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(54) Title: RINSEABLE COMPOSITION COMPRISING EXFOLIANT PARTICLES

(57) Abstract: The present invention relates to a composition, especially a cosmetic composition, comprising at least: - hydrophobic silica aerogel particles having a specific surface area per unit mass (SM) ranging from 500 to 1500 m²/g, - at least one surfactant or a mixture of surfactants, and - exfoliant particles with a median size from 10 to 1500 µm.



RINSEABLE COMPOSITION COMPRISING EXFOLIANT PARTICLES

The present invention relates to a rinseable composition comprising exfoliant particles, and to the use of said composition in the cosmetics field, in particular for
5 skincare.

In the context of the invention, the term "rinseable composition" means a composition that is formulated to be applied to keratin materials, especially the skin, as a more or less thick coat, which may or may not be intended to be left to stand, and to be finally rinsed to remove it.

10 The present invention relates in particular to a rinseable cosmetic composition for topical application, particularly an exfoliant composition or a composition for scrubbing bodily and/or facial skin.

Numerous rinseable compositions exist, which are used especially for caring
15 for and/or treating keratin materials, in particular the skin, such as exfoliant compositions.

The purpose of exfoliant compositions is to remove, by mechanical friction action, the dead cells from the upper layers of the epidermis, so as to leave the skin smooth, to accelerate cell renewal of the skin and to improve the penetration of cosmetic active agents.

20 In general, it is desired for these compositions to be easy to apply to the skin, for them to be easy to rinse off, and for them to leave an impression of softness on the skin.

However, the exfoliant compositions of the prior art do not satisfactorily achieve all three of these properties.

In particular, the exfoliant compositions of the prior art are generally difficult
25 to rinse off.

Thus, it is sought to provide rinseable compositions, in particular exfoliant compositions, which have improved rinseability and improved ease of application.

Advantageously, it is also sought to provide rinseable compositions, in particular exfoliant compositions, which have improved rinseability, improved ease of
30 application, and which leave an impression of softness on the skin after rinsing.

Now, surprisingly, the inventors have found that the selection of particular exfoliant particles and their combination with specific ingredients makes it possible

precisely to improve the rinseability, the ease of application to the skin and also the impression of softness left on the skin, of a rinseable composition comprising said exfoliant particles.

5 Thus, according to a first aspect, the present invention relates to a composition, especially a cosmetic composition, comprising at least:

- hydrophobic silica aerogel particles,
- at least one surfactant or a mixture of surfactants, and
- exfoliant particles with a median size from 10 to 1500 μm .

10 In particular, according to a first aspect, the present invention relates to a composition, especially a cosmetic composition, comprising at least:

- hydrophobic silica aerogel particles having a specific surface area per unit mass (S_M) ranging from 500 to 1500 m^2/g ,
- at least one surfactant or a mixture of surfactants, and
- 15 - exfoliant particles with a median size from 10 to 1500 μm .

As demonstrated in the experimental section, the combination of the ingredients of the composition according to the invention gives rinseability, ease of application and also softness properties left on the skin after rinsing, which are not simultaneously found in the compositions of the prior art.

20 For the purposes of the invention, the term “skin” means the skin of the face, including the lips, the eyelids, the contour of the lips and the contour of the eyes, and/or bodily skin, especially of the hands and/or legs.

25 According to another aspect, the invention relates to the use of a cosmetic composition as defined above for caring for and/or cleaning, in particular for exfoliating, bodily and/or facial skin.

30 According to yet another aspect, the invention relates to the use of hydrophobic silica aerogel particles for improving the rinseability of a composition, especially a cosmetic composition, comprising said hydrophobic silica aerogel particles, at least one surfactant and exfoliant particles.

According to yet another aspect, the invention relates to a cosmetic process for treating bodily and/or facial skin, comprising a step of applying a cosmetic composition as defined above, and preferably a step of rinsing said composition, preferentially with water.

HYDROPHOBIC SILICA AEROGEL PARTICLES

As emerges from the examples below, the implementation of hydrophobic silica aerogel particles as absorbent fillers in a rinseable composition makes it possible advantageously to improve the rinseability, the ease of application on the skin and also the impression of softness left on the skin of said rinseable composition, which also comprises at least one surfactant and exfoliant particles.

Silica aerogels are porous materials obtained by replacing (by drying) the liquid component of a silica gel with air.

They are generally synthesized via a sol-gel process in a liquid medium and then dried, usually by extraction with a supercritical fluid, the one most commonly used being supercritical CO₂. Drying of this type makes it possible to avoid contraction of the pores and of the material. The sol-gel process and the various drying operations are described in detail in Brinker C.J. and Scherer G.W., *Sol-Gel Science*, New York, Academic Press, 1990.

Preferably, the hydrophobic silica aerogel particles used in the present invention have a specific surface area per unit mass (S_M) ranging from 500 to 1500 m²/g, preferably from 600 to 1200 m²/g and better still from 600 to 800 m²/g.

In particular, the hydrophobic silica aerogel particles used in the present invention have a specific surface area per unit mass (S_M) ranging from 500 to 1500 m²/g.

Preferably, the hydrophobic silica aerogel particles used in the present invention have a specific surface area per unit mass (S_M) ranging from 600 to 1200 m²/g and preferentially from 600 to 800 m²/g.

Preferably, the hydrophobic silica aerogel particles used in the present invention have a mean size expressed as the volume-mean diameter ($D[0.5]$) ranging from 1 to 1500 μm, better still from 1 to 1000 μm, preferably from 1 to 100 μm, in particular from 1 to 30 μm, more preferably from 5 to 25 μm, better still from 5 to 20 μm and even better still from 5 to 15 μm.

The specific surface area per unit mass may be determined by the nitrogen absorption method, known as the BET (Brunauer-Emmett-Teller) method, described in the

Journal of the American Chemical Society, vol. 60, page 309, February 1938 and corresponding to international standard ISO 5794/1 (annex D). The BET specific surface area corresponds to the total specific surface area of the particles under consideration.

The mean size of the silica aerogel particles may be measured by static light scattering using a commercial particle size analyzer such as the MasterSizer 2000 machine from Malvern. The data are processed on the basis of the Mie scattering theory. This theory, which is exact for isotropic particles, makes it possible to determine, in the case of non-spherical particles, an "effective" particle diameter. This theory is in particular described in the publication by Van de Hulst, H.C., Light Scattering by Small Particles, Chapters 9 and 10, Wiley, New York, 1957.

According to an advantageous embodiment, the hydrophobic silica aerogel particles used in the present invention have a specific surface area per unit mass (S_M) ranging from 600 to 800 m²/g and a mean size expressed as the volume-mean diameter ($D[0.5]$) ranging from 5 to 20 μm and even better still from even better from 5 to 15 μm.

The silica aerogel particles used in the present invention may advantageously have a tapped density ranging from 0.04 to 0.10 g/cm³ and preferably from 0.05 to 0.08 g/cm³.

In the context of the present invention, this density, known as the tapped density, may be assessed according to the following protocol:

40 g of powder are poured into a measuring cylinder; the measuring cylinder is then placed on a Stav 2003 machine from Stampf Volumeter; the measuring cylinder is then subjected to a series of 2500 tapping actions (this operation is repeated until the difference in volume between two consecutive tests is less than 2%); the final volume V_f of tapped powder is then measured directly on the measuring cylinder. The tapped density is determined by the ratio m/V_f , in this instance 40/ V_f (V_f being expressed in cm³ and m in g).

According to one embodiment, the hydrophobic silica aerogel particles used in the present invention have a specific surface area per unit volume (S_V) ranging from 5 to 60 m²/cm³, preferably from 10 to 50 m²/cm³ and better still from 15 to 40 m²/cm³.

