogen atom, a hydroxyl group, a C₁-C₆ alkoxy group, a linear or branched C₁-C₁₈ alkyl group, a C₃-C₈ cycloalkyl group, a C₃-C₈ cycloalkyl-C₁-C₅ alkyl group, and
 R₂ is chosen from a hydrogen atom, a hydroxyl group, and a C₁-C₆ alkoxy group,

wherein

- 25 the process comprises the step of
 combining (b) at least one oil to which the (a) cinnamic acid derivative is soluble with the (a) cinnamic acid derivative and the (c) water in the composition.

Another aspect of the present invention is a use of (b) at least one oil in a composition comprising:

- 30 (c) water; and
 (a) at least one cinnamic acid derivative represented by the following chemical formula (I)



wherein

A is chosen from

5 an OR₃ group wherein R₃ is chosen from a hydrogen atom, a phytol group, a benzyl group, a linear or branched C₁-C₁₈ alkyl group, a C₃-C₈ cycloalkyl group, a C₃-C₈ cycloalkyl-C₁-C₅ alkyl group, an alkali metal ion, an alkaline earth metal ion and an ammonium ion,

and

10 an NHR₄ group wherein R₄ is chosen from a hydrogen atom, a phytol group, a benzyl group, and a linear or branched C₁-C₁₈ alkyl group, a C₃-C₈ cycloalkyl group, a C₃-C₈ cycloalkyl-C₁-C₅ alkyl group,

R₁ is chosen from a hydrogen atom, a hydroxyl group, a C₁-C₆ alkoxy group, a linear or branched C₁-C₁₈ alkyl group, a C₃-C₈ cycloalkyl group, a C₃-C₈ cycloalkyl-C₁-C₅ alkyl group, and

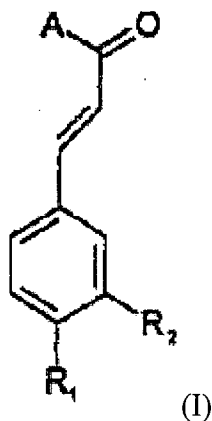
15 R₂ is chosen from a hydrogen atom, a hydroxyl group, and a C₁-C₆ alkoxy group, in order to prevent or reduce the production of odor material in the composition, characterized in that the (a) cinnamic acid derivative is soluble in the (b) oil.

BEST MODE FOR CARRYING OUT THE INVENTION

20 After diligent research, the inventors have discovered that it is possible to provide a composition with a less or reduced amount of odor material, such as p-vinylguaiacol, even if the composition includes a cinnamic acid derivative, such as ferulic acid, and water.

25 Thus, the composition according to the present invention comprises:

- (a) at least one cinnamic acid derivative represented by the following chemical formula (I)



wherein

A is chosen from

an OR₃ group wherein R₃ is chosen from a hydrogen atom, a phytyl group, a benzyl group, a linear or branched C₁-C₁₈ alkyl group, a C₃-C₈ cycloalkyl group, a C₃-C₈ cycloalkyl-C₁-C₅ alkyl group, an alkali metal ion, an alkaline earth metal ion and an ammonium ion,

and

an NHR₄ group wherein R₄ is chosen from a hydrogen atom, a phytyl group, a benzyl group, and a linear or branched C₁-C₁₈ alkyl group, a C₃-C₈ cycloalkyl group, a C₃-C₈ cycloalkyl-C₁-C₅ alkyl group,

R₁ is chosen from a hydrogen atom, a hydroxyl group, a C₁-C₆ alkoxy group, a linear or branched C₁-C₁₈ alkyl group, a C₃-C₈ cycloalkyl group, a C₃-C₈ cycloalkyl-C₁-C₅ alkyl group, and

R₂ is chosen from a hydrogen atom, a hydroxyl group, and a C₁-C₆ alkoxy group;

(b) at least one oil to which the (a) cinnamic acid derivative is soluble; and

(c) water.

According to the present invention, it is possible to provide a composition with a lower or reduced amount of odor material, such as p-vinylguaiacol, even if the composition includes a cinnamic acid derivative, such as ferulic acid, and water.

In other words, according to the present invention, it is possible to prevent or reduce the production of odor material, such as p-vinylguaiacol, in a composition even if the composition includes a cinnamic acid derivative, such as ferulic acid, and water. Thus, it is possible to prevent or reduce the odor of the composition by the present invention.

The present invention can control or suppress over time the production of odor material in a composition including a cinnamic acid derivative and water. Thus, for example, the composition according to the present invention can cause no odor, or can cause less or reduced odor for a long period of time.

The composition according to the present invention is stable such that the production of odor material, such as p-vinylguaiacol, in the composition can be prevented or reduced over time or for a long period of time. The composition according to the present invention can be stored for a long period of time, because it can cause no odor or reduced odor.

Since the odor material, such as p-vinylguaiacol, is believed to be derived from a cinnamic acid derivative, such as ferulic acid, the above stability of the composition according to the present invention means that the cinnamic acid derivative in the composition is stable such that is not consumed, for example, during storage.

Accordingly, the composition according to the present invention can provide stable cosmetic effects over time based on the cinnamic acid derivative in the composition.

Hereafter, the composition, process, use and the like according to the present invention will be described in a detailed manner.

[Composition]

The composition according to the present invention comprises (a) at least one cinnamic acid derivative with a specific chemical structure represented by the chemical formula (I) shown

below, (b) at least one oil to which the (a) cinnamic acid derivative is soluble, and (c) water.

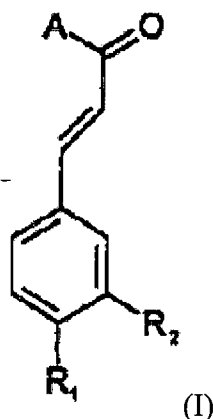
It is preferable that the composition according to the present invention is a cosmetic or dermatological composition, more preferably a cosmetic composition, and even more preferably a cosmetic care composition for a keratin substance such as skin. In particular, the composition according to the present invention can be used as a cosmetic or dermatological product for, for example, protecting the keratin substance from UV rays or whitening the keratin substance.

The (a) cinnamic acid derivative, (b) oil, and (c) water as well as the other features of the composition according to the present invention will be explained below.

(Cinnamic Acid Derivative)

The composition according to the present invention comprises (a) at least one cinnamic acid derivative with a specific chemical structure. Two or more the (a) cinnamic acid derivatives may be used in combination. Thus, a single type of the cinnamic acid derivative or a combination of different types of cinnamic acid derivatives may be used.

The (a) cinnamic acid derivative is represented by the following chemical formula (I).



wherein

A is chosen from

an OR₃ group wherein R₃ is chosen from a hydrogen atom, a phetyl group, a benzyl group, a linear or branched C₁-C₁₈ alkyl group, a C₃-C₈ cycloalkyl group, a C₃-C₈ cycloalkyl-C₁-C₅ alkyl group, an alkali metal ion, an alkaline earth metal ion and an ammonium ion,

and

an NHR₄ group wherein R₄ is chosen from a hydrogen atom, a phetyl group, a benzyl group, and a linear or branched C₁-C₁₈ alkyl group, a C₃-C₈ cycloalkyl group, a C₃-C₈ cycloalkyl-C₁-C₅ alkyl group,

R₁ is chosen from a hydrogen atom, a hydroxyl group, a C₁-C₆ alkoxy group, a linear or branched C₁-C₁₈ alkyl group, a C₃-C₈ cycloalkyl group, a C₃-C₈ cycloalkyl-C₁-C₅ alkyl group, and

R₂ is chosen from a hydrogen atom, a hydroxyl group, and a C₁-C₆ alkoxy group;

As the linear or branched C₁-C₁₈ alkyl group, preferably C₁-C₁₂ alkyl group, and more preferably C₁-C₆ alkyl group, mention may be made of, for example, a methyl group, an ethyl group, an n-propyl group, an i-propyl group, an n-butyl group, an i-butyl group, a sec-butyl

group, a tert-butyl group, an n-pentyl group, an i-pentyl group, an 1-ethylpropyl group, a hexyl group, an isohexyl group, and an 1-ethylbutyl group.

5 As the C₃-C₈ cycloalkyl group, mention may be made of, for example, a cyclopropyl group, a cyclobutyl group, a cyclopentyl group, and a cyclohexyl group.

10 As the C₃-C₈ cycloalkyl-C₁-C₅ alkyl group, mention may be made of, for example, a cyclopropylmethyl group, a cyclobutylmethyl group, a cyclopentylmethyl group, and a cyclohexylmethyl group.

15 As the C₁-C₆ alkoxy group, mention may be made of, for example, a methoxy group, an ethoxy group, an n-propoxy group, an i-propoxy group, an n-butoxy group, an i-butoxy group, a sec-butoxy group, a tert-butoxy group, an n-pentyloxy group, an i-pentyloxy group, an 1-ethylpropoxy group, a hexyloxy group, an isohexyloxy group, and an 1-ethylbutoxy group.
A methoxy group is preferable.

It may be preferable that R₁ be a hydroxyl group, and that R₂ be chosen from a hydroxyl group and a C₁-C₆ alkoxy group, more preferably a methoxy group.

