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(54) Title: COSMETIC COMPOSITION CONTAINING HYDROPHOBIC FLAKES COMPRISING FATTY ALCOHOLS

(57) Abstract: The present invention belongs to the cosmetic field, and relates to a cosmetic composition, a transparent packaging containing the cosmetic composition, hydrophobic flakes and use of alcohol (s) in production of the hydrophobic flakes. Specifically, the present invention discloses a cosmetic composition comprising an aqueous phase containing one or more alcohols and hydrophobic flakes, wherein said hydrophobic flakes are suspended in the aqueous phase and wherein the hydrophobic flakes comprise one or more fatty alcohols with a melting point between 35°C to 60°C at a pressure of 1013 hPa. The hydrophobic flakes of the present invention are formed with a reduced variance in size.



Cosmetic composition containing hydrophobic flakes comprising fatty alcohols**Beiersdorf AG**

5 Technical field

The present invention belongs to the cosmetic field, and specifically relates to a cosmetic composition, a transparent packaging containing the cosmetic composition, hydrophobic flakes and use of alcohol (s) in production of the hydrophobic flakes.

10 Technical background

A beautiful and attractive appearance is a desire for many people. Therefore, an essential part of the daily personal care of humans is focused on their skin. For that purpose, cosmetic compositions in form of creams, lotions and/or oils are topically applied to the human skin. Within cosmetic compositions active ingredients are
15 contained to reduce wrinkles, moisturize the skin, protect the skin from UV-radiation or generally to improve the appearance of the skin.

The problem of active ingredients not being soluble in water is often addressed by diluting the insoluble components in a lipophilic phase which can be suspended in an
20 aqueous outer phase. Such compositions are often referred to as oil-in-water (O/W)-emulsions. However, those systems often have the disadvantage that the suspended lipophilic droplets are mostly very small and often not visible for the customer. Therefore, for some consumers, the appearance of O/W-emulsions is rather boring.

25 Even though the suspended lipophilic droplets are visible by eye to the customer, these droplets have a round and/or micellar shape. This is most likely due to the use of surfactants which promote the formation of the oil droplets in an aqueous phase. However, in order to provide the customers with sensory attractive cosmetic
30 compositions, it is desirable to form hydrophobic flakes with a unique and irregular shape suspended in an outer aqueous phase. Thereby, active ingredients should be contained in the hydrophobic flakes. Preferably, the hydrophobic flakes melt and/or

are spread upon application on human skin such that the active ingredients may be released.

It is also desirable to provide an improved cosmetic composition with hydrophobic flakes, wherein the flakes feel soft and smooth when applied to the skin.

WO 2012177757 A2 describes a personal care composition comprising irregular shaped particles. These particles can be made from a range of organic and inorganic materials, such as silica, carbonate-derived salts and polymeric compounds. The described particles are solid and do not melt or/and are spread upon application.

WO 2006048115 A1 discloses aqueous liquid cleansing compositions comprising gel flakes formed from hydrophilic polysaccharides, such as gellan gum, xanthan gum, pectin, gum arabic and other polysaccharides.

US 6117419 A discloses a method of preparing hydrophobic flakes which may contain active ingredients. The flakes are formed by pumping a liquid phase of waxy material onto a surface of a stirred hydrophilic gel, wherein the hydrophobic gel is an aqueous solution containing substances such as cellulose gums, cellulose gum esters, alginate gums, acrylic acid polymers, poly vinyl methyl ether/maleic anhydride decadiene crosspolymer, carbomer or hyaluronic acid.

However, following the described production method disclosed in US 6117419 A, the hydrophobic flakes formed vary significantly in size. This variance is a disadvantage for cosmetic companies who try to produce cosmetic products with comparable appearance within a single product as well as across a whole product range.

Summary of Invention

The present invention is to provide a cosmetic composition comprising hydrophobic flakes with improved properties. In particular, it was the objective of the

present invention to provide a cosmetic composition with hydrophobic flakes, wherein the variance of the size of the hydrophobic flakes is reduced in comparison to the hydrophobic flakes known from prior art. It was another objective of the present invention to provide a method of producing hydrophobic flakes with reduced variance in size. These objectives were surprisingly solved by the present invention.

The first object of the invention is a cosmetic composition comprising an aqueous phase containing

- a.) one or more alcohols selected from the group consisting of ethanol, 1-propanol, 1,2-propanediol, 1,2-butanediol, 1,2-pentanediol, 2-methyl-1,3-propanediol, 2,2-dimethyl-1,3-propanediol, 1,3-propanediol, 1,4-butanediol, 1,5-pentanediol, 1,6-hexanediol and 1,2,3-propanetriol, and
 - b.) hydrophobic flakes,
- wherein the said hydrophobic flakes are suspended in the aqueous phase and wherein the hydrophobic flakes comprise
- i. one or more fatty alcohols with a melting point between 35°C to 60°C at a pressure of 1013 hPa, and
 - ii. one or more further substances.

Another object of the present invention is a transparent packaging containing the cosmetic composition of the present invention.

Another object of the present invention is a preparation process of hydrophobic flakes, comprising a step of forming the hydrophobic flakes in the presence of one or more alcohols selected from the group consisting of ethanol, 1-propanol, 1,2-propanediol, 1,2-butanediol, 1,2-pentanediol, 2-methyl-1,3-propanediol, 2,2-dimethyl-1,3-propanediol, 1,3-propanediol, 1,4-butanediol, 1,5-pentanediol, 1,6-hexanediol and 1,2,3-propanetriol; and wherein the hydrophobic flakes comprise one or more fatty alcohols with a melting point between 35°C to 60°C at a pressure of 1013 hPa.

Still another object of the present invention is the use of one or more alcohols selected from the group consisting of ethanol, 1-propanol, 1,2-propanediol, 1,2-butanediol, 1,2-pentanediol, 2-methyl-1,3-propanediol, 2,2-dimethyl-1,3-propanediol, 1,3-propanediol, 1,4-butanediol, 1,5-pentanediol, 1,6-hexanediol and 1,2,3-propanetriol in the production of hydrophobic flakes to reduce the variance in the size of hydrophobic flakes comprising one or more fatty alcohols with a melting point between 35°C to 60°C at a pressure of 1013 hPa.

All percentages and ratios used herein are by weight of the total composition, unless otherwise designated.

All measurements are understood to be made under ambient conditions, which means at a temperature of 25°C, at an atmospheric pressure of 1013 hPa and at 50% relative humidity, unless otherwise designated.

The term “flake” refers to a solid or semisolid material, which is homogeneous and which is suspended in an aqueous phase.