The specific surface area per unit volume is given by the relationship: $S_V = S_M \times \rho$; where ρ is the tapped density, expressed in g/cm³, and S_M is the specific surface area per unit mass, expressed in m²/g, as defined above.

Preferably, the hydrophobic silica aerogel particles according to the invention have an oil-absorbing capacity, measured at the wet point, ranging from 5 to 18 ml/g, preferably from 6 to 15 ml/g and better still from 8 to 12 ml/g of particles.

The oil-absorbing capacity measured at the wet point, denoted W_p , corresponds to the amount of oil that needs to be added to 100 g of particles in order to obtain a homogeneous paste.

It is measured according to the "wet point" method or the method for determining the oil uptake of a powder, described in standard NF T 30-022. It corresponds to the amount of oil adsorbed onto the available surface of the powder and/or absorbed by the powder by measuring the wet point, described below:

An amount $m = 2$ g of powder is placed on a glass plate and then the oil (isononyl isononanoate) is added dropwise. After addition of 4 to 5 drops of oil to the powder, mixing is performed using a spatula, and addition of oil is continued until conglomerates of oil and powder have formed. From this point, the oil is added at the rate of one drop at a time and the mixture is subsequently triturated with the spatula. The addition of oil is stopped when a firm, smooth paste is obtained. This paste must be able to be spread over the glass plate without cracks or the formation of lumps. The volume V_s (expressed in ml) of oil used is then noted.

The oil uptake corresponds to the ratio V_s/m .

The aerogels used according to the present invention are aerogels of hydrophobic silica, preferably of silylated silica (INCI name: silica silylate).

The term "hydrophobic silica" means any silica whose surface is treated with silylating agents, for example halogenated silanes such as alkylchlorosilanes, siloxanes, in particular dimethylsiloxanes such as hexamethyldisiloxane, or silazanes, so as to functionalize the OH groups with silyl groups $Si-R_n$, for example trimethylsilyl groups.

As regards the preparation of hydrophobic silica aerogel particles surface-modified by silylation, reference may be made to US 7 470 725.

Use will be made in particular of silylated silica aerogel particles and especially aerogel particles of hydrophobic silica surface-modified with trimethylsilyl groups (trimethylsiloxyl silica).

As hydrophobic silica aerogels that may be used in the invention, examples that may be mentioned include the aerogel sold under the name VM-2260 (INCI name:

Silica silylate), by the company Dow Corning, the particles of which have an average size of about 1000 microns and a specific surface area per unit mass ranging from 600 to 800 m²/g.

Mention may also be made of the aerogels sold by Cabot under the references
5 Aerogel TLD 201, Aerogel OGD 201, Aerogel TLD 203, Enova® Aerogel MT 1100 and Enova Aerogel MT 1200.

Use will be made more particularly of the aerogel sold under the name VM-2270 (INCI name: Silica silylate) by the company Dow Corning, the particles of which have a mean size ranging from 5-15 microns and a specific surface area per unit mass
10 ranging from 600 to 800 m²/g.

The hydrophobic silica aerogel particles may be present in the composition according to the invention in a content ranging from 0.01% to 10% by weight, preferably from 0.05% to 5% by weight, preferentially from 0.1% to 5% by weight and advantageously from 0.5% to 2% by weight relative to the total weight of said
15 composition.

EXFOLIANT PARTICLES

The composition according to the invention comprises exfoliant particles with a median size from 10 to 1500 µm.

20 The term “exfoliant particles” or “scrubbing particles” means solid, abrasive particles which are capable, when they are applied to the skin in an exfoliant composition, of performing mechanical exfoliation (also known as scrubbing) of the dead cells from the upper layers of the epidermis.

In general, skin scrubbing is typically performed by applying an exfoliant
25 composition to the skin, massaging the skin covered with said composition, and then rinsing off said composition. The exfoliant particles then act by friction on the skin. The skin is thus smoothed out and the absorption of cosmetic active agents and skin renewal are promoted.

Exfoliant particles that may be used are exfoliant particles of mineral origin,
30 such as sands, rocks, perlite or clays.

Exfoliant particles that may also be used are exfoliant particles of plant origin, such as kernels, leaves, stems, algae, barks, dried fruit or roots.

Exfoliant particles that may also be used are exfoliant particles of organic origin, such as beads based on polyethylene or wax.

The term "median size" of the exfoliant particles means the median size expressed as the volume-median diameter (D[0.5]).

5 The median size of the exfoliant particles may be measured by static light scattering using a commercial particle size analyzer such as the MasterSizer 2000 machine from Malvern. The data are processed on the basis of the Mie scattering theory. This theory, which is exact for isotropic particles, makes it possible to determine, in the case of non-spherical particles, an "effective" particle diameter. This theory is in particular
10 described in the publication by Van de Hulst, H.C., Light Scattering by Small Particles, Chapters 9 and 10, Wiley, New York, 1957.

The exfoliant particles used in the composition of the invention have a median size of between 10 to 1500 μm , preferably from 25 to 1000 μm and preferentially from 100 to 500 μm .

15 Use may be made, for example of perlite beads or powder, such as those sold under the name Imercare 270P-Scrub or Imercare 400P-Scrub or Imercare 800P-Scrub by the company Imerys.

Use may also be made, for example, of polyethylene beads or powder, such as
20 those sold under the name Microthene 35 Mesh MN 711-20 or Microthene MN 710-20 by the company Equistar or Cerapure 106C Coathylene NB 6081 from the company Shamrock Technologies Dupont or Flobeads CL5007 from the company Sumitomo Seika; polyvinyl chloride powder; pumice (INCI name: pumice), for instance Ponce 3/B from Eyraud; ground shells of fruit kernels, such as ground apricot kernels or walnut shells;
25 sawdust, wood flour, cork flour; glass beads; alumina (aluminum oxide) (INCI name: alumina), sugar crystals (sucrose); beads that melt when applied to the skin, for instance the spheres based on mannitol and cellulose sold under the name Unispheres by the company Induchem, agar-based capsules sold under the name Primasponge by the company Cognis, and spheres based on jojoba esters sold by the company Desert Whale;
30 and mixtures thereof.

The exfoliant particles may be present in the composition according to the invention in a content ranging from 0.01% to 50% by weight, preferably from 0.1% to 25%

by weight, preferentially from 0.5% to 15% by weight and advantageously from 1% to 10% by weight relative to the total weight of said composition.

Within the composition of the invention, the mass ratio of the amount of hydrophobic silica aerogel particles to the amount of exfoliant particles is generally
5 between 1/10 to 10/1 and preferably from 1/5 to 5/1.

Preferably, the exfoliant particles are particles of perlite, sugar, or fruit kernel shells, in particular perlite and sugar particles.

SURFACTANTS

10 The composition according to the invention comprises at least one surfactant or a mixture of surfactants.

The total amount of surfactant(s) present in the composition preferably ranges from 0.1% and 50% by weight, preferentially from 1% to 30% by weight, relative to the total weight of the composition, more particularly from 2.5% to 15% and better still from
15 5% to 10% by weight.

Within the composition of the invention, the mass ratio of the amount of hydrophobic silica aerogel particles to the total amount of surfactant(s) is generally between 1/20 to 1/1 and preferably from 1/10 to 1/5.

According to one embodiment, the composition according to the invention
20 comprises one or more surfactants chosen from nonionic, amphoteric and anionic surfactants.

According to one embodiment, the composition of the invention comprises at least one nonionic surfactant.