20 As the (a) cinnamic acid derivative, mention may be made of, for example, 2-ethylhexyl methoxycinnamate, isopropyl methoxycinnamate, isoamyl methoxycinnamate, diisopropyl methoxycinnamate, caffeic acid, ferulic acid. Caffeic acid and ferulic acid may be preferable, and ferulic acid may be more preferable.

25 The (a) cinnamic acid derivative may be an active ingredient or active compound in cosmetics or dermatological products. The term an "active" compound used herein means a compound which has a cosmetic or dermatological active property, such as anti-oxidant, whitening, and UV-filtering effects. Preferably, the (a) cinnamic acid derivative used in the present invention may be a UV filter, and thus the composition according to the present invention
30 may be used as a UV-protecting products or as a cosmetic composition for protecting keratin substance such as skin from UV rays.

The amount of the (a) cinnamic acid derivative(s) in the composition according to the present invention may be 0.001% by weight or more, preferably 0.01% by weight or more, and more
35 preferably 0.1% by weight or more, relative to the total weight of the composition. It may be even more preferable that the amount of the (a) cinnamic acid derivative(s) in the composition according to the present invention be 0.2% by weight or more, relative to the total weight of the composition.

40 On the other hand, the amount of the (a) cinnamic acid derivative(s) in the composition according to the present invention may be 20% by weight or less, preferably 10% by weight or less, and more preferably 1% by weight or less, relative to the total weight of the composition. It may be even more preferable that the amount of the (a) cinnamic acid
45 derivative(s) in the composition according to the present invention be 0.8% by weight or less, relative to the total weight of the composition.

The amount of the (a) cinnamic acid derivative(s) in the composition according to the present invention may range from 0.001% to 20% by weight, preferably from 0.01% to 10% by
50 weight, more preferably from 0.1% to 1% by weight, relative to the total weight of the composition. It may be even more preferable that the amount of the (a) cinnamic acid

derivative(s) in the composition according to the present invention be from 0.2% to 0.8% by weight, relative to the total weight of the composition.

(Oil)

5

The composition according to the present invention comprises (b) at least one oil to which the (a) cinnamic acid derivative is soluble. Two or more (b) oils may be used in combination. Thus, a single type of oil or a combination of different types of oils may be used.

10

Here, "oil" means a fatty compound or substance which is in the form of a liquid or a paste (non-solid) at room temperature (25°C) under atmospheric pressure (760 mmHg). As oils, those generally used in cosmetics can be used alone or in combination thereof. These oils may be volatile or non-volatile.

15

The (a) cinnamic acid derivative is soluble to the (b) oil. It is preferable that the solubility of the (a) cinnamic acid derivative to the (b) oil be 0.5% or more, more preferably 0.7% or more, and even more preferably 0.9% or more, at room temperature (20-25°C, preferably 25°C). It may be preferable that the solubility of the (a) cinnamic acid derivative to the (b) oil be 25% or less, more preferably 20% or less, and even more preferably 15% or less, at room

20

temperature (20-25°C, preferably 25°C). Thus, the solubility of the (a) cinnamic acid derivative to the (b) oil may be from 0.5% to 25%, preferably from 0.7% to 20%, and more preferably from 0.9% to 15%. The solubility here means an amount (g) of the (a) cinnamic acid derivative which is soluble in 100 g of the (a) oil.

25

It is preferable that the (b) oil be selected from polar oils.

30

The term "polar oil" here means any lipophilic compound having, at 25°C, a solubility parameter δ_d characteristic of dispersive interactions of greater than 16 and a solubility parameter δ_p characteristic of polar interactions strictly greater than 0. The solubility parameters δ_d and δ_p are defined according to the Hansen classification.

35

The definition and calculation of the solubility parameters in the Hansen three-dimensional solubility space are described in the paper by C. M. Hansen: "The three dimensional solubility parameters", J. Paint Technol. 39, 105 (1967).

According to this Hansen space:

δ_D characterizes the London dispersion forces derived from the formation of dipoles induced during molecular impacts;

40

δ_p characterizes the Debye interaction forces between permanent dipoles and also the Keesom interaction forces between induced dipoles and permanent dipoles;

δ_h characterizes the specific interaction forces (such as hydrogen bonding, acid/base, donor/acceptor, etc.); and

δ_a is determined by the equation: $\delta_a = (\delta_p^2 + \delta_h^1)^{1/2}$. The parameters δ_p , δ_h , δ_d and δ_a are expressed in $(\text{J}/\text{cm}^3)^{1/2}$.

45

It may be preferable that polar oil be selected from the group consisting of plant or animal oil, such as triglycerides, ester oils, ether oils and mixtures thereof, more preferably from the group consisting of ester oils, ether oils and mixtures thereof, and even more preferably from ester oils.

50

The polar oil may be chosen especially from the following oils:

- hydrocarbon-based polar oils such as phytostearyl esters, such as phytostearyl oleate, phytostearyl isostearate and lauroyl/octyldodecyl/phytostearyl glutamate (Ajinomoto, Eldew PS203), triglycerides consisting of fatty acid esters of glycerol, in particular
5 the fatty acids of which may have chain lengths ranging from C₄ to C₃₆, and especially from C₁₈ to C₃₆, these oils possibly being linear or branched, and saturated or unsaturated; these oils may especially be heptanoic or octanoic triglycerides, wheatgerm oil, sunflower oil, grapeseed oil, sesame seed oil (820.6 g/mol), corn oil, apricot oil, castor oil, shea oil, avocado oil, olive oil, soybean oil, sweet almond oil,
10 palm oil, rapeseed oil, cottonseed oil, hazelnut oil, macadamia oil, jojoba oil, alfalfa oil, poppy oil, pumpkin oil, marrow oil, blackcurrant oil, evening primrose oil, millet oil, barley oil, quinoa oil, rye oil, safflower oil, candlenut oil, passionflower oil or musk rose oil; shea butter; or alternatively caprylic/capric acid triglycerides, for instance those sold by the company Stearineries Dubois or those sold under the names Miglyol 810®, 812® and 818® by the company Dynamit Nobel;
- synthetic ethers containing from 10 to 40 carbon atoms, such as dicaprylyl ether;
- hydrocarbon-based esters of formula RCOOR' in which RCOO represents a carboxylic acid residue comprising from 2 to 40 carbon atoms, and R' represents a hydrocarbon-based chain containing from 1 to 40 carbon atoms, such as cetostearyl
20 octanoate, isopropyl alcohol esters, such as isopropyl myristate or isopropyl palmitate, ethyl palmitate, isopropyl stearate or isostearate, isostearyl isostearate, octyl stearate, diisopropyl adipate, heptanoates, and especially isostearyl heptanoate, alcohol or polyalcohol octanoates, decanoates or ricinoleates, for instance propylene glycol dioctanoate, cetyl octanoate, tridecyl octanoate, 2-ethylhexyl 4-diheptanoate
25 and palmitate, alkyl benzoate, polyethylene glycol diheptanoate, propylene glycol 2-diethyl hexanoate, and mixtures thereof, C₁₂ to C₁₅ alcohol benzoates, hexyl laurate, neopentanoic acid esters, for instance isodecyl neopentanoate, isotridecyl neopentanoate, isostearyl neopentanoate and 2-octyldodecyl neopentanoate, isononanoic acid esters, for instance isononyl isononanoate, isotridecyl isononanoate
30 and octyl isononanoate, oleyl erucate, isopropyl lauroyl sarcosinate, diisopropyl sebacate, isocetyl stearate, isodecyl neopentanoate, isostearyl behenate, and myristyl myristate;
- polyesters obtained by condensation of an unsaturated fatty acid dimer and/or trimer and of diol, such as those described in patent application FR 0 853 634, in particular
35 such as dilinoleic acid and 1,4-butanediol. Mention may especially be made in this respect of the polymer sold by Biosynthis under the name Viscoplast 14436H (INCI name: dilinoleic acid/butanediol copolymer), or else copolymers of polyols and of dimer diacids, and esters thereof, such as Hailuscent ISDA;
- polyol esters and pentaerythritol esters, for instance dipentaerythrityl
40 tetrahydroxystearate/tetraistearate;
- fatty alcohols containing from 12 to 26 carbon atoms, for instance octyldodecanol, 2-butyloctanol, 2-hexyldecanol, 2-undecylpentadecanol and oleyl alcohol;
- higher C₁₂-C₂₂ fatty acids, such as oleic acid, linoleic acid and linolenic acid, and mixtures thereof;
- 45 - fatty acids containing from 12 to 26 carbon atoms, for instance oleic acid;
- dialkyl carbonates, the two alkyl chains possibly being identical or different, such as dicaprylyl carbonate sold under the name Cetiol CC® by Cognis; and
- non-volatile oils of high molecular mass, for example between 400 and 10 000 g/mol, in particular between 650 and 10 000 g/mol, for instance:
50 i) vinylpyrrolidone copolymers such as the vinylpyrrolidone/1-hexadecene

copolymer, Antaron V-216 sold or manufactured by the company ISP (MW=7300 g/mol);

ii) esters such as:

a) linear fatty acid esters with a total carbon number ranging from 35 to 70, for instance pentaerythrityl tetrapelargonate (MW=697.05 g/mol),

b) hydroxylated esters such as polyglycerol-2 triisostearate (MW=965.58 g/mol),

c) aromatic esters such as tridecyl trimellitate (MW=757.19 g/mol), C₁₂-C₁₅ alcohol benzoate, the 2-phenylethyl ester of benzoic acid, and butyloctyl salicylate,

d) esters of C₂₄-C₂₈ branched fatty acids or fatty alcohols such as those described in patent application EP-A-0 955 039, and especially triisoarachidyl citrate (MW=1033.76 g/mol), pentaerythrityl tetraisononanoate (MW=697.05 g/mol), glyceryl triisostearate (MW=891.51 g/mol), glyceryl tris(2-decyl)tetradecanoate (MW=1143.98 g/mol), pentaerythrityl tetraisostearate (MW=1202.02 g/mol), polyglyceryl-2 tetraisostearate (MW=1232.04 g/mol) or else pentaerythrityl tetrakis(2-decyl)tetradecanoate (MW=1538.66 g/mol),

e) esters and polyesters of dimer diol and of monocarboxylic or dicarboxylic acid, such as esters of dimer diol and of fatty acid and esters of dimer diol and of dimer dicarboxylic acid, such as Lusplan DD-DA5® and Lusplan DD-DA7® sold by the company Nippon Fine Chemical and described in patent application US 2004-175 338, the content of which is incorporated into the present application by reference,

and mixtures thereof.