The term “hydrophobic flake” means a flake which contains water insoluble hydrophobic molecules and the hydrophobic part of amphiphilic molecules.

In the case the hydrophobic flake contains the hydrophobic part of amphiphilic molecules, the formed layer of the amphiphilic molecules is not considered as wall of a capsule.

Furthermore, even though the hydrophobic flake contains the hydrophobic part of amphiphilic molecules, the hydrophobic flake is still considered to be homogeneous.

The term “hydrophobic flake” does explicitly not refer to a cellulose particle such as the product known under the trade name VIVApur CS 400 S sold by J. Rettmaier & Söhne.

The term “hydrophobic flake” does also explicitly not refer to a capsule. Capsules are substances with a wall and a core, wherein the core comprises fragrances or active ingredients. Hence, capsules are not homogeneous.

5

The term “the hydrophobic flake contains/comprises” means that either a molecule is fully contained or at least partly contained in the hydrophobic flake.

10 The term “transparent packaging” refers to a packaging which allows at least one wavelength in the range from 390 nm to 700 nm to be transmitted through the packaging by 5% of the incident light.

The term “free from” means that the concentration of the contained substance is less than 0.1% by weight of the total composition.

15

The term “variance in size” or “variance of the size” means the variance determined for the particle length analyzing a population of at least 200 hydrophobic flakes, wherein the particle length of the hydrophobic flakes analyzed is in the range from 0.01 mm to 50 mm, preferably from 0.1 mm to 50 mm.

20

The term “fatty alcohols” refers solely to primary alcohols containing 12 to 36 carbon atoms.

25 The aqueous phase of the cosmetic composition of the present invention contains one or more alcohols selected from the group consisting of ethanol, 1-propanol, 1,2-ethandiol, 1,2-propanediol, 1,2-butanediol, 1,2-pentanediol, 2-methyl-1,3-propanediol, 2,2-dimethyl-1,3-propanediol, 1,3-propanediol, 1,4-butanediol, 1,5-pentanediol, 1,6-hexanediol and 1,2,3-propanetriol. Thereby it is preferred if the one or more alcohols are selected from ethanol, 1,2-propanediol, 30 1,2-butanediol and/or 2-methyl-1,3-propanediol.

The total concentration of the one or more alcohols selected from the group consisting of ethanol, 1-propanol, 1,2-ethandiol, 1,2-propanediol, 1,2-butanediol, 1,2-pentanediol, 2-methyl-1,3-propanediol, 2,2-dimethyl-1,3-propanediol, 1,3-propanediol, 1,4-butanediol, 1,5-pentanediol, 1,6-hexanediol and 1,2,3-propanetriol in the cosmetic composition is in the range from 1% to 15%, preferably in the range from 3% to 12% and more preferably in the range from 4% to 10% by weight of the total composition.

In a preferred embodiment of the invention one or more alcohols selected from ethanol, 1,2-propanediol, 1,2-butanediol and/or 2-methyl-1,3-propanediol are contained in the cosmetic composition in a total concentration of 4% to 10% by weight.

According to the invention the hydrophobic flakes comprise one or more fatty alcohols with a melting point between 35°C to 60°C at a pressure of 1013 hPa. Typical examples of those fatty alcohols are myristyl alcohol, cetyl alcohol and stearyl alcohol.

Thereby, the total concentration of the fatty alcohols with a melting point between 35°C to 60°C at a pressure of 1013 hPa in the cosmetic composition is preferably in the range from 0.5% to 5%, more preferably in the range from 1% to 4% and most preferably in the range from 1.5% to 3.5% by weight.

It is preferred if the weight ratio of fatty alcohols with a melting point between 35°C and 50°C at a pressure of 1013 hPa to fatty alcohols with a melting point between more than 50°C and 60°C at a pressure of 1013 hPa is larger than 0.3:1, more preferably larger than 1:1, most preferably larger than 2:1.

Furthermore, it is preferred if the total concentration of fatty alcohols with a melting point exceeding 60°C at a pressure of 1013 hPa is less than 0.01%, preferably less than 0.0005% by weight of the total composition.

It is also preferred if the total concentration of fatty alcohols with a melting point of less than 35°C at a pressure of 1013 hPa is less than 0.01%, more preferably less than 0.0005% by weight of the total composition.

5 The hydrophobic flakes of the present invention preferably have a mean particle length of 0.01 mm to 50 mm, preferably 0.1 mm to 50 mm.

10 The term “particle length” refers thereby to the distance between the most apart edges of each particle. This distance can easily be determined using a microscope and/or a photography of the hydrophobic flakes in the cosmetic composition.

The mean particle length is determined by analyzing a population of at least 200 particles which exceed a particle length of 0.01 mm.

15 Furthermore, it is preferred if the hydrophobic flakes have a mean circularity of less than 1.0, more preferably less than 0.95 and most preferably less than 0.90.

According to the present invention the circularity of a particle can be determined according to the equation

20

$$Circularity = \frac{4\pi A}{P^2}$$

wherein A is the particle area and P is its perimeter length. Both parameters may be determined from a (microscope) photography of the hydrophobic flakes.

25

The mean circularity is determined by analyzing a population of at least 200 particles which exceed a particle length of 0.01 mm.

30 Moreover, the hydrophobic flakes of the present invention comprise one or more further substances. The term “further substance” means a chemical substance which is

not a fatty alcohol. Typical examples of such further substances are hydrocarbon compounds, polymerized siloxanes, esters of carboxylic acids and alcohols, fatty acids, tocopherol acetate, ubiquinones, UV-filters and colorants.

5 A group of preferred substances which can be contained in the hydrophobic flakes of the cosmetic composition of the present invention are one or more hydrocarbon compounds, which are solid or liquid at 20°C and 1013 hPa. Preferred hydrocarbon compounds are known under the CTFA name paraffin, paraffinum liquidum and cera microcristallina.

10

The term “hydrocarbon compounds” refers solely to molecules which consist of hydrogen and carbon atoms.

15 The total concentration of the one or more hydrocarbon compounds, which are solid or liquid at 20°C and 1013 hPa, in the composition of the present invention is in the range from 0.01% to 5%, preferably in the range from 0.05% to 1.5% by weight of the total composition.

20 It is also preferred, if the hydrophobic flakes contain one or more polymerized siloxanes. Preferred examples of polymerized siloxanes are cyclomethicone, amodimethicone and dimethicone.

25 In the case that polymerized siloxanes are contained in the hydrophobic flakes, it is preferred if the total concentration of those components in the cosmetic composition of the present invention is in the range from 0.01% to 5% by weight.