25 The nonionic surfactants are preferably chosen from:

- esters of fatty acids, especially of C₈-C₂₄, and of sugars and fatty alcohol ethers of sugars, especially of C₈-C₂₄,
- oxyalkylenated glycerol ethers, in particular oxyethylenated and/or oxypropylenated glycerol ethers, which may comprise from 5 to 100 oxyethylene and/or
30 oxypropylene units, preferably 10 to 80 oxyethylene and/or oxypropylene units;
- oxyalkylenated alcohols, in particular oxyethylenated and/or oxypropylenated alcohols, which may comprise from 5 to 100 oxyethylene and/or oxypropylene units,

preferably from 10 to 100 oxyethylene units, in particular ethoxylated C₈-C₂₄ and preferably C₁₂-C₁₈ fatty alcohols such as ethoxylated stearyl alcohol comprising 20 oxyethylene units (CTFA name: Steareth-20) such as Brij 78 sold by the company Uniqema, cetyl alcohol ethoxylated with 20 oxyethylene groups (CTFA name: Ceteth-20),
5 cetearyl alcohol ethoxylated with 30 oxyethylene units (CTFA name: Ceteareth-30), and the mixture of C₁₂-C₁₅ fatty alcohols comprising 7 oxyethylene units (CTFA name: C₁₂₋₁₅ Pareth-7), for instance the product sold under the name Neodol 25-7® by Shell Chemicals;

- esters of a fatty acid, especially of a C₈-C₂₄ and preferably C₁₆-C₂₂ fatty acid, and of polyethylene glycol (or PEG) (which may comprise from 5 to 100 oxyethylene units, preferably from 10 to 80 oxyethylene units), such as PEG-50 stearate and PEG-40
10 monostearate sold under the name Myrj 52P® by the company Uniqema, or PEG-75 stearate;

- esters of a fatty acid, especially a C₈-C₂₄ and preferably C₁₆-C₂₂ fatty acid, and of oxyalkylenated glycerol ethers, which are in particular oxyethylenated and/or
15 oxypropylenated (which may comprise from 5 to 100 oxyethylene and/or oxypropylene units), for instance glyceryl monostearate polyoxyethylenated with 200 oxyethylene units, sold under the name Simulsol 220 TM® by the company SEPPIC; glyceryl stearate polyoxyethylenated with 30 oxyethylene units, for instance the product Tagat S® sold by the company Goldschmidt, glyceryl oleate polyoxyethylenated with 30 oxyethylene units,
20 for instance the product Tagat O® sold by the company Goldschmidt, glyceryl cocoate polyoxyethylenated with 30 oxyethylene units, for instance the product Varionic LI 13® sold by the company Sherex, glyceryl isostearate polyoxyethylenated with 30 oxyethylene units, for instance the product Tagat L® sold by the company Goldschmidt, and glyceryl laurate polyoxyethylenated with 30 oxyethylene units, for instance the product Tagat I®
25 from the company Goldschmidt;

- esters of a fatty acid, especially a C₈-C₂₄ and preferably C₁₆-C₂₂ fatty acid, and of sorbitol, which are advantageously oxyalkylenated, in particular oxyethylenated and/or oxypropylenated (which may comprise from 5 to 100 oxyethylene and/or oxypropylene units), for instance polysorbate 60 sold especially under the name Tween
30 60® by the company Uniqema and more particularly sorbitan monolaurate oxyethylenated with 20 mol of ethylene oxide (INCI name: Polysorbate-20) sold especially under the name Tween 20® by the company Uniqema;

- and mixtures thereof.

The fatty acid esters of sugars that may be used as nonionic surfactant above may preferably be solid at a temperature of less than or equal to 45°C and may be chosen in particular from the group comprising esters or mixtures of esters of C₈-C₂₂ fatty acids and of sucrose, maltose, glucose or fructose, and esters or mixtures of esters of C₁₄-C₂₂ fatty acids and of methylglucose.

As examples of esters or mixtures of esters of fatty acid and of sucrose, maltose, glucose or fructose, mention may be made of sucrose monostearate, sucrose distearate and sucrose tristearate and mixtures thereof, such as the products sold by the company Croda under the name Crodesta F50, F70, F110 and F160; and an example of esters or mixtures of esters of fatty acid and of methylglucose that may be mentioned is methylglucose-polyglyceryl-3 distearate, sold by the company Goldschmidt under the name Tego-Care 450. Mention may also be made of glucose or maltose monoesters such as methyl-o-hexadecanoyl-6-D-glucoside and o-hexadecanoyl-6-D-maltoside.

The fatty alcohol ethers, especially C₈-C₂₄, and of sugars, that may be used as nonionic surfactant above may be solid at a temperature of less than or equal to 45°C and may be chosen in particular from the group comprising ethers or mixtures of ethers of C₈-C₂₂ fatty alcohols and of glucose, maltose, sucrose or fructose, and ethers or mixtures of ethers of a C₁₄-C₂₂ fatty alcohol and of methylglucose. These are in particular alkylpolyglucosides.

The C₈-C₂₂ or C₁₄-C₂₂ fatty alcohols forming the fatty acid unit of the ethers that may be used in the nanoemulsion of the invention comprise a saturated or unsaturated linear alkyl chain containing, respectively, from 8 to 22 or from 14 to 22 carbon atoms. The fatty acid unit of the ethers may be chosen in particular from decyl, cetyl, behenyl, arachidyl, stearyl, palmityl, myristyl, lauryl, capryl and hexadecanoyl units, and mixtures thereof such as cetearyl.

As examples of fatty alcohol ethers of sugars, mention may be made of (C₈-C₂₂)alkylpolyglucosides such as decyl glucoside and lauryl glucoside, sold, for example, by the company Henkel under the respective names Plantaren 2000 and Plantaren 1200,

cetostearyl glucoside optionally as a mixture with cetostearyl alcohol, sold, for example, under the name Montanov 68 by the company SEPPIC, under the name Tego-Care CG90 by the company Goldschmidt and under the name Emulgade KE3302 by the company Henkel, and also arachidyl glucoside, for example in the form of a mixture of arachidyl alcohol and behenyl alcohol and arachidyl glucoside, sold under the name Montanov 202 by the company SEPPIC.

The surfactant used is more particularly sucrose monostearate, sucrose distearate or sucrose tristearate and mixtures thereof, methyl glucose-polyglyceryl-3 distearate and (C8-C22)alkylpolyglucosides.

The fatty acid esters of glycerol that may be used as nonionic surfactant above, which are solid at a temperature of less than or equal to 45°C, may be chosen in particular from the group comprising esters formed from at least one acid comprising a saturated linear alkyl chain containing from 12 to 22 carbon atoms and from 1 to 12 glycerol units. One or more of these fatty acid esters of glycerol may be used in the present invention.

These esters may be chosen in particular from glyceryl stearates, behenates, arachidates and palmitates, and mixtures thereof. Glyceryl stearates and palmitates are preferably used.

As examples of surfactants that may be used in the present invention, mention may be made of decaglyceryl monostearate, distearate, tristearate and pentastearate (CTFA names: polyglyceryl-10 stearate, polyglyceryl-10 distearate, polyglyceryl-10 tristearate, polyglyceryl-10 pentastearate), such as the products sold under the respective names Nikkol Decaglyn 1 S, 2 S, 3 S and 5 S by the company Nikko, and diglyceryl monostearate (CTFA name: polyglyceryl-2 stearate), such as the product sold by the company Nikko under the name Nikkol DGMS.

The fatty acid esters of sorbitan that may be used as nonionic surfactant above may be chosen from the group comprising esters of a C₁₆-C₂₂ fatty acid and of sorbitan and oxyethylenated esters of a C₁₆-C₂₂ fatty acid and of sorbitan. They are formed from at least one fatty acid comprising at least one saturated linear alkyl chain containing, respectively, from 16 to 22 carbon atoms and from sorbitol or ethoxylated sorbitol. The oxyethylenated

esters generally comprise from 2 to 100 ethylene glycol units and preferably from 4 to 40 ethylene oxide (EO) units.