The term "polar hydrocarbon-based oil" here means a polar oil formed essentially from, or even constituted by, carbon and hydrogen atoms, and optionally oxygen and nitrogen atoms, and not containing any silicon or fluorine atoms. It may contain alcohol, ester, ether, carboxylic acid, amine and/or amide groups.

It is preferable that the (b) oil has a logP value of 7.0 or less, more preferably 6.5 or less, and even more preferably 6.0 or less. It may be preferable that the (b) oil has a logP value of 1.0 or more, more preferably 1.5 or more, and even more preferably 2.0 or more. Thus, it may be preferable that the (b) oil has a logP value of from 1.0 to 7.0, more preferably from 1.5 to 6.5, and even more preferably from 2.0 to 6.0.

A logP value is a value for the base-ten logarithm of the apparent octan-1-ol/water partition coefficient. The logP values are known and are determined by a standard test which determines the concentration of the (b) oil in octan-1-ol and water. The logP may be calculated according to the method described in the article by Meylan and Howard: *Atom/Fragment contribution method for estimating octanol-water partition coefficients*, J. Pharm. Sci., 84: 83-92, 1995. This value may also be calculated using numerous commercially available software packages, which determine the logP as a function of the structure of a molecule. By way of example, mention may be made of the Epiwin software from the United States Environmental Agency.

The values may especially be calculated using the ACD (Advanced Chemistry Development) Solaris software V4.67; they may also be obtained from Exploring QSAR: hydrophobic, electronic and steric constants (ACS professional reference book, 1995). There is also an

Internet site which provides estimated values (address:
<http://esc.syrres.com/interkow/kowdemo.htm>).

5 The (b) oil may have at least two moieties selected from the group consisting of an amide bond, an ester bond, and mixtures thereof. The amide bond here means -CONR- (R denotes a hydrogen atom or a linear or branched C₁-C₁₈ alkyl group, preferably a methyl group) and the ester bond here means -COO-. In other words, the (b) oil may have two or more amide bonds, two or more ester bonds or a mixture of at least one amide bond and at least one ester bond.

10 The (b) oil may have at least two moieties selected from the group consisting of an ether bond, an ester bond, and mixtures thereof. The ether bond here means -O- and the ester bond here means -COO-. In other words, the (b) oil may have two or more ether bonds, two or more ester bonds or a mixture of at least one ether bond and at least one ester bond.

15 It is preferable that the (b) oil be selected from the group consisting of isopropyl lauroyl sarcosinate, bis-ethoxydiglycol cyclohexane 1,4-dicarboxylate and mixtures thereof.

20 The amount of the (b) oil(s) in the composition according to the present invention may be 0.01% by weight or more, preferably 0.1% by weight or more, and more preferably 1% by weight or more, relative to the total weight of the composition. It may be even more preferable that the amount of the (b) oil(s) in the composition according to the present invention be 3% by weight or more, relative to the total weight of the composition.

25 On the other hand, the amount of the (b) oil(s) in the composition according to the present invention may be 30% by weight or less, preferably 25% by weight or less, and more preferably 20% by weight or less, relative to the total weight of the composition. It may be even more preferable that the amount of the (b) oil(s) in the composition according to the present invention be 15% by weight or less, relative to the total weight of the composition.

30 The amount of the (b) oil(s) in the composition according to the present invention may range from 0.01% to 30% by weight, preferably from 0.1% to 25% by weight, more preferably from 1% to 20% by weight, relative to the total weight of the composition. It may be even more preferable that the amount of the (b) oil(s) in the composition according to the present invention be from 3% to 15% by weight, relative to the total weight of the composition.

(Water)

40 The composition according to the present invention includes (c) water.

The amount of the (c) water in the composition according to the present invention may be 50% by weight or more, preferably 60% by weight or more, and more preferably 70% by weight or more, relative to the total weight of the composition. It may be even more preferable that the amount of the (c) water in the composition according to the present invention be 75% by weight or more, relative to the total weight of the composition.

50 On the other hand, the amount of the (c) water in the composition according to the present invention may be 95% by weight or less, preferably 90% by weight or less, and more preferably 87% by weight or less, relative to the total weight of the composition. It may be even more preferable that the amount of the (c) water in the composition according to the

present invention be 85% by weight or less, relative to the total weight of the composition.

The amount of (c) water in the composition according to the present invention may be from 50 to 95% by weight, preferably from 60 to 90% by weight, and more preferably from 70 to 87% by weight, relative to the total weight of the composition. It may be even more preferable that the amount of the (c) water in the composition according to the present invention be from 75% to 85% by weight, relative to the total weight of the composition.

(Surfactant)

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The composition according to the present invention may include (d) at least one surfactant. If two or more surfactants are used, they may be the same or different.

Any surfactant may be used for the present invention. The (d) surfactant used in the present invention may be selected from the group consisting of anionic surfactants, amphoteric surfactants, cationic surfactants, and nonionic surfactants. Two or more surfactants may be used in combination. Thus, a single type of surfactant or a combination of different types of surfactants may be used.

The (d) surfactant may preferably be selected from the group consisting of nonionic surfactants.

(Anionic Surfactants)

According to the present invention, the type of anionic surfactant is not limited. It is preferable that the anionic surfactant be selected from the group consisting of (C₆-C₃₀)alkyl sulfates, (C₆-C₃₀)alkyl ether sulfates, (C₆-C₃₀)alkylamido ether sulfates, alkylaryl polyether sulfates, and monoglyceride sulfates; (C₆-C₃₀)alkylsulfonates, (C₆-C₃₀)alkylamide sulfonates, (C₆-C₃₀)alkylaryl sulfonates, α-olefin sulfonates, and paraffin sulfonates; (C₆-C₃₀)alkyl phosphates; (C₆-C₃₀)alkyl sulfosuccinates, (C₆-C₃₀)alkyl ether sulfosuccinates, and (C₆-C₃₀)alkylamide sulfosuccinates; (C₆-C₃₀)alkyl sulfoacetates; (C₆-C₂₄)acyl sarcosinates; (C₆-C₂₄)acyl glutamates; (C₆-C₃₀)alkylpolyglycoside carboxylic ethers; (C₆-C₃₀)alkylpolyglycoside sulfosuccinates; (C₆-C₃₀)alkyl sulfosuccinamates; (C₆-C₂₄)acyl isethionates; N-(C₆-C₂₄)acyl taurates; C₆-C₃₀ fatty acid salts; coconut oil acid salts or hydrogenated coconut oil acid salts; (C₈-C₂₀)acyl lactylates; (C₆-C₃₀)alkyl-D-galactoside uronic acid salts; polyoxyalkylenated (C₆-C₃₀)alkyl ether carboxylic acid salts; polyoxyalkylenated (C₆-C₃₀)alkylaryl ether carboxylic acid salts; and polyoxyalkylenated (C₆-C₃₀)alkylamido ether carboxylic acid salts.

It is more preferable that the anionic surfactant be selected from salts of (C₆-C₃₀)alkyl sulfate or polyoxyalkylenated (C₆-C₃₀)alkyl ether carboxylic acid salts.

In at least one embodiment, the anionic surfactants are in the form of salts such as salts of alkali metals, for instance sodium; salts of alkaline-earth metals, for instance magnesium; ammonium salts; amine salts; and amino alcohol salts. Depending on the conditions, they may also be in acid form.

(Amphoteric Surfactants)

According to the present invention, the type of amphoteric surfactant is not limited. The

amphoteric or zwitterionic surfactants can be, for example (non-limiting list), amine derivatives such as aliphatic secondary or tertiary amine, and optionally quaternized amine derivatives, in which the aliphatic radical is a linear or branched chain comprising 8 to 22 carbon atoms and containing at least one water-solubilizing anionic group (for example, 5 carboxylate, sulphonate, sulphate, phosphate, or phosphonate).

The amphoteric surfactant may preferably be selected from the group consisting of betaines and amidoaminocarboxylated derivatives.