30 Furthermore, it is preferred if the hydrophobic flakes contain one or more esters, which are formed by esterification of a linear or branched, saturated or unsaturated carboxylic acid containing 15 to 36 carbon atoms and a linear or branched, saturated or unsaturated alcohol containing 12 to 36 carbon atoms. These esters may be either synthesized or of natural origin.

In the case that the hydrophobic flakes contain one or more esters, which are formed by esterification of a linear or branched, saturated or unsaturated carboxylic acid containing 15 to 36 carbon atoms and a linear or branched, saturated or unsaturated alcohol containing 12 to 36 carbon atoms, it is preferred if the total concentration of those esters in the cosmetic composition is in the range from 0.01% to 5% by weight.

Thereby, it is most preferred if only ester of a linear or branched, saturated or unsaturated carboxylic acid containing 15 to 36 carbon atoms and a linear or branched, saturated or unsaturated alcohol containing 12 to 36 carbon atoms with a melting point in the range from 35°C to 75°C at a pressure of 1013 hPa is contained in the hydrophobic flakes.

It is also preferred if the total concentration of fatty acids with a melting point exceeding 60°C at a pressure of 1013 hPa in the cosmetic composition is less than 0.01%, more preferably less than 0.0005% by weight of the total composition.

The term “fatty acids” generally refers to a carboxylic acid with a saturated or unsaturated hydrocarbon containing 8 to 36 carbon atoms.

Furthermore, it is preferred if the hydrophobic flakes contain one or more fatty acids with a melting point from 30°C to 60°C at a pressure of 1013 hPa.

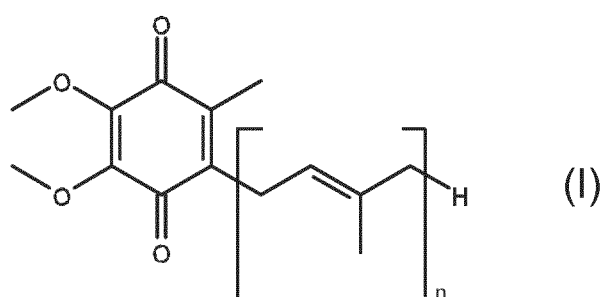
In the case that the hydrophobic flakes contain one or more fatty acids with a melting point from 30°C to 60°C at a pressure of 1013 hPa, it is preferred if the total concentration of those fatty acids in the cosmetic composition is in the range from 0.01% to 5% by weight of the total composition.

It was another objective of the present invention to provide a cosmetic composition with hydrophobic flakes, wherein the variance of the size of the hydrophobic flakes is

reduced in comparison to the hydrophobic flakes known from prior art and wherein the hydrophobic flakes contain skin benefitting agents or an UV-filter.

Surprisingly, it was found that such hydrophobic flakes may also be provided by the present invention.

Hence, in one embodiment of the present invention it is preferred if the hydrophobic flakes contain one or more substances selected from tocopherol acetate and/or one or more ubiquinones of the formula (I)



wherein n is a integer number in the range from 1 to 10.

If tocopherol acetate is contained in the hydrophobic flakes, it is preferred, if the total concentration of tocopherol acetate in the cosmetic composition is in the range from 0.01% to 2% by weight of the total composition.

In the case one or more ubiquinones of the formula (I) are contained in the hydrophobic flakes, it is preferred if at least one ubiquinone with $n = 10$ is contained in the hydrophobic flakes and the total concentration of the ubiquinone of the formula (I) with $n = 10$ in the cosmetic composition is in the range from 0.0005% to 0.5% by weight of the total composition.

In another embodiment of the present invention it is preferred if the hydrophobic flakes of the present invention contain one or more UV-filters selected from 2,2'-methylene-bis-(6-(2H-benzotriazol-2-yl)-4-(1,1,3,3-tetramethylbutyl)phenol) (CTFA: Methylene bis-benzotriazolyl tetramethylbutylphenol); 2-(2H-benzotriazol-2-yl)-4-methyl-6-(2-methyl-3-(1,3,3,3-tetramethyl-1-((trimethyls

5 ilyl)oxy)-disiloxanyl)propyl)phenol (CAS No.: 155633-54-8); 3-(4-methyl
 benzylidene)camphor; 3-benzylidene camphor; 2-ethylhexyl salicylate (CTFA:
 Ethylhexyl salicylate); 2-ethylhexyl 2-cyano-3,3-diphenylacrylate; 2-ethylhexyl
 4-dimethylaminobenzoate, 4-(dimethylamino) benzoic acid amyl ester;
 10 4-methoxybenzamalon acid di-2-ethylhexyl ester; (RS)-2-ethylhexyl
 (2E)-3-(4-methoxyphenyl)prop-2-enoate (CTFA: Octyl methoxycinnamate); Isoamyl
 4-methoxycinnamate (CAS No.: 71617-10-2); 2-ethylhexyl
 2-cyano-3,3-diphenyl-2-propenoate (CTFA: Octocrylene); 2-Hydroxy-4-methoxy-
 benzophenone; 2-Hydroxy-4-methoxy-4'-methylbenzophenone;
 15 2,2'-dihydroxy-4-methoxybenzophenone (CTFA: Benzophenone-8);
 4-tert-butyl-4'-methoxydibenzoylmethane (CTFA: Butyl Methoxydibenzoylmethane);
 homomenthyl salicylate; dimethicodiethylbenzalmalonate (CTFA: Polysilicone-15);
 3-(4-(2,2-bis-ethoxycarbonylvinyl)phenoxy)propenyl)methoxysiloxane /
 dimethylsiloxane-copolymer; hexyl 2-(4-(diethylamino)-2-hydroxybenzoyl) benzoate
 20 (CTFA: Diethylamino hydroxybenzoyl hexyl benzoate);
 4,4'-(((6-(((4-(((1,1-dimethylethyl)amino)carbonyl)-
 phenyl)amino)-1,3,5-triazine-2,4-diyl)diimino)bis-, bis(2-ethylhexyl)benzoate (CTFA:
 Diethylhexyl butamido triazone);
 2,4-bis-(5-1(dimethyl-propyl)benzoxazol-2-yl-(4-phenyl)-imino)-6-(2-ethylhexyl)-imi
 25 no-1,3,5-triazine (CAS Nr. 288254-16-0);
 2,4-Bis-(((4-(2-ethyl-hexyloxy)-2-hydroxy)-phenyl)-6-(4-methoxyphenyl)-1,3,5-triazin
 e (CTFA: Bis-Ethylhexyloxyphenol Methoxyphenol Triazine);
 4-(((4,6-bis(((4-(2-ethylhexoxy-oxo-
 methyl)phenyl)amino)-1,3,5-triazin-2-yl)amino)benzoic acid 2-ethylhexyl ester
 30 (CTFA: Ethylhexyl triazone); 2,4,6-tri(3-biphenyl)-1,3,5-triazine; merocyanine
 and/or hydrophobically modified titanium dioxide. Preferred UV-filters are
 2-ethylhexyl 2-cyano-3,3-diphenyl-2-propenoate (CTFA: Octocrylene), 2-ethylhexyl
 salicylate (CTFA: Ethylhexyl salicylate); 4-tert-butyl-4'-ethoxydibenzoylmethane
 (CTFA: Butyl Methoxydibenzoylmethane) and/or hydrophobically modified titanium
 dioxide.