These esters may be chosen in particular from stearates, behenates, arachidates and palmitates, and mixtures thereof. Stearates and palmitates are preferably used.

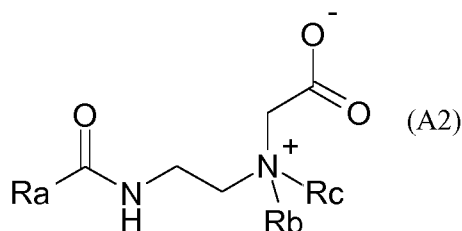
The composition according to the invention comprises the nonionic surfactant(s) in an amount preferably ranging from 0.1% to 20% by weight and especially from 1% to 10% by weight relative to the total weight of the composition.

According to one embodiment, the composition of the invention comprises at least one amphoteric surfactant, preferably a surfactant of betaine type.

The amphoteric (or zwitterionic) surfactants are preferably chosen from optionally quaternized secondary or tertiary aliphatic amine derivatives containing at least one anionic group, for instance a carboxylate, sulfonate, sulfate, phosphate or phosphonate group, and in which the aliphatic group or at least one of the aliphatic groups is a linear or branched chain comprising from 8 to 22 carbon atoms.

Mention may be made in particular of (C₈-C₂₀)alkylbetaines, sulfobetaines, (C₈-C₂₀)alkylamido(C₁-C₆)alkylbetaines such as cocoamidopropylbetaine, and (C₈-C₂₀)alkylamido(C₁-C₆)alkylsulfobetaines.

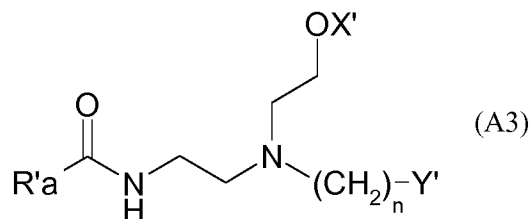
Among the optionally quaternized secondary or tertiary aliphatic amine derivatives that may be used, mention may also be made of the products having the following respective structures (A2) and (A3):



in which:

- Ra represents a C₁₀-C₃₀ alkyl or alkenyl group derived from an acid of formula Ra-COOH which is preferably present in hydrolyzed coconut oil, or a heptyl, nonyl or undecyl group;

- Rb represents a β -hydroxyethyl group; and
- Rc represents a carboxymethyl group;



in which:

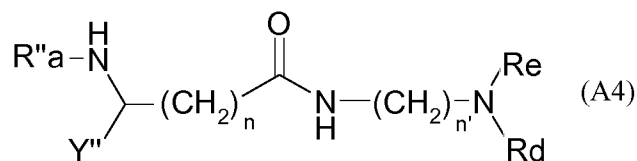
- Ra' represents a C₁₀-C₃₀ alkyl or alkenyl group derived from an acid of formula Ra'COOH, which is preferably present in coconut oil or in hydrolyzed linseed oil, or an alkyl group, especially a C₁₇ group and its iso form, or an unsaturated C₁₇ group.
- X' represents a group chosen from -CH₂-COOH, CH₂-COOZ', -CH₂CH₂-COOH and -CH₂CH₂-COOZ', and a hydrogen atom,
- Y' represents a group chosen from -COOH, -COOZ', -CH₂-CHOH-SO₃H and -CH₂-CHOHSO₃Z',
- n is equal to 1 or 2, and
- Z' represents an ion derived from an alkali metal or alkaline-earth metal, such as sodium, potassium or magnesium; an ammonium ion; or an ion derived from an organic amine and especially from an amino alcohol, such as monoethanolamine, diethanolamine and triethanolamine, monoisopropanolamine, diisopropanolamine or triisopropanolamine, 2-amino-2-methyl-1-propanol, 2-amino-2-methyl-1,3-propanediol and tris(hydroxymethyl)aminomethane.

The compounds corresponding to formula (A3) are preferred.

These compounds are also classified in the CTFA dictionary, 5th edition, 1993, under the names disodium cocoamphodiacetate, disodium lauroamphodiacetate, disodium caprylamphodiacetate, disodium capryloamphodiacetate, disodium cocoamphodipropionate, disodium lauroamphodipropionate, disodium caprylamphodipropionate, disodium capryloamphodipropionate, lauroamphodipropionic acid and cocoamphodipropionic acid.

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

Use may also be made of the compounds of formula (A4):



in which:

- Ra'' represents a C₁₀-C₃₀ alkyl or alkenyl group derived from an acid of formula Ra''-COOH which is preferably present in coconut oil or in hydrolyzed linseed oil,
- Y'' represents a group chosen from -COOH, -C(O)OZ'', -CH₂-CH(OH)-SO₃H and -CH₂-CH(OH)-SO₃-Z'', in which Z'' represents a cationic counterion derived from an alkali metal or alkaline-earth metal, such as sodium, an ammonium ion or an ion derived from an organic amine,
- Rd and Re represent, independently of each other, a C₁-C₄ alkyl or hydroxyalkyl radical, and
- n and n', independently of each other, denote an integer ranging from 1 to 3.

Mention may be made especially of the compound classified in the CTFA dictionary under the name sodium diethylaminopropyl cocoaspartamide and sold by the company Chimex under the name Chimexane HB.

Preferentially, the amphoteric surfactants are chosen from (C₈-C₂₀)alkylbetaines, (C₈-C₂₀)alkylamido(C₁-C₆)alkylbetaines and (C₈-C₂₀)alkyl amphodiacetates, and also the sodium salt of diethylaminopropyl laurylamino succinamate, and mixtures thereof.

Preferentially, the amphoteric or zwitterionic surfactants are chosen, alone or as a mixture, from cocoylamidopropyl betaine, cocoyl betaine and cocoamphodiacetate.

The composition according to the invention comprises the amphoteric or zwitterionic surfactant(s) in an amount preferably ranging from 0.1% to 30% by weight, especially from 0.5% to 20% by weight and preferably from 1% to 10% by weight, relative to the total weight of the composition.

5

According to one embodiment, the composition of the invention comprises at least one anionic surfactant.

The anionic surfactants are preferably chosen from surfactants comprising, as ionic or ionizable groups, only anionic groups.

10

These anionic groups are preferably chosen from CO_2H , CO_2^- , SO_3H , SO_3^- , OSO_3H , OSO_3^- , $-\text{H}_2\text{PO}_3$, $-\text{HPO}_3^-$, $-\text{PO}_3^{2-}$, $-\text{H}_2\text{PO}_2$, $=\text{HPO}_2$, $-\text{HPO}_2^-$, $=\text{PO}_2^-$, $=\text{POH}$ and $=\text{PO}^-$ groups.

15

Among the anionic surfactants that may be used in the composition according to the invention, mention may be made of alkyl sulfates, alkyl ether sulfates, alkylamido ether sulfates, alkylaryl polyether sulfates, monoglyceride sulfates, alkylsulfonates, alkylamidesulfonates, alkylarylsulfonates, α -olefin sulfonates, paraffin sulfonates, alkyl sulfosuccinates, alkyl ether sulfosuccinates, alkylamide sulfosuccinates, alkyl sulfoacetates, acylsarcosinates, acylglutamates, alkyl ether carboxylates, alkyl sulfosuccinamates, acylisethionates and N-acyltaurates, polyglycoside polycarboxylic acid and alkyl monoester salts, acyl lactylates, salts of D-galactoside uronic acids, salts of alkyl ether carboxylic acids, salts of alkylaryl ether carboxylic acids, salts of alkylamido ether carboxylic acids; and also the corresponding non-salified forms of all these compounds; the alkyl and acyl groups of all these compounds comprising from 6 to 24 carbon atoms and the aryl group denoting a phenyl group.

20

These compounds may be oxyethylenated and then preferably comprise from 1 to 50 ethylene oxide units and better still from 1 to 10 ethylene oxide units.