10 The betaine-type amphoteric surfactant is preferably selected from the group consisting of alkylbetaines, alkylamidoalkylbetaines, sulfobetaines, phosphobetaines, and alkylamidoalkylsulfobetaines, in particular, (C₈-C₂₄)alkylbetaines, (C₈-C₂₄)alkylamido(C₁-C₈)alkylbetaines, sulphobetaines, and (C₈-C₂₄)alkylamido(C₁-C₈)alkylsulphobetaines. In one embodiment, the amphoteric 15 surfactants of betaine type are chosen from (C₈-C₂₄)alkylbetaines, (C₈-C₂₄)alkylamido(C₁-C₈)alkylsulphobetaines, sulphobetaines, and phosphobetaines.

Non-limiting examples that may be mentioned include the compounds classified in the CTFA dictionary, 9th edition, 2002, under the names cocobetaine, laurylbetaine, cetylbetaine, 20 coco/oleamidopropylbetaine, cocamidopropylbetaine, palmitamidopropylbetaine, stearamidopropylbetaine, cocamidoethylbetaine, cocamidopropylhydroxysultaine, oleamidopropylhydroxysultaine, cocohydroxysultaine, laurylhydroxysultaine, and cocosultaine, alone or as mixtures.

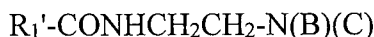
25 The betaine-type amphoteric surfactant is preferably an alkylbetaine and an alkylamidoalkylbetaine, in particular cocobetaine and cocamidopropylbetaine.

Among the amidoaminocarboxylated derivatives, mention may be made of the products sold under the name Miranol, as described in U.S. Pat. Nos. 2,528,378 and 2,781,354 and 30 classified in the CTFA dictionary, 3rd edition, 1982 (the disclosures of which are incorporated herein by reference), under the names Amphocarboxyglycinates and Amphocarboxypionates, with the respective structures:



35 in which:

R₁ denotes an alkyl radical of an acid R₁-COOH present in hydrolysed coconut oil, a heptyl, nonyl, or undecyl radical,
 R₂ denotes a beta-hydroxyethyl group, and
 40 R₃ denotes a carboxymethyl group; and



in which:

45 B represents -CH₂CH₂OX',
 C represents -(CH₂)_z-Y', with z=1 or 2,
 X' denotes a -CH₂CH₂-COOH group, -CH₂-COOZ', -CH₂CH₂-COOH, -CH₂CH₂-COOZ', or a hydrogen atom,
 Y' denotes -COOH, -COOZ', -CH₂-CHOH-SO₃Z', or a -CH₂-CHOH-SO₃H radical,
 50 Z' represents an ion of an alkaline or alkaline earth metal such as sodium, an ammonium ion,

or an ion issued from an organic amine, and

R₁' denotes an alkyl radical of an acid R₁'-COOH present in coconut oil or in hydrolysed linseed oil, an alkyl radical, such as a C₇, C₉, C₁₁, or C₁₃ alkyl radical, a C₁₇ alkyl radical and its iso form, or an unsaturated C₁₇ radical.

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It is preferable that the amphoteric surfactant be selected from (C₈-C₂₄)-alkyl amphomonoacetates, (C₈-C₂₄)alkyl amphodiacetates, (C₈-C₂₄)alkyl amphomonopropionates, and (C₈-C₂₄)alkyl amphodipropionates

10 These compounds are classified in the CTFA dictionary, 5th edition, 1993, under the names Disodium Cocoamphodiacetate, Disodium Lauroamphodiacetate, Disodium Caprylamphodiacetate, Disodium Capryloamphodiacetate, Disodium Cocoamphodipropionate, Disodium Lauroamphopropionate, Disodium Caprylamphodipropionate, Disodium Caprylamphodipropionate, Lauroamphodipropionic acid, and Cocoamphodipropionic acid.

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By way of example, mention may be made of the cocoamphodiacetate sold under the trade name Miranol® C2M concentrate by the company Rhodia Chimie.

(Cationic Surfactants)

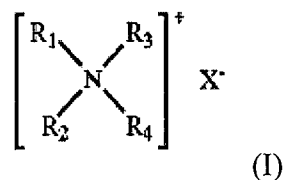
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According to the present invention, the type of cationic surfactant is not limited. The cationic surfactant may be selected from the group consisting of optionally polyoxyalkylenated, primary, secondary, or tertiary fatty amine salts, quaternary ammonium salts, and mixtures thereof.

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Examples of quaternary ammonium salts that may be mentioned include, but are not limited to:

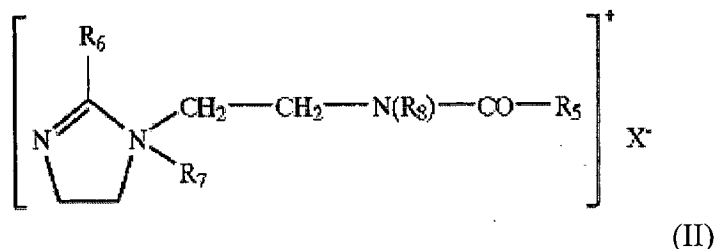
those of general formula (I) below:

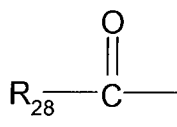


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wherein R₁, R₂, R₃, and R₄, which may be identical or different, are chosen from linear and branched aliphatic radicals comprising from 1 to 30 carbon atoms and optionally comprising heteroatoms such as oxygen, nitrogen, sulfur, and halogens. The aliphatic radicals may be chosen, for example, from alkyl, alkoxy, C₂-C₆ polyoxyalkylene, alkylamide, (C₁₂-C₂₂)alkylamido(C₂-C₆)alkyl, (C₁₂-C₂₂)alkylacetate, and hydroxyalkyl radicals; and aromatic radicals such as aryl and alkylaryl; and X⁻ is chosen from halides, phosphates, acetates, lactates, (C₂-C₆) alkyl sulfates, and alkyl- or alkylaryl-sulfonates; quaternary ammonium salts of imidazoline, for instance those of formula (II) below:

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linear and branched, saturated and unsaturated C₁-C₆ hydrocarbon-based radicals R₂₉, and hydrogen,

R₂₄, R₂₆, and R₂₈, which may be identical or different, are chosen from linear and branched, saturated and unsaturated, C₇-C₂₁, hydrocarbon-based radicals;

r, s, and t, which may be identical or different, are chosen from integers ranging from 2 to 6; each of r₁ and t₁, which may be identical or different, is 0 or 1, and r₂+r₁=2r and t₁+2t=2t; y is chosen from integers ranging from 1 to 10;

x and z, which may be identical or different, are chosen from integers ranging from 0 to 10;

X⁻ is chosen from simple and complex, organic and inorganic anions; with the proviso that the sum x+y+z ranges from 1 to 15, that when x is 0, R₂₃ denotes R₂₇, and that when z is 0, R₂₅ denotes R₂₉. R₂₂ may be chosen from linear and branched alkyl radicals. In one embodiment, R₂₂ is chosen from linear alkyl radicals. In another embodiment, R₂₂ is chosen from methyl, ethyl, hydroxyethyl, and dihydroxypropyl radicals, for example methyl and ethyl radicals. In one embodiment, the sum x+y+z ranges from 1 to 10. When R₂₃ is a hydrocarbon-based radical R₂₇, it may be long and comprise from 12 to 22 carbon atoms, or short and comprise from 1 to 3 carbon atoms. When R₂₅ is a hydrocarbon-based radical R₂₉, it may comprise, for example, from 1 to 3 carbon atoms. By way of a non-limiting example, in one embodiment, R₂₄, R₂₆, and R₂₈, which may be identical or different, are chosen from linear and branched, saturated and unsaturated, C₁₁-C₂₁ hydrocarbon-based radicals, for example from linear and branched, saturated and unsaturated C₁₁-C₂₁ alkyl and alkenyl radicals. In another embodiment, x and z, which may be identical or different, are 0 or 1. In one embodiment, y is equal to 1. In another embodiment, r, s, and t, which may be identical or different, are equal to 2 or 3, for example equal to 2. The anion X⁻ may be chosen from, for example, halides, such as chloride, bromide, and iodide; and C₁-C₄ alkyl sulfates, such as methyl sulfate. However, methanesulfonate, phosphate, nitrate, tosylate, an anion derived from an organic acid, such as acetate and lactate, and any other anion that is compatible with the ammonium comprising an ester function, are other non-limiting examples of anions that may be used according to the present invention. In one embodiment, the anion X⁻ is chosen from chloride and methyl sulfate.

In another embodiment, the ammonium salts of formula (IV) may be used, wherein:

R₂₂ is chosen from methyl and ethyl radicals,

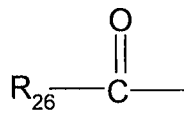
x and y are equal to 1;

z is equal to 0 or 1;

r, s, and t are equal to 2;

R₂₃ is chosen from:

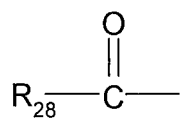
the radical below:



methyl, ethyl, and C₁₄-C₂₂ hydrocarbon-based radicals, and hydrogen;

R₂₅ is chosen from:

the radical below:



and hydrogen;

R₂₄, R₂₆, and R₂₈, which may be identical or different, are chosen from linear and branched, saturated and unsaturated, C₁₃-C₁₇ hydrocarbon-based radicals, for example from linear and branched, saturated and unsaturated, C₁₃-C₁₇ alkyl and alkenyl radicals.

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In one embodiment, the hydrocarbon-based radicals are linear.