The concentration of the one or more UV-filters in the cosmetic composition of the present invention is in the range from 0.05% to 15%, preferably in the range from 0.1% to 8% by weight of the total composition.

5 For the appearance of cosmetic composition it is advantageous if colorants are contained in the inventive cosmetic composition. These colorants can either be contained in the hydrophobic flakes or in the aqueous phase surrounding the hydrophobic flakes.

10 In a preferred embodiment of the present invention at least one hydrophobic colorant is contained in the hydrophobic flakes of the cosmetic composition.

In a further preferred embodiment at least one hydrophobic colorant is contained in the hydrophobic flakes and at least one water soluble colorant is contained in the
15 aqueous phase of the cosmetic composition.

In one preferred embodiment of the present invention the aqueous phase is an emulsion.

20 Furthermore, it is preferred if the total proportion of the aqueous phase in the cosmetic composition of the present invention is in the range from 70% to 99.5%, preferably from 90% to 99%, more preferably from 93% to 97.5% by weight of the total composition.

25 The cosmetic composition of the present invention preferably comprises water (aqua) in a concentration of at least 50%, more preferably at least 75% by weight of the total composition.

In a preferred embodiment of the present invention the aqueous phase of the
30 cosmetic composition comprises phenoxyethanol, benzethonium chloride and/or ethylhexylglycerin.

In the case that the aqueous phase of the cosmetic composition contains phenoxyethanol, it is preferred if the concentration of phenoxyethanol is in the range from 0.1% to 1% by weight of the total composition.

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In the case that the aqueous phase of the cosmetic composition contains benzethonium chloride, it is preferred if the concentration of benzethonium chloride is in the range from 0.01% to 0.4% by weight of the total composition.

10 In the case that the aqueous phase of the cosmetic composition contains ethylhexylglycerin, it is preferred if the concentration of ethylhexylglycerin is in the range from 0.1% to 2.0% by weight of the total composition.

15 According to the invention it is advantageous, if the aqueous phase of the cosmetic composition contains benzyl alcohol, methyl parabene and/or ethyl parabene.

In the case that the aqueous phase of the cosmetic composition contains benzyl alcohol, it is preferred if the concentration of benzyl alcohol is in the range from 0.1% to 2% by weight of the total composition.

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In the case that the aqueous phase of the cosmetic composition contains methyl parabene, it is preferred if the concentration of methyl parabene is in the range from 0.1% to 1% by weight of the total composition.

25 In the case that the aqueous phase of the cosmetic composition contains ethyl parabene, it is preferred if the concentration of ethyl parabene is in the range from 0.1% to 1% by weight of the total composition.

30 Furthermore, it is preferred, if the aqueous phase of the cosmetic composition of the present invention contains one or more thickening agents. The term thickening agent refers thereby to any polymeric substance which, when added to an aqueous

phase, increases the viscosity of the aqueous phase.

Preferably the one or more thickening agents are selected from the group consisting of carbomer, acrylates/C10-30 alkyl acrylate crosspolymer, ammonium acryloyldimethyltaurate/VP copolymer, xanthan gum, sodium polyacrylate, calcium carboxymethyl cellulose, carboxymethyl cellulose acetate butyrate, carboxymethyl hydroxyethylcellulose, cellulose gum, cellulose acetate propionate carboxylate, cetyl hydroxyethylcellulose, ethylcellulose, hydrolyzed cellulose gum, hydroxybutyl methylcellulose, hydroxyethylcellulose, hydroxyethyl ethylcellulose, hydroxypropylcellulose, hydroxypropyl methylcellulose, methylcellulose, methyl ethylcellulose, methyl hydroxyethylcellulose, microcrystalline cellulose, sodium cellulose sulfate, tapioca starch, acrylates copolymer, acrylates crosspolymer-4, polyacrylate-1 crosspolymer, acrylates/steareth-20 methacrylate copolymer and acrylates/beheneth-25 methacrylate copolymer.

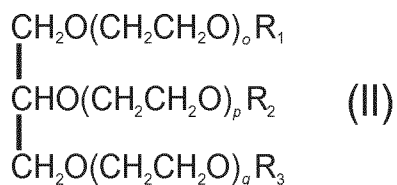
Preferably, the total concentration of the one or more thickening agents in the cosmetic composition of the present invention is in the range from 0.01% to 5%, more preferably 0.05% to 0.5% by weight of the total composition.

The aqueous phase of the cosmetic composition of the present invention comprises preferably one or more water-soluble UV-filters. According to the present invention the term water-soluble UV-filter refers solely to substances selected from the group consisting of 2-phenyl-3H-benzimidazole-5-sulfonic acid and/or the salt thereof; phenylene-1,4-bis-(2-benzimidazolyl)-3,3'-5,5'-tetrasulfonic acid and salts thereof (For example (CTFA): Disodium Phenyl Dibenzimidazole Tetrasulfonate); 1,4-di(2-oxo-10-sulfo-3-bornyliden-methyl) benzene and salts thereof; 4-Hydroxy-2-methoxy-5-(oxo-phenylmethyl)benzenesulfonic acid and salts thereof (For example (CTFA): Benzophenone-4, Benzophenone-5); 4-(2-oxo-3-bornylidenemethyl)benzene sulfonic acid and salts thereof; 2-methyl-5-(2-oxo-3-bornylidenemethyl) sulfonic acid and salts thereof; and terephthalylidene dicamphor sulfonic acid.

Further, in preferred embodiments of the present invention, the cosmetic composition contains one or more active ingredients such as whitening agents, anti-dandruff agents, natural extracts, topical anesthetics, anti-aging actives, antiperspirant ingredients, skin moisturizing ingredients and/or anti-acne ingredients. Preferred active ingredients are selected from the group consisting of alpha-lipoic acid, folic acid, phytoene, biotin, alpha-glucosyl rutin, carnitine, carnosine, natural and/synthetic isoflavones, flavonoids, creatine, creatinine, taurine, β -alanine, dihydroxyacetone, 8-hexadecene-1,16-dicarboxylic acid, glyceryl glucoside, licorice extract, aloe vera, hyaluronic acid, aloe barbadensis leaf juice, (2-hydroxyethyl)urea, niacinamide and vitamin A.