25

The salts of $\text{C}_6\text{-C}_{24}$ alkyl monoesters of polyglycoside-polycarboxylic acids may be chosen from $\text{C}_6\text{-C}_{24}$ alkyl polyglycoside-citrates, $\text{C}_6\text{-C}_{24}$ alkyl polyglycoside-tartrates and $\text{C}_6\text{-C}_{24}$ alkyl polyglycoside-sulfosuccinates.

The acyllactylates preferably contain an acyl group comprising from 8 to 20 carbon atoms.

When the anionic surfactant is in salt form, said salt may be chosen from alkali metal salts, such as the sodium or potassium salt, ammonium salts, amine salts and in particular amino alcohol salts, and alkaline-earth metal salts, such as the magnesium salt.

5 Examples of amino alcohol salts that may be mentioned include monoethanolamine, diethanolamine and triethanolamine salts, monoisopropanolamine, diisopropanolamine or triisopropanolamine salts, 2-amino-2-methyl-1-propanol salts, 2-amino-2-methyl-1,3-propanediol salts and tris(hydroxymethyl)aminomethane salts.

Alkali metal or alkaline-earth metal salts and in particular the sodium or magnesium salts are preferably used.

10 The preferred anionic surfactants are chosen from (C₆-C₂₄)alkyl sulfates, (C₆-C₂₄)alkyl ether sulfates, acylglutamates and (C₆-C₂₄)alkyl ether carboxylates, especially in the form of alkali metal, ammonium, amino alcohol and alkaline-earth metal salts, or a mixture of these compounds.

15 In particular, it is preferred to use (C₁₂-C₂₀)alkyl sulfates, (C₁₂-C₂₀)alkyl ether sulfates comprising from 2 to 20 ethylene oxide units, acylglutamates and (C₆-C₂₄)alkyl ether carboxylates, especially in the form of alkali metal, ammonium, amino alcohol and alkaline-earth metal salts, or a mixture of these compounds.

20 The composition according to the invention preferably comprises the anionic surfactant(s) in an amount of between 0.1% and 20% by weight, especially between 0.1% and 10% by weight or even between 0.5% and 5% by weight, relative to the total weight of the composition.

25 According to a preferred embodiment, the composition according to the invention comprises:

- from 0.01% to 10% by weight, preferably from 0.1% to 5% by weight, of hydrophobic silica aerogel particles, which are preferentially surface-modified with trimethylsilyl groups,
 - from 0.01% to 50% by weight, preferably from 0.1% to 25% by weight, preferentially from 0.5% to 15% by weight, advantageously from 1% to 10% by weight, of exfoliant particles with a median size ranging from
- 30

10 to 1500 μm , preferentially from 25 to 1000 μm , advantageously from 100 to 500 μm , and
- from 0.1% to 20% by weight of surfactant(s).

5 In general, since the composition according to the invention is intended for topical application to the skin, it also comprises, as support, a physiologically acceptable medium.

For the purposes of the present invention, the term "physiologically acceptable medium" means a medium that is compatible with the skin.

10 Thus, the physiologically acceptable medium is especially a cosmetically acceptable medium, i.e. a medium that is compatible with keratin materials such as the skin of the face or of the body and the lips, the hair, the eyelashes, the eyebrows and the nails.

The cosmetically acceptable medium according to the invention may comprise a fatty phase, an aqueous phase, and/or additives.

15 The composition according to the invention may be in any presentation form conventionally used, and especially in the form of an aqueous, alcoholic or aqueous-alcoholic, or oily solution or suspension; a solution or a dispersion of the lotion or serum type; an emulsion, in particular of liquid or semi-liquid consistency, of the O/W, W/O or multiple type; a suspension or emulsion of soft consistency of cream (O/W) or (W/O) type;
20 an aqueous or anhydrous gel, or any other cosmetic form.

The composition according to the invention may be aqueous or anhydrous.

According to one embodiment, the composition is aqueous and then comprises water at a concentration preferably ranging from 5% to 98% by weight, especially from 20% to 95% by weight and advantageously from 40% to 90% by weight, relative to the
25 total weight of the composition.

The pH of the composition, if it is aqueous, may be acidic, neutral or alkaline.

Preferably, the composition has a pH from 2 to 11, especially from 3 to 9, or even from 3 to 7.

According to another embodiment, the composition is free of water
30 (anhydrous).

According to this embodiment, the composition preferably comprises at least one organic solvent and/or at least one oil, preferably in a content of from 20% to 90% by weight relative to the total weight of the composition.

5 The composition may also comprise one or more organic solvents that are liquid at 25°C and 1 atm., which are especially water-soluble, such as C₂-C₇ alcohols.

Mention may be made especially of C₂-C₇ aliphatic or aromatic monoalcohols, C₃-C₇ glycols; C₃-C₇ diols and diol ethers; C₃-C₇ polyols and polyol ethers, which may thus be used alone or as a mixture with water.

10 Advantageously, the organic solvent may be chosen from ethanol, isopropanol, benzyl alcohol, dipropylene glycol, 1,3-propanediol, propylene glycol, pentanediol and hexylene glycol, and mixtures thereof.

The composition according to the invention may also comprise at least one common cosmetic ingredient, other than the compounds of the invention, such as cosmetic
15 active agents; plant, mineral, animal or synthetic oils; solid fatty substances and especially waxes, C₈-C₄₀ esters and C₈-C₄₀ acids; C₈-C₄₀ alcohols; moisturizers; antioxidants; chelating agents; reducing agents; nacreous agents and opacifiers; plasticizers or coalescers; hydroxy acids; pigments; fillers other than aerogels; silicones and in particular polydimethylsiloxanes (PDMS); polymeric or non-polymeric thickeners; gelling agents
20 such as cellulose derivatives and carbomers; emulsifiers; fragrances; preserving agents; basifying or acidifying agents; silanes; crosslinking agents such as polyphenols, aldehydes and DHA.

The composition can, of course, comprise several cosmetic ingredients appearing in the above list.

25 Depending on their nature and the intended use of the composition, the standard cosmetic ingredients may be present in standard amounts, which may be readily determined by a person skilled in the art and which may generally be, for each ingredient, from 0.01% to 80% by weight.

30 The oils may be preferentially present in a proportion of from 0.01% to 80% by weight, especially from 0.02% to 40% by weight or even from 0.5% to 20% by weight, relative to the total weight of the composition.

The composition according to the invention may especially comprise at least one polar oil, at least one silicone oil, which is preferably nonvolatile, or a mixture thereof.

The term "polar oil" 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, which is strictly greater than 0. The solubility parameters δ_D and δ_p are defined according to the Hansen classification. For example, these polar oils may be chosen from esters, triglycerides and ethers.

The definition and calculation of the solubility parameters in the Hansen three-dimensional solubility space are described in the article 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;

- 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 $\delta_a = (\delta_p^2 + \delta_h^2)^{1/2}$.

The parameters δ_D , δ_p , δ_h and δ_a are expressed in $(\text{J}/\text{cm}^3)^{1/2}$.

These polar oils may be of plant, mineral or synthetic origin. The polar oils will preferably be chosen from nonvolatile polar hydrocarbon-based oils.

The term "polar hydrocarbon-based oil" means a polar oil formed essentially from, or even constituted of, 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.

The term "nonvolatile oil" means an oil that remains on the skin or the keratin fiber at room temperature and atmospheric pressure for at least several hours, and that especially has a vapor pressure of less than 10^{-3} mmHg (0.13 Pa).