Non-limiting examples of compounds of formula (IV) that may be mentioned include salts, for example chloride and methyl sulfate, of diacyloxyethyl-dimethylammonium, of diacyloxyethyl-hydroxyethyl-methylammonium, of monoacyloxyethyl-dihydroxyethyl-methylammonium, of triacyloxyethyl-methylammonium, of monoacyloxyethyl-hydroxyethyl-dimethyl-ammonium, and mixtures thereof. In one embodiment, the acyl radicals may comprise from 14 to 18 carbon atoms, and may be derived, for example, from a plant oil, for instance palm oil and sunflower oil. When the compound comprises several acyl radicals, these radicals may be identical or different.

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These products may be obtained, for example, by direct esterification of optionally oxyalkylenated triethanolamine, triisopropanolamine, alkyldiethanolamine, or alkyldiisopropanolamine onto fatty acids or onto mixtures of fatty acids of plant or animal origin, or by transesterification of the methyl esters thereof. This esterification may be followed by a quaternization using an alkylating agent chosen from alkyl halides, for example methyl and ethyl halides; dialkyl sulfates, for example dimethyl and diethyl sulfates; methyl methanesulfonate; methyl para-toluenesulfonate; glycol chlorohydrin; and glycerol chlorohydrin.

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Such compounds are sold, for example, under the names Dehyquat® by the company Cognis, Stepanquat® by the company Stepan, Noxanium® by the company Ceca, and "Rewoquat® WE 18" by the company Rewo-Goldschmidt.

Other non-limiting examples of ammonium salts that may be used in the compositions according to the present invention include the ammonium salts comprising at least one ester function described in U.S. Pat. Nos. 4,874,554 and 4,137,180.

Among the quaternary ammonium salts mentioned above that may be used in the compositions according to the present invention include, but are not limited to, those corresponding to formula (I), for example tetraalkylammonium chlorides, for instance dialkyldimethylammonium and alkyltrimethylammonium chlorides in which the alkyl radical comprises from about 12 to 22 carbon atoms, such as behenyltrimethylammonium, distearyldimethylammonium, cetyltrimethylammonium, and benzyldimethylstearyl ammonium chloride; palmitylamidopropyltrimethylammonium chloride; and stearamidopropyldimethyl(myristyl acetate)ammonium chloride, sold under the name "Ceraphyl® 70" by the company Van Dyk.

According to one embodiment, the cationic surfactant that may be used in the compositions of the present invention is chosen from quaternary ammonium salts, for example from behenyltrimethylammonium chloride, cetyltrimethylammonium chloride, Quaternium-83, Quaternium-87, Quaternium-22, behenylamidopropyl-2,3-dihydroxypropyldimethylammonium chloride, palmitylamidopropyltrimethylammonium chloride, and stearamidopropyldimethylamine.

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(Nonionic Surfactants)

The nonionic surfactants are compounds well known in and of themselves (see, e.g., in this regard, "Handbook of Surfactants" by M. R. Porter, Blackie & Son publishers (Glasgow and London), 1991, pp. 116-178). Thus, they can, for example, be chosen from alcohols, alpha-diols, alkylphenols and esters of fatty acids, these compounds being ethoxylated, propoxylated or glycerolated and having at least one fatty chain comprising, for example, from 8 to 30 carbon atoms, it being possible for the number of ethylene oxide or propylene oxide groups to range from 2 to 50, and for the number of glycerol groups to range from 1 to 30. Maltose derivatives may also be mentioned. Non-limiting mention may also be made of copolymers of ethylene oxide and/or of propylene oxide; condensates of ethylene oxide and/or of propylene oxide with fatty alcohols; polyethoxylated fatty amides comprising, for example, from 2 to 30 mol of ethylene oxide; polyglycerolated fatty amides comprising, for example, from 1.5 to 5 glycerol groups, such as from 1.5 to 4; ethoxylated fatty acid esters of sorbitan comprising from 2 to 30 mol of ethylene oxide; ethoxylated oils of plant origin; fatty acid esters of sucrose; fatty acid esters of polyethylene glycol; polyethoxylated fatty acid mono or diesters of glycerol (C₆-C₂₄)alkylpolyglycosides; N-(C₆-C₂₄)alkylglucamine derivatives; amine oxides such as (C₁₀-C₁₄)alkylamine oxides or N-(C₁₀-C₁₄)acylaminopropylmorpholine oxides; and mixtures thereof.

The nonionic surfactants may preferably be chosen from monoxyalkylenated, polyoxyalkylenated, monoglycerolated or polyglycerolated nonionic surfactants. The oxyalkylene units are more particularly oxyethylene or oxypropylene units, or a combination thereof, and are preferably oxyethylene units.

Examples of monoxyalkylenated or polyoxyalkylenated nonionic surfactants that may be mentioned include:

monoxyalkylenated or polyoxyalkylenated (C₈-C₂₄)alkylphenols, saturated or unsaturated, linear or branched, monoxyalkylenated or polyoxyalkylenated C₈-C₃₀ alcohols, saturated or unsaturated, linear or branched, monoxyalkylenated or polyoxyalkylenated C₈-C₃₀ amides, esters of saturated or unsaturated, linear or branched, C₈-C₃₀ acids and of polyalkylene glycols, monoxyalkylenated or polyoxyalkylenated esters of saturated or unsaturated, linear or branched, C₈-C₃₀ acids and of sorbitol, saturated or unsaturated, monoxyalkylenated or polyoxyalkylenated plant oils, condensates of ethylene oxide and/or of propylene oxide, inter alia, alone or as mixtures.

The surfactants preferably contain a number of moles of ethylene oxide and/or of propylene oxide of between 1 and 100 and most preferably between 2 and 50. Advantageously, the nonionic surfactants do not comprise any oxypropylene units.

According to one of the embodiments of the present invention, the polyoxyalkylenated nonionic surfactants are chosen from polyoxyethylenated fatty alcohol (polyethylene glycol ether of fatty alcohol), polyoxyethylenated fatty ester (polyethylene glycol ester of fatty acid), and mixture of polyoxyethylenated fatty alcohol and polyoxyethylenated fatty ester.

Examples of polyoxyethylenated fatty alcohol (or C₈-C₃₀ alcohols) that may be mentioned include the adducts of ethylene oxide with lauryl alcohol, especially those containing from 2

to 50 oxyethylene units and more particularly those containing from 2 to 20 oxyethylene units (Laureth-2 to Laureth-20, as the CTFA names); the adducts of ethylene oxide with behenyl alcohol, especially those containing from 2 to 50 oxyethylene units and more particularly those containing from 2 to 20 oxyethylene units (Beheneth-2 to Beheneth-20, as the CTFA names); the adducts of ethylene oxide with cetearyl alcohol (mixture of cetyl alcohol and stearyl alcohol), especially those containing from 2 to 30 oxyethylene units (Cetareth-2 to Cetareth-30, as the CTFA names); the adducts of ethylene oxide with cetyl alcohol, especially those containing from 2 to 30 oxyethylene units (Ceteth-2 to Ceteth-30, as the CTFA names); the adducts of ethylene oxide with stearyl alcohol, especially those containing from 2 to 50 oxyethylene units and more particularly those containing from 2 to 20 oxyethylene units (Steareth-2 to Steareth-20, as the CTFA names); the adducts of ethylene oxide with isostearyl alcohol, especially those containing from 2 to 50 oxyethylene units (Isosteareth-2 to Isosteareth-50, as the CTFA names); and mixtures thereof.

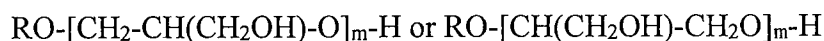
Examples of polyoxyethylenated fatty esters that may be mentioned include the adducts of ethylene oxide with esters of lauric acid, palmitic acid, stearic acid or behenic acid, and mixtures thereof, especially those containing from 9 to 100 oxyethylene units, such as PEG-9 to PEG-50 laurate (as the CTFA names: PEG-9 laurate to PEG-50 laurate); PEG-9 to PEG-50 palmitate (as the CTFA names: PEG-9 palmitate to PEG-50 palmitate); PEG-9 to PEG-50 stearate (as the CTFA names: PEG-9 stearate to PEG-50 stearate); PEG-9 to PEG-50 palmitostearate; PEG-9 to PEG-50 behenate (as the CTFA names: PEG-9 behenate to PEG-50 behenate); polyethylene glycol 100 EO monostearate (CTFA name: PEG-100 stearate); and mixtures thereof.

According to one preferred embodiment of the present invention, the composition according to the present invention comprises at least one polyoxyethylenated fatty alcohol.

According to a more preferred embodiment, the composition according to the present invention contains at least one fatty alcohol comprising from 2 to 9 ethyleneoxide units and at least one fatty alcohol comprising from 10 to 30 ethyleneoxide units.

As examples of monoglycerolated or polyglycerolated nonionic surfactants, monoglycerolated or polyglycerolated C₈-C₄₀ alcohols are preferably used.

In particular, the monoglycerolated or polyglycerolated C₈-C₄₀ alcohols correspond to the following formula:



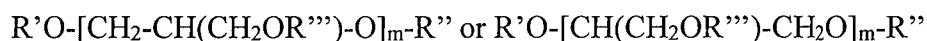
in which R represents a linear or branched C₈-C₄₀ and preferably C₈-C₃₀ alkyl or alkenyl radical, and m represents a number ranging from 1 to 30 and preferably from 1.5 to 10.