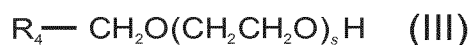
Preferably, the cosmetic composition has a viscosity of 1000 mPa·s to 100000 mPa·s, more preferred 1500 mPa·s to 20000 mPa·s and most preferred 3000 mPa·s to 15000 mPa·s at a temperature of 25 °C.

The cosmetic composition of the present invention is preferably free from substances according to the formula (II)



wherein R_1 , R_2 and R_3 are independently selected from a hydrogen or a linear or branched, saturated and/or unsaturated acyl radical comprising 6 to 30 carbon atoms, o , p and q are integers in the range from 0 to 500, wherein the sum of o , p and q has to be equal to 1 or larger.

Furthermore, the cosmetic composition of the present invention is preferably free from substances according to the formula (III)



wherein R_4 is a saturated or unsaturated alkyl group comprising 5 to 30 carbon

atoms and s is an integer in between 1 to 100.

Preferably, the cosmetic composition of the present invention is free from alky polyglycosides, such as coco glucoside, decyl glucoside and lauryl glucoside.

5

It is also advantageous, if the cosmetic composition is free from anionic surfactants, which are selected from the group of C8 to C20 alkyl or alkylbenzene molecules additionally containing only a terminal group selected from carboxylate ($-\text{COO}^-$), sulfonate ($-\text{SO}_3^-$), sulfate ($-\text{OSO}_3^-$) or phosphate.

10

Moreover, the cosmetic composition is preferably free from cationic surfactants, which are selected from the group of C8 to C20 alkyl or alkylbenzene molecules containing additionally a terminal primary, secondary, or tertiary amine group with a total maximum of 7 carbon atoms.

15

Further it is preferred if the cosmetic composition is free from zwitterionic surfactants which contain a quaternary ammonium group and a terminal carboxylate ($-\text{COO}^-$), sulfonate ($-\text{SO}_3^-$), sulfate ($-\text{OSO}_3^-$) or phosphate group.

20 The cosmetic composition is further characterized by the fact that the total concentration of surfactants does not exceed 0.3% by weight of the total composition. Fatty alcohols are not considered as surfactants.

Furthermore, the cosmetic composition of the present invention is preferably free
25 from particles containing polyethylene, hydrogenated castor oil, silica and/or derivatives thereof.

The cosmetic composition of the present invention is preferably contained in a transparent packaging. Thereby the packaging can preferably be a tube, a cup, a pot or
30 a bottle.

The viscosity of the inventive composition and of the raw material was measured using Rheomat R123 (proRheo GmbH). The measurements were performed at temperature of 25°C. The stirring spindle used is measuring bob no.1 for sample with a viscosity from 300 mPa·s to 10000 mPa·s and measuring bob no.2 for sample with
5 viscosity from 10000 mPa·s to 100000 mPa·s.

The following preparation process for the cosmetic composition of the present invention is not intended to limit the preparation methods.

10 The cosmetic composition may be prepared in a cylindrical mixing chamber. The chamber contains preferably a mixing blade having a diameter of 1/3 to 1/2 of the mixing chamber.

In one embodiment of the present invention all lipophilic substances which shall be
15 contained in the hydrophobic flakes (lipophilic phase) are liquefied by melting and homogeneously mixed. All remaining substances are dissolved in an aqueous phase in the mixing chamber. Then the liquefied phase containing the ingredients for the hydrophobic flakes is pumped onto the surface of the aqueous phase. In this process the aqueous phase is stirred and the liquefied phase containing the ingredients for the
20 hydrophobic flakes is solidified upon contact with the aqueous phase. Due to the stirring the hydrophobic flakes are formed at a mean particle length of 0.01 mm to 50 mm, preferably 0.1 mm to 50 mm and suspended in the aqueous phase.

Examples

25 The following examples should illustrate the compositions of this invention, without, however, intending to limit the invention to these examples. The numerical values in the examples are percentages by weight, based on the total weight of the preparations.

Examples 1-14

Ingredient	Ex. 1	Ex. 2	Ex. 3	Ex. 4	Ex. 5
Lipophilic phase:					
Cera Microcristallina	0.5	0.5	0.5	0.5	0.5
Paraffinum Liquidum	0.1	0.1	0.1	0.1	0.1
Parfum	q.s.	q.s.	q.s.	q.s.	q.s.
Myristyl Alcohol	0.5	0.5	0.5	0.5	0.5
Cetearyl Alcohol	1.5	1.5	1.5	1.5	1.5
Aqueous phase:					
Carbomer	0.2	0.2	0.2	0.2	0.2
Alcohol Denat.	0	5.0	0	0	0
Propylene Glycol	5.0	0	0	0	0
Methylpropanediol	0	0	5.0	0	0
Butylene Glycol	0	0	0	5.0	0
Glycerin	0	0	0	0	5.0
Methylparaben	0.2	0.2	0.2	0.2	0.2
Phenoxyethanol	0.5	0.5	0.5	0.5	0.5
Aqua + Sodium Hydroxide	0.1	0.1	0.1	0.1	0.1
Aqua	ad 100	ad 100	ad 100	ad 100	ad 100

Ingredient	Ex. 6	Ex. 7	Ex. 8	Ex. 9	Ex. 10
Lipophilic phase:					
Benzophenone-4	0	0	0	0	0.05
Ubiquinone-10	0.005	0	0.005	0	0
Tocopheryl Acetate	0	0	0.06	0	0.1
Cera Microcristallina + Paraffinum Liquidum	0	0.5	0	2	0
Paraffinum Liquidum	0.1	0.1	0.7	0.1	0.2
Parfum	q.s.	q.s.	q.s.	q.s.	q.s.
Octocrylene	0	0	0	0	1.2
Ethylhexyl Salicylate	0	0	0	0	0.5
Butyl Methoxydibenzoylmeth ane	0	0	0	0	1.1
Titanium Dioxide	0	0	0.3	0	0.2
Cetyl Alcohol	2	0	1.5	0	0
Cetearyl Alcohol	0	1.5	0.5	3	3
Myristyl Alcohol	0	0.5	0	0	0
Aqueous phase:					
Propylene Glycol	5	5	4	5	4
Glycerin	0	0	5	0	5
1,2-Hexanediol	1	0	0	0	0
Aqua + Sodium Hydroxide	0.1	0.1	0.12	0.1	0.11
Phenoxyethanol	0	0.5	0.8	0.8	0.8
Methylparaben	0	0.2	0	0	0
Carbomer	0.2	0.2	0.25	0.2	0.25
Alcohol Denat.	0	0	6	0	6
Aqua	ad 100	ad 100	ad 100	ad 100	ad 100