The polar oil may be chosen from hydrocarbon-based polar oils of plant origin such as phytostearyl esters, such as phytostearyl oleate, phytostearyl isostearate and lauroyl/octyldodecyl/phytostearyl glutamate (Ajinomoto, Eldew PS203), esters of fatty alcohols and of fatty acids, the fatty acids and fatty alcohols of which may in particular

have chain lengths ranging from C8 to C36 and especially from C18 to C36, these acids and alcohols possibly being linear or branched, saturated or unsaturated, and more particularly unsaturated especially such as jojoba oil, triglycerides consisting of fatty acid esters of glycerol, in particular 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, 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 Stéarineries Dubois or those sold under the names Miglyol 810®, 812® and 818® by the company Dynamit Nobel.

The polar oil may also be chosen from hydrocarbon-based polar oils of mineral or synthetic origin, for instance:

- synthetic ethers containing from 10 to 40 carbon atoms;
- synthetic esters, for instance oils of formula R_1COOR_2 in which R_1 represents a linear or branched fatty acid residue comprising from 1 to 40 carbon atoms and R_2 represents a hydrocarbon-based chain that is especially branched, containing from 1 to 40 carbon atoms, provided that $R_1 + R_2 \geq 10$.

The esters may be chosen especially from esters especially of fatty acids, for instance:

- dicaprylyl carbonate (Cetiol CC from Cognis), cetostearyl octanoate, isopropyl alcohol esters, such as isopropyl myristate, isopropyl palmitate, ethyl palmitate, 2-ethylhexyl palmitate, isopropyl stearate, isopropyl isostearate, isostearyl isostearate, octyl stearate, hydroxylated esters, for instance isostearyl lactate, octyl hydroxystearate, 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, 2-ethylhexyl palmitate, alkyl benzoates, polyethylene glycol diheptanoate, propylene glycol 2-diethylhexanoate, and mixtures thereof, C12-C15 alcohol benzoates, hexyl laurate,

neopentanoic acid esters, for instance isodecyl neopentanoate, isotridecyl neopentanoate, isostearyl neopentanoate, octyldodecyl neopentanoate, isononanoic acid esters, for instance isononyl isononanoate, isotridecyl isononanoate, octyl isononanoate, hydroxylated esters, for instance isostearyl lactate and diisostearyl malate;

5 - polyol esters and pentaerythritol esters, for instance dipentaerythrityl tetrahydroxystearate/tetraisostearate; and

 - esters of diol dimers and of diacid dimers, such as Lusplan DD-DA5® and Lusplan DD-DA7® sold by the company Nippon Fine Chemical and described in patent application FR 03/02809.

10 The polar oil may also be chosen from:

 - fatty alcohols that are liquid at room temperature, with a branched and/or unsaturated carbon-based chain containing from 12 to 26 carbon atoms, for instance 2-octyldodecanol, isostearyl alcohol, isocetyl alcohol, oleyl alcohol, 2-hexyldecanol, 2-butyloctanol and 2-undecyl-pentadecanol;

15 - higher fatty acids such as oleic acid, linoleic acid and linolenic acid, and mixtures thereof; and

 - dialkyl carbonates, the two alkyl chains possibly being identical or different, such as the dicaprylyl carbonate sold under the name Cetiol CC® by Cognis.

 The nonvolatile silicone oils may be chosen from nonvolatile
20 polydimethylsiloxanes (PDMSs), polydimethylsiloxanes comprising alkyl or alkoxy groups that are pendent and/or at the end of a silicone chain, these groups each containing from 2 to 24 carbon atoms, phenyl silicones, for instance phenyl trimethicones, phenyl dimethicones, phenyltrimethylsiloxydiphenylsiloxanes, diphenyl dimethicones, diphenylmethyldiphenyltrisiloxanes and 2-phenylethyl trimethylsiloxysilicates, and
25 dimethicones or phenyl trimethicones with a viscosity of less than or equal to 100 cSt and preferably greater than 6 cSt, and mixtures thereof.

 The polydialkylsiloxanes may mainly be polydimethylsiloxanes comprising trimethylsilyl end groups, and polydimethylsiloxanes comprising dimethylsilanol end groups, known under the name dimethiconol (CTFA), and preferably
30 polydimethylsiloxanes comprising trimethylsilyl end groups.

The composition may also comprise one or more solid fatty substances, and in particular one or more fatty alcohols, fatty esters and/or fatty acids, other than the above oils, containing from 8 to 40 carbon atoms. These solid fatty substances may preferentially be present in a proportion of from 0.01% to 30% by weight and especially from 0.1% to 20% by weight relative to the total weight of the composition.

Mention may especially be made of C₁₂-C₃₂, especially C₁₂-C₂₆, linear-chain fatty alcohols, and in particular cetyl alcohol, stearyl alcohol, cetylstearyl alcohol and behenyl alcohol.

Mention may also be made of C₁₆-C₄₀ linear-chain or branched-chain fatty acids, and especially 18-methyleicosanoic acid, coconut oil or hydrogenated coconut oil acids; stearic acid, lauric acid, palmitic acid and oleic acid, behenic acid, and mixtures thereof.

Preferably, the fatty acids are not salified.

Mention may also be made of the linear-chain fatty esters, comprising in total between 8 and 40 carbon atoms, such as myristyl, cetyl or stearyl myristates, palmitates and stearates, alone or as a mixture.

Those skilled in the art will take care to choose the ingredients included in the composition, and also the amounts thereof, such that they do not harm the properties of the compositions of the present invention.

According to a preferred embodiment, the composition according to the invention is a rinseable cosmetic composition intended to be applied to the skin and then rinsed off, preferably with water.

The composition according to the invention may be in the form of a product for caring for and/or cleansing bodily or facial skin or the lips, preferably in the form of an exfoliant or scrubbing composition for bodily or facial skin.

It may especially find a particularly advantageous application in the field of caring for and/or cleansing, in particular for exfoliating, bodily and/or facial skin.

A cosmetic composition according to the invention may especially be in the form of a face and/or body mask, a face and/or body scrub, a shower gel, an exfoliant cream, an exfoliant fluid or a scrubbing milk.

According to the invention, a cosmetic process for treating bodily and/or facial skin comprises a step of applying a cosmetic composition according to the invention, and preferably a step of rinsing said composition, preferentially with water.

5 The amount of composition to be applied to the skin may be determined as a function of the area to be treated and of the desired intensity of the treatment.

During the application, the composition is advantageously massaged on the skin so that the exfoliant particles perform exfoliation (or scrubbing) of the skin by friction on the upper layers of the epidermis. The massaging of the skin may last from 1 to 10 minutes.

The application step, generally comprising the massaging, may last from 1 minute to 1 hour, the composition possibly being left in contact with the skin as in the case of a mask.

On conclusion of the application, the composition is generally rinsed off,
15 typically with water when the composition is aqueous, or is wiped off.

The properties of the composition of the invention will now be illustrated in the examples that follow, which are not limiting on the scope of the invention.

20 **EXAMPLES**

Example 1

Five formulations were prepared with five types of absorbent fillers, namely Expancel for Formulation 1 (composition outside the invention), Aerosil R972 for Formulation A (composition outside the invention), Cab-O-Sil TS530 for Formulation B (composition outside the invention), Cab-O-Sil TS720 for Formulation C (composition outside the invention) and Aerogel for Formulation 2 (composition according to the invention).

Each of the formulations was prepared by mixing the ingredients of phase A with heating to 75°C and homogenizing until dissolved. The heating was stopped and the ingredient of phase A2 was added. Next, the ingredients of phase B1 were introduced, along with that of phase B2. The mixture obtained was stirred until a fine emulsion was

obtained. The temperature of the emulsion was reduced to 45°C and the ingredients of phase C1 were added. The mixture obtained was stirred until a smooth, homogeneous mixture was obtained. The ingredients of phases D, E and F were finally dispersed to obtain the formulation.