As examples of compounds that are suitable in the context of the present invention, mention may be made of lauryl alcohol containing 4 mol of glycerol (INCI name: Polyglyceryl-4 Lauryl Ether), lauryl alcohol containing 1.5 mol of glycerol, oleyl alcohol containing 4 mol of glycerol (INCI name: Polyglyceryl-4 Oleyl Ether), oleyl alcohol containing 2 mol of glycerol (INCI name: Polyglyceryl-2 Oleyl Ether), cetearyl alcohol containing 2 mol of glycerol, cetearyl alcohol containing 6 mol of glycerol, oleocetyl alcohol containing 6 mol of glycerol, and octadecanol containing 6 mol of glycerol.

The alcohol may represent a mixture of alcohols in the same way that the value of m represents a statistical value, which means that, in a commercial product, several species of polyglycerolated fatty alcohol may coexist in the form of a mixture.

- 5 Among the monoglycerolated or polyglycerolated alcohols, it is preferable to use the C₈/C₁₀ alcohol containing 1 mol of glycerol, the C₁₀/C₁₂ alcohol containing 1 mol of glycerol and the C₁₂ alcohol containing 1.5 mol of glycerol.

10 The monoglycerolated or polyglycerolated C₈-C₄₀ fatty esters may correspond to the following formula:



15 in which each of R', R'' and R''' independently represents a hydrogen atom, or a linear or branched C₈-C₄₀ and preferably C₈-C₃₀ alkyl-CO- or alkenyl-CO-radical, with the proviso that at least one of R', R'' and R''' is not a hydrogen atom, and m represents a number ranging from 1 to 30 and preferably from 1.5 to 10.

20 Examples of polyoxyethylenated fatty esters that may be mentioned include the adducts of ethylene oxide with esters of lauric acid, palmitic acid, stearic acid or behenic acid, and mixtures thereof, especially those containing from 9 to 100 oxyethylene units, such as PEG-9 to PEG-50 laurate (as the CTFA names: PEG-9 laurate to PEG-50 laurate); PEG-9 to PEG-50 palmitate (as the CTFA names: PEG-9 palmitate to PEG-50 palmitate); PEG-9 to PEG-50 stearate (as the CTFA names: PEG-9 stearate to PEG-50 stearate); PEG-9 to PEG-50
25 palmitostearate; PEG-9 to PEG-50 behenate (as the CTFA names: PEG-9 behenate to PEG-50 behenate); polyethylene glycol 100 EO monostearate (CTFA name: PEG-100 stearate); and mixtures thereof.

30 Preferably, the nonionic surfactant may be a nonionic surfactant with an HLB from 8 to 18. The HLB is the ratio between the hydrophilic part and the lipophilic part in the molecule. This term HLB is well known to those skilled in the art and is described in "The HLB system. A time-saving guide to emulsifier selection" (published by ICI Americas Inc., 1984).

35 The amount of the (d) surfactant(s) in the composition according to the present invention may be 0.01% by weight or more, preferably 0.05% by weight or more, and more preferably 0.1% by weight or more, relative to the total weight of the composition.

40 The amount of the (d) surfactant(s) in the composition according to the present invention may be 10% by weight or less, preferably 8% by weight or less, and more preferably 5% by weight or less, relative to the total weight of the composition.

45 The amount of the (d) surfactant(s) in the composition according to the present invention may be from 0.01% to 10% by weight, preferably from 0.05% to 8% by weight, and more preferably from 0.1% to 5% by weight, relative to the total weight of the composition.

(pH)

50 The composition according to the present invention may have a pH of less than 7.0, preferably less than 6.0, more preferably less than 5.0, and even more preferably less than 4.5. This means that the composition according to the present invention is acidic.

It may be preferable that the composition according to the present invention have a pH of 3.0 or more, more preferably 3.5 or more, and even more preferably 4.0 or more.

5 (Other Optional Additives)

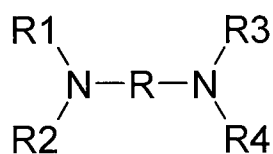
The composition according to the present invention may also comprise any other optional additive(s) usually used in the field of cosmetics, chosen, for example, from co-surfactants, anionic, cationic, amphoteric or nonionic polymers, solvents, gums, resins, hydrophilic
10 thickening agents, hydrophobic thickening agents, dispersants, antioxidants, film-forming agents, preserving agents, fragrances, neutralizers, pH adjusting agents, antiseptics, UV-screening agents other than the ingredient (a), cosmetic active agents other than the ingredient (a), such as vitamins, moisturizers, emollients or collagen-protecting agents, and mixtures thereof.

15 As the pH adjusting agent, at least one acidifying agent and/or at least one basifying agent (alkaline agent) may be used.

The acidifying agents can be, for example, mineral or organic acids, for instance hydrochloric
20 acid, phosphoric acid, carboxylic acids, for instance tartaric acid, citric acid, and lactic acid, or sulphonic acids.

The acidifying agent may be present in an amount ranging from less than 5% by weight, preferably from 3% by weight or less, and more preferably from 1% by weight or less,
25 relative to the total weight of the composition.

The basifying agent or alkaline agent can be, for example, any inorganic or organic basic agents which are commonly used in cosmetic products such as ammonia; alkanolamines such as mono-, di- and tri-ethanolamine, isopropanolamine; metal hydroxide such as alkaline metal
30 hydroxide (e.g., sodium and potassium hydroxides); urea, guanidine and their derivatives; and diamines such as those described in the structure below:



wherein

35 R denotes an alkylene such as propylene optionally substituted by a hydroxyl or a C₁-C₄ alkyl radical, and R₁, R₂, R₃, and R₄ independently denote a hydrogen atom, an alkyl radical, or a C₁-C₄ hydroxyalkyl radical, which may be exemplified by 1,3-propanediamine, and derivatives thereof. Alkaline metal hydroxide such as sodium hydroxide may be preferable.

40 The composition according to the present invention may comprise at least one water-miscible solvent such as a lower monoalcohol containing from 1 to 5 carbon atoms, C₃-C₄ ketones or C₃-C₄ aldehydes. The water-miscible solvent that can preferably be used is ethanol. The content of water-miscible solvent can range from 0.1% to 15% by weight, and better still from 1% to 8% by weight, relative to the total weight of the composition.

45 It is a matter of routine operation for a person skilled in the art to adjust the nature and amount of the above optional additives which may be present in the composition in

accordance with the present invention such that the desired cosmetic properties are not thereby affected.

[Preparation]

5

The composition according to the present invention can be prepared by mixing the above-described essential and optional ingredients in a conventional manner.

10 For example, the composition according to the present invention can be prepared by a process comprising the steps of mixing

- (a) at least one cinnamic acid derivative represented by the above chemical formula (I);
- (b) at least one oil to which the (a) cinnamic acid derivative is soluble; and
- (c) water.

15

It is possible to further mix any of the optional ingredients.

20 The mixing can be performed at any temperature such as room temperature (e.g., 20-25°C, preferably at 25°C), preferably at a temperature of 30°C or more, preferably 40°C or more, and more preferably 50°C or more. It is preferable to further mix with any of the above-described optional ingredients such as a pH adjusting agent.

25 The form of the composition according to the present invention is not particularly limited, and may take various forms such as an O/W emulsion, a bi-phase composition, a gel, a solution, or the like. It is preferable that the composition according to the present invention be in the form of an O/W emulsion or a bi-phase composition.

30 The bi-phase composition here means a composition comprising two phases, in particular an oil phase and an aqueous phase. The two phases are continuous, and therefore, one of them is not dispersed in the other. In other words, both of the two phases form continuous phases.

Typically when not being used, each phase is visually distinct from each other. Each phase may provide any independent visual effect. Thus, the bi-phase composition may provide unique appearances.

35

[Cosmetic Process]

40 The composition according to the present invention may be used as a cosmetic or dermatologic composition, preferably a cosmetic composition, and more preferably a cosmetic composition for a keratin substance. As the keratin substance, mention may be made of the skin, scalp, hair, mucosa such as lips, and nails.

45 The composition according to the present invention may be used as an anti-oxidant, whitening, or UV filtering product for a keratinous substance such as skin. In particular, the composition according to the present invention may be used as a UV screening product.

The composition according to the present invention may preferably be intended for application onto a keratin substance such as the skin, scalp and/or the lips, preferably the skin.

50 Thus, the composition according to the present invention can be used for a cosmetic process

for a keratin substance, preferably the skin. In one embodiment, the present invention relates to a cosmetic process, preferably a UV shielding process, for a keratin substance, preferably skin, comprising the step of applying onto the keratin substance the composition according to the present invention.

5

The composition according to the present invention can be used as a topical cosmetic composition in the form of a lotion, a milky lotion, a cream, a gel, a paste, a serum, foam, or spray.

10 [Process and Use]

The present invention also relates to a process for preventing or reducing the production of odor material in a composition comprising:

(c) water; and

15 (a) at least one cinnamic acid derivative represented by the above chemical formula (I) wherein

the process comprises the step of

combining (b) at least one oil to which the (a) cinnamic acid derivative is soluble with the (a) cinnamic acid derivative and the (c) water in the composition.