	Ex. 11	Ex. 12	Ex. 13	Ex. 14
Ingredient	Inv.	Com.	Inv.	Com.
Lipophilic phase:				
Cetyl Alcohol	2.0	2.0	0	0
Stearyl Alcohol	0	0	1.56	1.56
Cyclomethicone	0	0	2.5	2.5
Dimethicone	0	0	0.63	0.63
Paraffinum Liquidum	1.2	1.2	0	0
Cera Alba	0	0	1.56	1.56
Cera Microcristallina	0.3	0.3	0	0
Benzophenone-4	0.05	0.05	0	0
Parfum	q.s.	q.s.	q.s.	q.s.
CI 60725	0.0003	0.0003	0	0
Aqueous phase:				
Propylene Glycol	4.0	0	4.0	0
Alcohol Denat.	3.0	0	0	0
Hydroxyethylcellulose	0	0	1.64	1.64
Phenoxyethanol	1.0	0.5	0.5	0.5
Carbomer	0.3	0.3	0	0
Trisodium EDTA	0.04	0.04	0	0
Citric Acid	0	0	0.19	0.19
Sodium Hydroxide (45%) + Aqua (55%)	0	0	0.19	0.19
Aqua	ad 100	ad 100	ad 100	ad 100

Inv. = Example according to the invention

Com. = Example not according to the invention

Figure 1 shows a photography taken from the Examples 13 and 14. On the bottom of the picture is a ruler with cm scale. It is immediately obvious that the flakes formed in the inventive sample, shown on the right in Figure 1, have a significant lower variance in size than the flakes formed in the non-inventive sample.

The properties of the particles are described in the following Table (200 particles

were analyzed to determine the characteristics):

	Ex. 13 (inventive)	Ex. 14 (comparative)
Variance in the particle length (for particles with a particle length 0.1 mm to 50 mm)	1.94	3.61
Variance in the particle length (for particles with a particle length 0.01 mm to 50 mm)	1.46	2.32
Mean particle length	1.03	1.05
Mean circularity	0.880	0.878

Claims

1. Cosmetic composition comprising an aqueous phase containing

- a.) one or more alcohols selected from the group consisting of ethanol,
1-propanol, 1,2-propanediol, 1,2-butanediol, 1,2-pentanediol,
2-methyl-1,3-propanediol, 2,2-dimethyl-1,3-propanediol, 1,3-propanediol,
1,4-butanediol, 1,5-pentanediol, 1,6-hexanediol and 1,2,3-propanetriol, and
b.) hydrophobic flakes,

wherein the said hydrophobic flakes are suspended in the aqueous phase and

wherein the hydrophobic flakes comprise

- i. one or more fatty alcohols with a melting point between 35°C to 60°C at a
pressure of 1013 hPa, and
ii. one or more further substances.

2. Cosmetic composition according to claim 1 characterized in that the one or more
alcohols are selected from ethanol, 1,2-propanediol, 1,2-butanediol and/or
2-methyl-1,3-propanediol.

3. Cosmetic composition according to any of the claims 1 to 2 characterized in that the
concentration of the one or more alcohols in the cosmetic composition is in the
range from 1% to 15% by weight of the total composition.

4. Cosmetic composition according to claim 3 characterized in that the concentration
of the one or more alcohols in the cosmetic composition is in the range from 3% to
12% by weight of the total composition.

5. Cosmetic composition according to claim 4 characterized in that the concentration
of the one or more alcohols in the cosmetic composition is in the range from 4% to
10% by weight of the total composition.

6. Cosmetic composition according to any of the claims 1 to 5 characterized in that the total concentration of the fatty alcohols with a melting point between 35°C to 60°C at a pressure of 1013 hPa is in the range from 0.5% to 5% by weight of the total composition.

5

7. Cosmetic composition according to claim 6 characterized in that the total concentration of the fatty alcohols with a melting point between 35°C to 60°C at a pressure of 1013 hPa is in the range from 1% to 4% by weight of the total composition.

10

8. Cosmetic composition according to claim 7 characterized in that the total concentration of the fatty alcohols with a melting point between 35°C to 60°C at a pressure of 1013 hPa is in the range from 1.5% to 3.5% by weight of the total composition.

15

9. Cosmetic composition according to any of the claims 1 to 8 characterized in that the weight ratio of fatty alcohols with a melting point between 35°C and 50°C at a pressure of 1013 hPa to fatty alcohols with a melting point between more than 50°C and 60°C at a pressure of 1013 hPa is larger than 0.3:1.

20

10. Cosmetic composition according to claim 9 characterized in that the weight ratio of fatty alcohols with a melting point between 35°C and 50°C at a pressure of 1013 hPa to fatty alcohols with a melting point between more than 50°C and 60°C at a pressure of 1013 hPa is larger than 1:1.

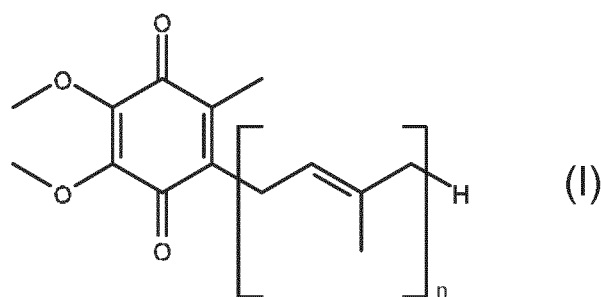
25

11. Cosmetic composition according to claim 10 characterized in that the weight ratio of fatty alcohols with a melting point between 35°C and 50°C at a pressure of 1013 hPa to fatty alcohols with a melting point between more than 50°C and 60°C at a pressure of 1013 hPa is larger than 2:1.

30

12. Cosmetic composition according to any of the claims 1 to 11 characterized in that the total concentration of fatty alcohols with a melting point exceeding 60°C at a pressure of 1013 hPa is less than 0.01% by weight of the total composition.
- 5 13. Cosmetic composition according to claim 12 characterized in that the total concentration of fatty alcohols with a melting point exceeding 60°C at a pressure of 1013 hPa is less than 0.0005% by weight of the total composition.
- 10 14. Cosmetic composition according to any of the claims 1 to 13 characterized in that the total concentration of fatty alcohols with a melting point of less than 35°C at a pressure of 1013 hPa is less than 0.01% weight of the total composition.
- 15 15. Cosmetic composition according to any of the claims 1 to 14 characterized in that the hydrophobic flakes have a mean particle length of 0.01 mm to 50 mm.
16. Cosmetic composition according to claims 15 characterized in that the hydrophobic flakes have a mean particle length of 0.1 mm to 50 mm.
- 20 17. Cosmetic composition according to any of the claims 1 to 16 characterized in that the hydrophobic flakes have a mean circularity of less than 1.0.
- 25 18. Cosmetic composition according to claim 17 characterized in that the hydrophobic flakes have a mean circularity of less than 0.95.
- 30 19. Cosmetic composition according to claim 18 characterized in that the hydrophobic flakes have a mean circularity of less than 0.90.
20. Cosmetic composition according to any of the claims 1 to 19 characterized in that the hydrophobic flakes contain one or more hydrocarbon compounds which are solid or liquid at 20°C and 1013 hPa.