5

Phase	Chemical name	Concentration
A	Microbiologically clean deionized water	qs 100
A	Glycerol	9
A	Ethylenediaminedisuccinic acid, trisodium salt, as an aqueous solution (Natlquest E30 – 37% active material)	0.25 (0.092 AM)
A2	Sodium lauryl ether sulfate (2.2 OE) as an aqueous solution (Texapon N 70 – 70% active material)	2 (1.4 AM)
B1	Glyceryl mono/distearate/polyethylene glycol stearate mixture (100 EO) (Arlacel 165)	4
B1	Cetyl Alcohol	0.5
B1	Oxyethylenated (20 EO) sorbitan monostearate (Tween 60-LQ)	0.9
B1	Stearic acid (Stearic acid 1850)	0.8
B1	Paraffin wax and hydrocarbon wax	3
B1	Glyceryl mono/di/tristearopalmitate (Dub GMS)	1
B1	White mineral oil (Marcol 82)	3
B2	Shea olein (Refined Shea Olein)	10
C1	Carboxyvinyl polymer (Acrypol 980 – 98% active material)	0.6
C1	Hydroxyethylcellulose (Natrosol 250 HHR PC)	0.1
C1	Polydimethylsiloxane (viscosity: 10 cSt) (Xiameter PMX-200 Silicone Fluid 10CS)	5
D	Expancel (551 DE 40 D42 – 89% active material)	1.5

	(Formulation 1) Or Aerosil R972 (Formulation A) Or Cab-O-Sil TS530 (Formulation B) Or Cab-O-Sil TS720 (Formulation C) Or Silica Silylate (Aerogel) (Dow Corning VM-2270 Aerogel Fine Particles) (Formulation 2)	
E	Sodium hydroxide	0.1
F	Ground expanded perlite - particle size - D50 180 microns (Imercare 270P-Scrub)	1.5

The properties in terms of ease of application, ease of rinseability and skin softness after rinsing off the formulations obtained were tested under blind conditions on a sample of 20 people.

5

Application and evaluation protocol

Each person applied a sample (500 mg) of each of the formulations onto wet hands, then rinsed their hands under a stream of warm water which was identical for each of the 20 persons.

10 The “application”, “rinseability” and “softness” performance qualities were then evaluated according to the following criteria:

- “application”: evaluation of a homogeneous application, without lumps, on wet skin (1 = no lumps, optimal application / 5 = many lumps, difficult application),

15 - “rinseability”: evaluation of the ease of rinsing (speed and amount of water to be used) after application (1 = difficult to rinse off / 5 = easy to rinse off, optimal performance), and

- “softness”: evaluation of the softness after rinsing and drying (1 = not soft, coarse / 5 = very soft).

Results

5

The results of the evaluations are as follows:

	Application	Rinseability	Softness
Formulation 1 (comparative)	4	2.5	2
Formulation A (comparative)	2.5	3.5	3.5
Formulation B (comparative)	3	1.5	4
Formulation C (comparative)	4	3	3.5
Formulation 2 (invention)	2	4.5	4.5

When compared with Formulations 1, A, B and C not in accordance with the invention, Formulation 2 in accordance with the invention significantly improves the application, rinseability and softness properties.

10

Example 2 (emulsion type)

A formulation of emulsion type in accordance with the invention (Formulation 3) was prepared by mixing the ingredients of phase A1 with heating to 75°C and homogenizing until dissolved. The heating was stopped and the ingredient of phase A2 was added until a fine, tight emulsion was obtained. Next, the ingredients of phase B1 were introduced, along with that of phase B2. The temperature of the mixture obtained was reduced to 45°C, the ingredients of phase C1 were added, and the mixture obtained was then stirred until a smooth, homogeneous mixture was obtained. The ingredients of phases D, E and F were finally dispersed to obtain the formulation.

20

Phase	Chemical name	Concentration
A1	Microbiologically clean deionized water	qs 100
A1	Glycerol	9
A1	Ethylenediaminedisuccinic acid, trisodium salt, as an aqueous solution (Natlquest E30 – 37% active material)	0.25 (0.092 AM)
A2	Sodium lauryl ether sulfate (2.2 EO) as an aqueous solution (Texapon N 70 – 70% active material)	2 (1.4 AM)

B1	Glyceryl mono/distearate/polyethylene glycol stearate mixture (100 EO) (Arlacel 165)	4
B1	Cetyl Alcohol	0.5
B1	Oxyethylenated (20 EO) sorbitan monostearate (Tween 60-LQ)	0.9
B1	Stearic acid (Stearic acid 1850)	0.8
B1	Paraffin wax and hydrocarbon wax	3
B1	Glyceryl mono/di/tristearopalmitate (Dub GMS)	1
B1	White mineral oil (Marcol 82)	3
B2	Shea olein (Refined Shea Olein)	10
C1	Carboxyvinyl polymer (Acrypol 980 – 98% active material)	0.6
C1	Hydroxyethylcellulose (Natrosol 250 HHR PC)	0.1
C1	Polydimethylsiloxane (viscosity: 10 cSt) (Xiameter PMX-200 Silicone Fluid 10CS)	5
D	Silica Silylate (Aerogel) (Dow Corning VM-2270 Aerogel Fine Particles)	2
E	Sodium hydroxide	0.1
F	Ground expanded perlite - particle size - D50 180 microns (Imercare 270P-Scrub)	1.5

The properties in terms of ease of application, ease of rinseability and skin softness after rinsing off the formulation obtained were tested under blind conditions on a sample of 20 people in accordance with the protocol described in Example 1.

5

Results

The results of the evaluations are as follows:

	Application	Rinseability	Softness
Formulation 3 (invention)	2	4.5	4.5

As for Formulation 2 of Example 1, Formulation 3 of Example 2 in accordance with the invention significantly improves the application, rinseability and softness properties.

5 **Example 3 (gel type)**

Two formulations of gel type were prepared, without Aerogel for Formulation 4 (composition outside the invention), and with Aerogel for Formulation 5 (composition according to the invention).

Each of the formulations was prepared by mixing the ingredients of phase A with heating to 65°C. The ingredients of the phase were added and the mixture obtained was homogenized. The ingredients of phase C were then introduced. The mixture was cooled to 25°C and the ingredient of phase E was added. Finally, the ingredient of phase F and those of phase H were added and the mixture was homogenized to obtain the formulation.

15

Phase	Chemical name	Concentration
A	Microbiologically clean deionized water	qs 100
A	Glycerol	7
A	Smectite (Veegum HV)	0.001
A	Ethylenediaminetetraacetic acid, tetrasodium salt (EDTA-4NA – 85% active material)	0.03 (0.025 AM)
A	1,2-Octanediol (Dermosoft Octiol)	0.5
B	Oxyethylenated (120 EO) methyl glucoside dioleate (Glucamate DOE-120 Thickener)	2.5
B	Lauric acid (Palmac 99-12)	1
C	Microbiologically clean deionized water	1
C	Triethanolamine	0.9
E	Microbiologically clean deionized water	40
F	Sodium N-cocoyl glycinate as an aqueous solution (Amilite GCS-12K – 30% active material)	2.7 (0.81 AM)

H	Cocoylbetaine as an aqueous solution (Dehyton AB 30 – 30% active material)	4.8 (1.44 AM)
H	White beads of hydrogenated castor oil and hydrogenated jojoba oil 20/40 mesh (Vanilla Shake Jojoba Scrubeads 20/40)	1
H	Silica Silylate (Aerogel) (Dow Corning VM-2270 Aerogel Fine)	Formulation 4: 0 Formulation 5: 3

The properties in terms of ease of application, ease of rinseability and skin softness after rinsing off the formulations obtained were tested under blind conditions on a sample of 20 people in accordance with the protocol described in Example 1.