20

The present invention also relates to a use of (b) at least one oil in a composition comprising:

(c) water; and

25 (a) at least one cinnamic acid derivative represented by the above chemical formula (I) in order to prevent or reduce the production of odor material in the composition, characterized in that the (a) cinnamic acid derivative is soluble in the (b) oil.

The process and use according to the present invention can prevent or reduce the production of odor material such as p-vinylguaiaicol in the composition which relates to the process and use, and therefore, they can provide a composition with less odor.

30

The above explanations regarding the (a) cinnamic acid derivative, the (b) oil to which the ingredient (a) is soluble and (c) water for the compositions according to the present invention can apply to those used in the above process and use according to the present invention.

35 The composition used in the use according to the composition may include any of the optional ingredients as explained above for the compositions according to the present invention.

EXAMPLES

40 The present invention will be described in a more detailed manner by way of examples. However, these examples should not be construed as limiting the scope of the present invention.

45 [Examples 1-8 and Comparative Examples 1-8]

[Preparation]

50 Each of the compositions according to Examples 1-8 and Comparative Examples 1-8 was prepared by mixing the ingredients shown in Tables 1 and 2. The numerical values for the amounts of the ingredients are all based on “% by weight” as active raw materials.

Table 1

	Ex. 1	Ex. 2	Ex. 3	Ex. 4	Ex. 5	Ex. 6	Comp. Ex. 1	Comp. Ex. 2	Comp. Ex. 3	Comp. Ex. 4	Comp. Ex. 5	Comp. Ex. 6
Ferulic Acid	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Isopropyl Lauroyl Sarcosinate (Eldew SL-205 by Ajinomoto) (LogP = 5.4)	5	7.5	10	5	7.5	10	-	-	-	-	-	-
Ethylhexyl Palmitate (LogP = 10.6)	-	-	-	-	-	-	5	7.5	10	5	7.5	10
Glyceryl Stearate (and) PEG-100 Stearate	1.45	1.45	1.45	-	-	-	1.45	1.45	1.45	-	-	-
Stearic Acid	1.2	1.2	1.2	-	-	-	1.2	1.2	1.2	-	-	-
Cetyl Alcohol	0.75	0.75	0.75	-	-	-	0.75	0.75	0.75	-	-	-
Butylene Glycol	5	5	5	5	5	5	5	5	5	5	5	5
Glycerin	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
Phenoxyethanol	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Caprylyl Glycol	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
Tetrasodium EDTA	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Xanthan Gum	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15
Polyacrylamide (and) C13-14 Isoparaffin (and) Laureth-7	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8
Acrylates/C10-30 Alkyl Acrylate Crosspolymer	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
Water	qsp 100	qsp 100	qsp 100	qsp 100	qsp 100	qsp 100	qsp 100	qsp 100	qsp 100	qsp 100	qsp 100	qsp 100
pH	4	4	4	4	4	4	4	4	4	4	4	4
Presence of Good Solvent	Yes	Yes	Yes	Yes	Yes	Yes	No	No	No	No	No	No
PVG (%)	0.074	0.055	0.045	0.045	0.036	0.029	0.099	0.106	0.106	0.084	0.097	0.100

Table 2

	Ex. 7	Ex. 8	Comp. Ex. 7	Comp. Ex. 8
Ferulic Acid	0.5	0.5	0.5	0.5
Bis-Ethoxydiglycol Cyclohexane 1,4-Dicarboxylate (LogP = 2.4)	10	10	-	-
Isopropyl Myristate (LogP = 7.7)	-	-	10	10
Glyceryl Stearate (and) PEG-100 Stearate	1.45	-	1.45	-
Stearic Acid	1.2	-	1.2	-
Cetyl Alcohol	0.75	-	0.75	-
Butylene Glycol	5	5	5	5
Glycerin	3.5	3.5	3.5	3.5
Phenoxyethanol	0.5	0.5	0.5	0.5
Caprylyl Glycol	0.3	0.3	0.3	0.3
Tetrasodium EDTA	0.1	0.1	0.1	0.1
Xanthan Gum	0.15	-	0.15	-
Polyacrylamide (and) C13-14 Isoparaffin (and) Laureth-7	0.8	-	0.8	-
Acrylates/C10-30 Alkyl Acrylate Crosspolymer	0.2	-	0.2	-
Water	qsp 100	qsp 100	qsp 100	qsp 100
pH	4	4	4	4
Presence of Good Solvent	Yes	Yes	No	No
PVG (%)	0.025	0.013	0.132	0.058

5 Tables 1 and 2 indicate the following information regarding the compositions according to Examples 1-8 and Comparative Examples 1-8.

- (1) The value of pH of the composition in the line of "pH"
 (2) Whether the composition includes a good solvent (isopropyl lauroyl sarcosinate or bis-ethoxydiglycol cyclohexane 1,4-dicarboxylate) for ferulic acid, as Yes or No, in the line of "Presence of Good Solvent"
 10

[Evaluation]

(PVG)

15 The amount (%) of p-vinylguaiacol (PVG) in each of the compositions according to Examples 1-8 and Comparative Examples 1-8 was measured by using a HPLC system (column: Inertsil ODS-3 (particle diameter 5 μm, length 150 mm*diameter 4.6mm, mobile phase materials: 0.2% acetic acid in water/acetonitrile (6/4), flow rate: 1 mL/mn, injected amount of the composition: 10 μm, and no gradient). The amount of PVG was determined as a ratio (with
 20 a unit of %) of the peak area for PVG with regard to the peak area for the composition.

The results of the measurements are shown in Tables 1 and 2.

Since PVG can cause odor, it is preferable that the amount of PVG in the composition be smaller.

5

The comparison between Example 1 and Comparative Example 1 will show that the amount of PVG in the composition according to Example 1 is smaller than that in the composition according to Comparative Example 1, and that the reduction in the amount of PVG can be attributed to the use of the good solvent (isopropyl lauroyl sarcosinate) for ferulic acid in the composition according to Example 1 instead of the poor solvent (ethylhexyl palmitate) in the composition according to Comparative Example 1.

10

The comparison between Example 2 and Comparative Example 2 will show that the amount of PVG in the composition according to Example 2 is smaller than that in the composition according to Comparative Example 2, and that the reduction in the amount of PVG can be attributed to the use of the good solvent (isopropyl lauroyl sarcosinate) for ferulic acid in the composition according to Example 2 instead of the poor solvent (ethylhexyl palmitate) in the composition according to Comparative Example 2.

15

It should be noted that the amount of PVG in the composition according to Example 2 is smaller than that in the composition according to Example 1. This can be attributed to the larger amount of the good solvent for ferulic acid in the composition according to Example 2 than the composition according to Example 1.

20

The comparison between Example 3 and Comparative Example 3 as well as the comparison between Example 7 and Comparative Example 7 will show that the amount of PVG in the composition according to each of Examples 3 and 7 is smaller than that in the composition according to each of Comparative Examples 3 and 7, and that the reduction in the amount of PVG can be attributed to the use of the good solvents (isopropyl lauroyl sarcosinate for Example 3 and bis-ethoxydiglycol cyclohexane 1,4-dicarboxylate for Example 7) for ferulic acid in the composition according to Examples 3 and 7 instead of the poor solvents (ethylhexyl palmitate for Comparative Example 3 and isopropyl myristate for Comparative Example 7) in the composition according to Comparative Examples 3 and 7.

25

30

It should be noted that the amount of PVG in the composition according to Example 3 is smaller than that in the composition according to Example 2. This can be attributed to the larger amount of the good solvent for ferulic acid in the composition according to Example 3 than the composition according to Example 2.

35

The comparison between Example 4 and Comparative Example 4 will show that the amount of PVG in the composition according to Example 4 is smaller than that in the composition according to Comparative Example 4, and that the reduction in the amount of PVG can be attributed to the use of the good solvent (isopropyl lauroyl sarcosinate) for ferulic acid in the composition according to Example 4 instead of the poor solvent (ethylhexyl palmitate) in the composition according to Comparative Example 4.

40

45

The comparison between Example 5 and Comparative Example 5 will show that the amount of PVG in the composition according to Example 5 is smaller than that in the composition according to Comparative Example 5, and that the reduction in the amount of PVG can be attributed to the use of the good solvent (isopropyl lauroyl sarcosinate) for ferulic acid in the

50

composition according to Example 5 instead of the poor solvent (ethylhexyl palmitate) in the composition according to Comparative Example 5.

5 It should be noted that the amount of PVG in the composition according to Example 5 is smaller than that in the composition according to Example 4. This can be attributed to the larger amount of the good solvent for ferulic acid in the composition according to Example 5 than the composition according to Example 4.

10 The comparison between Example 6 and Comparative Example 6 will show that the amount of PVG in the composition according to Example 6 is smaller than that in the composition according to Comparative Example 6, and that the reduction in the amount of PVG can be attributed to the use of the good solvent (isopropyl lauroyl sarcosinate) for ferulic acid in the composition according to Example 6 instead of the poor solvent (ethylhexyl palmitate) in the composition according to Comparative Example 6.

15 It should be noted that the amount of PVG in the composition according to Example 6 is smaller than that in the composition according to Example 5. This can be attributed to the larger amount of the good solvent for ferulic acid in the composition according to Example 6 than the composition according to Example 5.