21. Cosmetic composition according to claim 20 characterized in that the concentration of the one or more hydrocarbon compounds is in the range from 0.05% to 1.5% by weight of the total composition.
- 5 22. Cosmetic composition according to any of the claims 1 to 21 characterized in that the hydrophobic flakes contain one or more polymerized siloxanes.
- 10 23. Cosmetic composition according to any of the claims 1 to 22 characterized in that the hydrophobic flakes contain one or more esters, which are formed by esterification of a linear or branched, saturated or unsaturated carboxylic acid containing 15 to 36 carbon atoms and a linear or branched, saturated or unsaturated alcohol containing 12 to 36 carbon atoms.
- 15 24. Cosmetic composition according to any of the claims 1 to 23 characterized in that the total concentration of fatty acids with a melting point exceeding 60°C at a pressure of 1013 hPa in the cosmetic composition is less than 0.01% by weight of the total composition.
- 20 25. Cosmetic composition according to any of the claims 1 to 24 characterized in that the hydrophobic flakes contain one or more fatty acids with a melting point from 30°C to 60°C at a pressure of 1013 hPa.
- 25 26. Cosmetic composition according to claim 25 characterized in that the cosmetic composition contains one or more fatty acids with a melting point from 30°C to 60°C at a pressure of 1013 hPa in a total concentration from 0.01% to 5% by weight of the total composition.
- 30 27. Cosmetic composition according to any of the claims 1 to 26 characterized in that the hydrophobic flakes contain one or more substances selected from tocopherol acetate and/or ubiquinones of the formula (I)



wherein n is a integer number in the range from 1 to 10.

28. Cosmetic composition according to any of the claims 1 to 27 characterized in that

5 the hydrophobic flakes contain one or more UV-filters selected from

2,2'-methylene-bis-(6-(2H-benzotriazol-2-yl)-4-(1,1,3,3-tetramethylbutyl)phenol);

2-(2H-benzotriazol-2-yl)-4-methyl-6-(2-methyl-3-(1,3,3,3-tetramethyl-1-((trimethylsilyl)oxy)disiloxanyl)propyl)phenol; 3-(4-methyl benzylidene)camphor;

3-benzylidene camphor; 2-ethylhexyl salicylate; 2-ethylhexyl

10 2-cyano-3,3-diphenylacrylate; 2-ethylhexyl 4-dimethylaminobenzoate,

4-(dimethylamino) benzoic acid amyl ester; 4-methoxybenzamalon acid

di-2-ethylhexyl ester; (RS)-2-ethylhexyl (2E)-3-(4-methoxyphenyl)prop-2-enoate;

Isoamyl 4-methoxycinnamate; 2-ethylhexyl 2-cyano-3,3-diphenyl-2-propenoate;

2-Hydroxy-4-methoxybenzophenone;

15 2-Hydroxy-4-methoxy-4'-methylbenzophenone; 2,2'-dihydroxy-4-methoxybenzo-

phenone; 4-tert-butyl-4'-methoxydibenzoylmethane; homomenthyl salicylate;

dimethicodiethylbenzalmalonate; 3-(4-(2,2-bis-ethoxycarbonylvinyl)phenoxy)-

propenyl)methoxysiloxane / dimethylsiloxane-copolymer; hexyl

20 2-(4-(diethylamino)-2-hydroxybenzoyl) benzoate;

4,4'-(((6-(((4-(((1,1-dimethylethyl)amino)carbonyl)-

phenyl)amino)-1,3,5-triazine-2,4-diyl)diimino)bis-, bis(2-ethylhexyl)benzoate;

2,4-bis-(5-1(dimethyl-propyl)benzoxazol-2-yl-(4-phenyl)-imino)-6-(2-ethylhexyl)-i

mino-1,3,5-triazine; 2,4-Bis-(((4-(2-ethyl-hexyloxy)-

-2-hydroxy)-phenyl)-6-(4-methoxyphenyl)-1,3,5-triazine;

25 4-(((4,6-bis((4-(2-ethylhexoxy-oxo-

methyl)phenyl)amino)-1,3,5-triazin-2-yl)amino)benzoic acid 2-ethylhexyl ester;

2,4,6-tri(3-biphenyl)-1,3,5-triazine; merocyanine and/or hydrophobically modified titanium dioxide.

29. Cosmetic composition according to any of the claims 1 to 28 characterized in that the total proportion of the aqueous phase in the cosmetic composition is in the range from 70% to 99.5% by weight of the total composition.

30. Cosmetic composition according to any of the claims 1 to 29 characterized in that the aqueous phase of the cosmetic composition comprises phenoxyethanol, benzethonium chloride and/or ethylhexylglycerin.

31. Cosmetic composition according to any of the claims 1 to 30 characterized in that the aqueous phase of the cosmetic composition contains benzyl alcohol, methyl parabene and/or ethyl parabene.

32. Cosmetic composition according to any of the claims 1 to 31 characterized in that the aqueous phase of the cosmetic composition contains at least one thickening agent.

33. Cosmetic composition according to any of the claims 1 to 32 characterized in that the aqueous phase of the cosmetic composition contains one or more water-soluble UV-filters.

34. Cosmetic composition according to any of the claims 1 to 33 characterized in that the cosmetic composition contains one or more active ingredients selected from alpha-lipoic acid, folic acid, phytoene, biotin, alpha-glucosyl rutin, carnitine, carnosine, natural and/synthetic isoflavones, flavonoids, creatine, creatinine, taurine, β -alanine, dihydroxyacetone, 8-hexadecene-1,16-dicarboxylic acid, glyceryl glucoside, licorice extract, aloe vera, hyaluronic acid, aloe barbadensis leaf juice, (2-hydroxyethyl)urea, niacinamide and/or vitamin A.