5

Results

The results of the evaluations are as follows:

	Application	Rinseability	Softness
Formulation 4 (comparative)	2	3.5	0.5
Formulation 5 (invention)	1	5	1.5

When compared with Formulation 4 not in accordance with the invention,
10 Formulation 5 in accordance with the invention significantly improves the application, rinseability and softness properties.

Example 4 (anhydrous type)

Two formulations of anhydrous type were prepared, without Aerogel for
15 Formulation 6 (composition outside the invention), and with Aerogel for Formulation 7 (composition according to the invention).

Each of the formulations was prepared by melting the ingredients of phase A with heating to 80°C. The heating was stopped, the ingredients of phases B, C and D were added and the mixture obtained was homogenized. Next, the ingredients of phases E and
20 E1 were introduced and the mixture obtained was cast while hot to obtain the formulation.

Phase	Chemical name	Concentration
A	2-Ethylhexyl palmitate (Cegesoft C 24)	qs 100
A	Polymethylene wax of melting point 80°C (Cirebelle 108)	5
A	Dibutyl pentaerythrityl tetrahydroxycinnamate (Tinogard TT)	0.1
B	Olive oil	1
B	Shea butter (Refined Traced Shea Butter -100%)	1
C	1,2-Octanediol (Dermosoft Octiol)	0.49
C	Vitamin E: DL-alpha-Tocopherol	0.5
D	Oxyethylenated (20 EO) glyceryl triisostearate (Emalex GWIS-320EX)	5
D	Oxyethylenated (20 EO) sorbitan monolaurate (Tego SML 20)	0.02
E	2-Ethylhexyl palmitate (Cegesoft C 24)	2
E1	Sucrose (particle size 300-500 microns) (Sucre Semoule No. 1 400 from Beghin Say)	8
E1	Silica Silylate (Aerogel) (Dow Corning VM-2270 Aerogel Fine)	Formulation 6: 0 Formulation 7: 1.5

The properties in terms of ease of application, ease of rinseability and skin softness after rinsing off the formulations obtained were tested under blind conditions on a sample of 20 people in accordance with the protocol described in Example 1.

5

Results

The results of the evaluations are as follows:

	Application	Rinseability	Softness
Formulation 6 (comparative)	3	3.5	2.5
Formulation 7 (invention)	1	4	4

When compared with Formulation 6 not in accordance with the invention, Formulation 7 in accordance with the invention significantly improves the application, rinseability and softness properties.

CLAIMS

1. A composition, especially a cosmetic composition, comprising at least:
 - hydrophobic silica aerogel particles having a specific surface area per unit
 - 5 mass (S_M) ranging from 500 to 1500 m^2/g ,
 - at least one surfactant or a mixture of surfactants, and
 - exfoliant particles with a median size from 10 to 1500 μm .
2. The composition as claimed in claim 1, in which the hydrophobic silica
- 10 aerogel particles have a specific surface area per unit mass (S_M) ranging from 600 to 1200 m^2/g and preferentially from 600 to 800 m^2/g .
3. The composition as claimed in claim 1 or 2, in which the hydrophobic silica
- 15 aerogel particles have an oil-absorbing capacity, measured at the wet point, ranging from 5 to 18 ml/g, preferably from 6 to 15 ml/g and preferentially from 8 to 12 ml/g of particles.
4. The composition as claimed in any one of claims 1 to 3, in which the
- hydrophobic silica aerogel particles have a mean size, expressed as the volume-mean
- diameter ($D[0.5]$), ranging from 1 to 1500 μm , preferably from 1 to 1000 μm ,
- 20 preferentially from 1 to 100 μm , in particular from 1 to 30 μm , advantageously from 5 to 25 μm , better still from 5 to 20 μm and even better still from 5 to 15 μm .
5. The composition as claimed in any one of claims 1 to 4, in which the
- hydrophobic silica aerogel particles have a tapped density ranging from 0.04 to 0.10 g/cm^3
- 25 and preferably from 0.05 to 0.08 g/cm^3 .
6. The composition as claimed in any one of claims 1 to 5, in which the
- hydrophobic silica aerogel particles have a specific surface area per unit volume (S_V)
- ranging from 5 to 60 m^2/cm^3 , preferably from 10 to 50 m^2/cm^3 and preferentially from 15
- 30 to 40 m^2/cm^3 .

7. The composition as claimed in any one of claims 1 to 6, in which the hydrophobic silica aerogel particles are silylated silica aerogel particles and especially aerogel particles of hydrophobic silica surface-modified with trimethylsilyl groups.

5 8. The composition as claimed in any one of claims 1 to 7, in which the hydrophobic silica aerogel particles represent from 0.01% to 10% by weight, preferably from 0.05% to 5% by weight, preferentially from 0.1% to 5% by weight and advantageously from 0.5% to 2% by weight relative to the total weight of the composition.

10 9. The composition as claimed in any one of claims 1 to 8, in which the surfactant or the mixture of surfactants comprises at least one anionic surfactant.

 10. The composition as claimed in any one of claims 1 to 9, in which the surfactant or the mixture of surfactants comprises at least one nonionic surfactant.

15 11. The composition as claimed in any one of claims 1 to 10, in which the exfoliant particles are of mineral, plant or synthetic origin.

 12. The composition as claimed in any one of claims 1 to 11, in which
20 the exfoliant particles are particles of perlite, sugar, or fruit kernel shells, in particular perlite and sugar particles.

 13. The composition as claimed in any one of claims 1 to 12, comprising:

25 - from 0.01% to 10% by weight, preferably from 0.1% to 5% by weight, of hydrophobic silica aerogel particles, which are preferentially surface-modified with trimethylsilyl groups,

 - from 0.01% to 50% by weight, preferably from 0.1% to 25% by weight, preferentially from 0.5% to 15% by weight, advantageously from 1% to 10% by weight, of
30 exfoliant particles with a median size ranging from 10 to 1500 μm , preferentially from 25 to 1000 μm , advantageously from 100 to 500 μm , and

 - from 0.1% to 20% by weight of surfactant(s).

14. The composition as claimed in any one of claims 1 to 13, also comprising water, preferably in a content ranging from 5% to 98% by weight, preferentially from 20% to 95% by weight and advantageously from 40% to 90% by weight, relative to the total weight of the composition.

15. The composition as claimed in any one of claims 1 to 13, characterized in that it is free of water.

16. The composition as claimed in any one of claims 1 to 15, characterized in that it is a rinseable cosmetic composition intended to be applied to the skin and then rinsed off, preferably with water.

17. The composition as claimed in any one of claims 1 to 16, characterized in that it is in the form of a product for caring for and/or cleansing bodily or facial skin or the lips, preferably an exfoliant or scrubbing composition for bodily or facial skin.

18. The use of a cosmetic composition as claimed in any one of claims 1 to 17, for caring for and/or cleansing, in particular exfoliating, bodily and/or facial skin.

19. A cosmetic process for treating bodily and/or facial skin, comprising a step of applying a cosmetic composition as claimed in any one of claims 1 to 18, and preferably a step of rinsing said composition, preferentially with water.

INTERNATIONAL SEARCH REPORT

International application No

PCT/EP2017/061449

A. CLASSIFICATION OF SUBJECT MATTER

INV. A61K8/25 A61K8/39 A61K8/46 A61Q19/10
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	US 2006/246027 A1 (TANNER PAUL R [US]) 2 November 2006 (2006-11-02) claims 1-8; examples III,IV,IX -----	1-19
X	DATABASE GNPD [Online] MINTEL; 2 May 2016 (2016-05-02), "Oily skin renovating care", XP002761808, Database accession no. 4110193 the whole document -----	1-19
X	DATABASE GNPD [Online] MINTEL; 2 May 2016 (2016-05-02), "Spots & Blackheads Triple Action Care", XP002761809, Database accession no. 4006295 the whole document -----	1-19



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

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"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

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INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No

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