20 The comparison between Example 8 and Comparative Example 8 will show that the amount of PVG in the composition according to Example 8 is smaller than that in the composition according to Comparative Example 8, and that the reduction in the amount of PVG can be attributed to the use of the good solvent (bis-ethoxydiglycol cyclohexane 1,4-dicarboxylate) for ferulic acid in the composition according to Example 8 instead of the poor solvent (isopropyl myristate) in the composition according to Comparative Example 8.

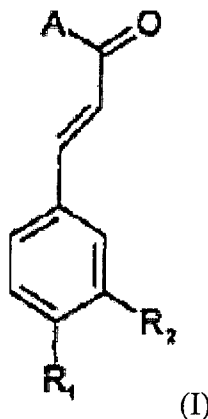
25 The compositions according to Examples 1-3 and 7 and Comparative Examples 1-3 and 7 include a surfactant (glyceryl stearate (and) PEG-100 stearate) and co-surfactants (stearic acid and cetyl alcohol), and they are in the form of an O/W emulsion.

30 On the other hand, the compositions according to Examples 4-6 and 8 and Comparative Examples 4-6 and 8 do not include the surfactant and the co-surfactants, and therefore, they are in the form of a bi-phase formulation.

35 Regardless of the difference in the type of compositions, i.e., O/W or bi-phase, the same trends can be observed in Examples 1-8 vs. Comparative Examples 1-8, respectively.

CLAIMS

1. A composition comprising:
 (a) at least one cinnamic acid derivative represented by the following chemical
 5 formula (I)



wherein

A is chosen from

an OR₃ group wherein R₃ is chosen from a hydrogen atom, a phytyl group, a benzyl group, a linear or branched C₁-C₁₈ alkyl group, a C₃-C₈ cycloalkyl group, a C₃-C₈ cycloalkyl-C₁-C₅ alkyl group, an alkali metal ion, an alkaline earth metal ion and an ammonium ion,

and

an NHR₄ group wherein R₄ is chosen from a hydrogen atom, a phytyl group, a benzyl group, and a linear or branched C₁-C₁₈ alkyl group, a C₃-C₈ cycloalkyl group, a C₃-C₈ cycloalkyl-C₁-C₅ alkyl group,

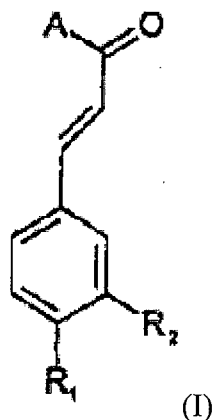
R₁ is chosen from a hydrogen atom, a hydroxyl group, a C₁-C₆ alkoxy group, a linear or branched C₁-C₁₈ alkyl group, a C₃-C₈ cycloalkyl group, a C₃-C₈ cycloalkyl-C₁-C₅ alkyl group, and

R₂ is chosen from a hydrogen atom, a hydroxyl group, and a C₁-C₆ alkoxy group;

- (b) at least one oil to which the (a) cinnamic acid derivative is soluble; and
 (c) water.

2. The composition according to Claim 1, wherein the (a) cinnamic acid derivative is ferulic acid.
3. The composition according to Claim 1 or 2, wherein the amount of the (a) cinnamic acid derivative(s) in the composition is from 0.001% to 20% by weight, preferably from 0.01% to 10% by weight, and more preferably from 0.1% to 1% by weight, relative to the total weight of the composition.
4. The composition according to any one of Claims 1 to 3, wherein the solubility of the (a) cinnamic acid derivative to the (b) oil is from 0.5% to 25%, preferably from 0.7% to 20%, and more preferably from 0.9% to 15%.
5. The composition according to any one of Claims 1 to 4, wherein the (b) oil is selected from polar oils.

6. The composition according to any one of Claims 1 to 5, wherein the (b) oil has a logP value of from 1.0 to 7.0, preferably from 1.5 to 6.5, and more preferably from 2.0 to 6.0.
- 5 7. The composition according to any one of Claims 1 to 6, wherein the (b) oil has at least two moieties selected from the group consisting of an amide bond, an ester bond, and mixtures thereof.
- 10 8. The composition according to any one of Claims 1 to 7, wherein the (b) oil is selected from the group consisting of isopropyl lauroyl sarcosinate, bis-ethoxydiglycol cyclohexane 1,4-dicarboxylate, and mixtures thereof.
- 15 9. The composition according to any one of Claims 1 to 8, wherein the amount of the (b) oil(s) in the composition is from 0.01% to 30% by weight, preferably from 0.1% to 25% by weight, and more preferably from 1% to 20% by weight, relative to the total weight of the composition.
- 20 10. The composition according to any one of Claims 1 to 9, wherein the amount of (c) water in the composition is from 50% to 95% by weight, preferably from 60% to 90% by weight, and more preferably from 70% to 87% by weight, relative to the total weight of the composition.
- 25 11. The composition according to any one of Claims 1 to 10, wherein the composition comprises (d) at least one surfactant.
- 30 12. The composition according to any one of Claims 1 to 11, wherein the pH of the composition is less than 7.0, preferably less than 6.0, and more preferably less than 5.0.
- 35 13. A cosmetic process for a keratin substance such as skin, comprising the step of: applying to the keratin substance the composition according to any one of Claims 1 to 12.
14. A process for preventing or reducing the production of odor material in a composition comprising:
- (c) water; and
 - (a) at least one cinnamic acid derivative represented by the following chemical formula (I)



wherein

A is chosen from

an OR_3 group wherein R_3 is chosen from a hydrogen atom, a phytyl group, a benzyl group, a linear or branched C_1 - C_{18} alkyl group, a C_3 - C_8 cycloalkyl group, a C_3 - C_8 cycloalkyl- C_1 - C_5 alkyl group, an alkali metal ion, an alkaline earth metal ion and an ammonium ion,

and

an NHR_4 group wherein R_4 is chosen from a hydrogen atom, a phytyl group, a benzyl group, and a linear or branched C_1 - C_{18} alkyl group, a C_3 - C_8 cycloalkyl group, a C_3 - C_8 cycloalkyl- C_1 - C_5 alkyl group,

R_1 is chosen from a hydrogen atom, a hydroxyl group, a C_1 - C_6 alkoxy group, a linear or branched C_1 - C_{18} alkyl group, a C_3 - C_8 cycloalkyl group, a C_3 - C_8 cycloalkyl- C_1 - C_5 alkyl group, and

R_2 is chosen from a hydrogen atom, a hydroxyl group, and a C_1 - C_6 alkoxy group,

wherein

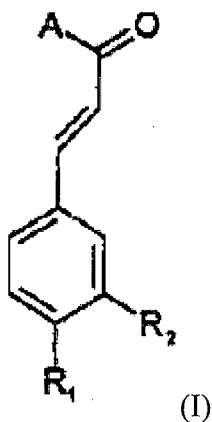
the process comprises the step of

combining (b) at least one oil to which the (a) cinnamic acid derivative is soluble with the (a) cinnamic acid derivative and the (c) water in the composition.

15. Use of (b) at least one oil in a composition comprising:

(c) water; and

(a) at least one cinnamic acid derivative represented by the following chemical formula (I)



wherein

A is chosen from

an OR₃ group wherein R₃ is chosen from a hydrogen atom, a phytyl group, a benzyl group, a linear or branched C₁-C₁₈ alkyl group, a C₃-C₈ cycloalkyl group, a C₃-C₈ cycloalkyl-C₁-C₅ alkyl group, an

5 and

an NHR₄ group wherein R₄ is chosen from a hydrogen atom, a phytyl group, a benzyl group, and a linear or branched C₁-C₁₈ alkyl group, a C₃-C₈ cycloalkyl group, a C₃-C₈ cycloalkyl-C₁-C₅ alkyl group,

10 R₁ is chosen from a hydrogen atom, a hydroxyl group, a C₁-C₆ alkoxy group, a linear or branched C₁-C₁₈ alkyl group, a C₃-C₈ cycloalkyl group, a C₃-C₈ cycloalkyl-C₁-C₅ alkyl group, and

R₂ is chosen from a hydrogen atom, a hydroxyl group, and a C₁-C₆ alkoxy group,

15 in order to prevent or reduce the production of odor material in the composition, characterized in that the (a) cinnamic acid derivative is soluble in the (b) oil.

INTERNATIONAL SEARCH REPORT

International application No
PCT/JP2019/048367

A. CLASSIFICATION OF SUBJECT MATTER
 INV. A61K8/36 A61K8/37 A61K8/44 A61Q17/04 A61Q19/02
 ADD.
 According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED
 Minimum documentation searched (classification system followed by classification symbols)
 A61K 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)
 EPO-Internal, WPI Data

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	DATABASE GNPD [Online] MINTEL; 21 November 2012 (2012-11-21), anonymous: "Translucent Whitening Cream", XP055673695, retrieved from www.gnpd.com Database accession no. 1936093 abstract	1-11,13, 15
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Further documents are listed in the continuation of Box C. See patent family annex.

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Date of the actual completion of the international search 5 March 2020	Date of mailing of the international search report 17/03/2020
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Name and mailing address of the ISA/ European Patent Office, P.B. 5818 Patentlaan 2 NL - 2280 HV Rijswijk Tel. (+31-70) 340-2040, Fax: (+31-70) 340-3016	Authorized officer Verrucci, Marinella
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INTERNATIONAL SEARCH REPORT

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