35. Cosmetic composition according to any of the claims 1 to 34 characterized in that the cosmetic composition has a viscosity of 1000 mPa·s to 100000 mPa·s at a temperature of 25°C.
- 5 36. Cosmetic composition according to claim 35 characterized in that the cosmetic composition has a viscosity of 1500 mPa·s to 20000 mPa·s at a temperature of 25°C.
- 10 37. Cosmetic composition according to claim 36 characterized in that the cosmetic composition has a viscosity of 3000 mPa·s to 15000 mPa·s at a temperature of 25°C.
- 15 38. Cosmetic composition according to any of the claims 1 to 37 characterized in that the total concentration of surfactants does not exceed 0.3% by weight of the total composition.
39. Transparent packaging containing the cosmetic composition according to any of the claims 1 to 38.
- 20 40. A preparation process of hydrophobic flakes, comprising a step of forming the hydrophobic flakes in the presence of one or more alcohols selected from the group consisting of ethanol, 1-propanol, 1,2-propanediol, 1,2-butanediol, 1,2-pentanediol, 2-methyl-1,3-propanediol, 2,2-dimethyl-1,3-propanediol, 1,3-propanediol, 1,4-butanediol, 1,5-pentanediol, 1,6-hexanediol and 1,2,3-propanetriol; and wherein
25 the hydrophobic flakes comprise at least one or more fatty alcohols with a melting point between 35°C to 60°C at a pressure of 1013 hPa.
- 30 41. The use of one or more alcohols selected from the group consisting of ethanol, 1-propanol, 1,2-propanediol, 1,2-butanediol, 1,2-pentanediol, 2-methyl-1,3-propanediol, 2,2-dimethyl-1,3-propanediol, 1,3-propanediol, 1,4-butanediol, 1,5-pentanediol, 1,6-hexanediol and 1,2,3-propanetriol in the

production of hydrophobic flakes to reduce the variance in the size of hydrophobic flakes comprising one or more fatty alcohols with a melting point between 35°C to 60°C at a pressure of 1013 hPa.

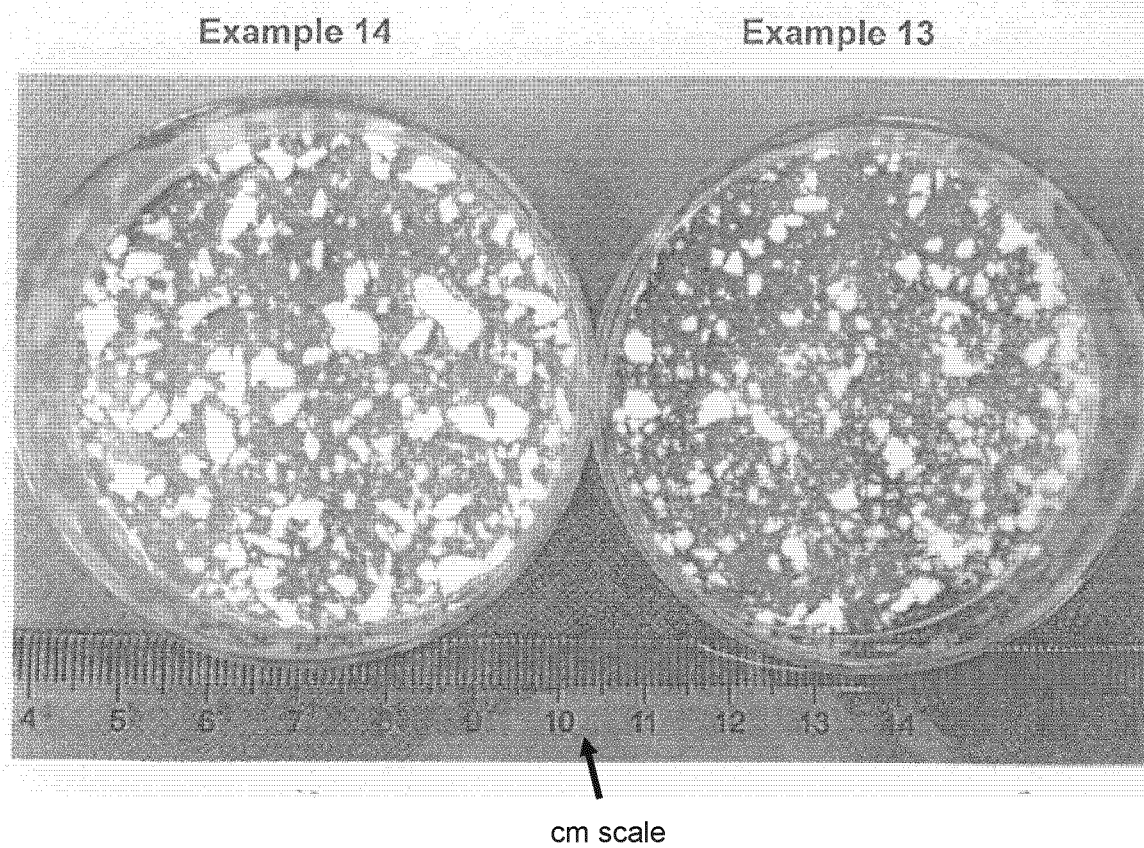


Figure 1

INTERNATIONAL SEARCH REPORT

International application No
PCT/EP2017/065262

A. CLASSIFICATION OF SUBJECT MATTER INV. A61K8/34 A61K8/02 A61Q19/00 A61K8/04 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, CHEM ABS Data, 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 Y Y Y	US 6 607 715 B1 (BARINOVA HELENA S [US] ET AL) 19 August 2003 (2003-08-19) column 3, lines 11-38 column 4, line 54 - column 5, line 6 examples ----- US 6 117 419 A (VERNICE JOSEPH JAMES [US]) 12 September 2000 (2000-09-12) cited in the application column 1, line 58 - column 2, line 33 column 3, lines 42-57 examples ----- US 2007/129272 A1 (O'CONNOR STEPHEN M [US] ET AL) 7 June 2007 (2007-06-07) page 2, paragraph 19-25 page 10, paragraph 165 ----- -/-	1-19,30, 35-37,40 1-41 1-41 1-41
☒ Further documents are listed in the continuation of Box C. ☒ See patent family annex.		
* Special categories of cited documents : "A" document defining the general state of the art which is not considered to be of particular relevance "E" earlier application or patent but published on or after the international filing date "L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified) "O" document referring to an oral disclosure, use, exhibition or other means "P" document published prior to the international filing date but later than the priority date claimed "T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention "X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone "Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art "&" document member of the same patent family		
Date of the actual completion of the international search 27 July 2017		Date of mailing of the international search report 09/08/2017
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 Ruckebusch, Virginie

INTERNATIONAL SEARCH REPORT

International application No

PCT/EP2017/065262

C(Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
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