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(54) Title: A CLEANSING COMPOSITION RELEASABLE IN FORM OF A STABLE FOAM

(57) Abstract: A cosmetic cleansing composition releasable as a stable foam contains a combination of fatty acids and/or potassium salts, at least one nonionic surfactant, and at least one polyol.



WO 2020/164086 A1

A Cleansing Composition Releasable in Form of a Stable Foam

Technical field

The present invention belongs to the cosmetic field, and relates to a cleansing composition, especially a cleansing composition releasable from a suitable packaging device as a stable foam. Furthermore the composition has effective cleansing properties, shows stability at low temperatures and conveys a very pleasant sensory impression upon usage.

Background art

Cleansing compositions in form of a self-foaming cleanser are very popular today, especially in North Asia.

In general, cleansing products are supposed to cleanse the skin and hair. Cleansing products for the skin are primarily used to remove dirt from the skin surface. External solid or liquid components, which came into contact with the skin and were deposited thereupon or components applied to the skin, for instance as make-up, are part of the dirt on the skin, which is to be removed. Furthermore, the dirt on the skin also includes excess skin lipids and dead cells. By the aid of surfactants in the cleansing compositions, the components of the dirt are solubilized and removed from the surface of the skin during rinsing off. This holds also true for make-up, which shall be removed from the skin, hair and skin appendages, and in particular from the face.

Cleansing compositions intended for face cleansing have to meet special requirements. As the skin of the face is a very sensitive part of the skin, the eye area and the eyes being even more sensitive, cleansing compositions for face cleansing have to be compatible to the skin of the face and the eyes. Furthermore, the compositions have to be distributed on the skin easily, without the necessity of intense rubbing, which may lead to skin irritations.

To meet these requirements a cleansing composition in form of a foam may be provided.

Prior art already knows cleansing compositions in form of a foam.

US 2006/0019844 A1 describes a foaming cleansing composition, which is as gentle as a non-foaming composition; the composition comprises a surfactant system containing alkyl glycol carboxylic acids and their salts and alkyl betaines.

US 7,488,709 B2 discloses a cleansing composition in form of an aerosol foam. The composition comprises alkyl amphoacetates and glycerolated esters of polyethylene glycol.

CN 102198078 A describes foam cleansers containing herbs known from Chinese traditional medicine. The surfactants, which may be contained, are anionic, nonionic, cationic and amphoteric surfactants, additionally fatty acids are contained. The fatty acids may be selected from lauric acid, myristic acid, hexadecanoic acid and octadecanoic acid.

WO 2016/102395 A1 discloses a quick dissolving film for washing keratin materials, the film upon dissolving generates a foaming composition. The films are mainly composed of a specific film forming polymer, a water miscible polyol, a surfactant system comprising at least a soap and at least a foaming surfactant.

CN 107536773 A describes a post-foaming cleansing gel. The gel contains a saponifier comprising palmitic acid, triethanolamine and stearic acid and polyglycosides.

There is still the need to further improve the cleansing compositions in form of foam cleanser. It is desirable to provide a transparent composition, which upon release from the packaging device generates a stable foam. The foam should be sufficiently stable. Moreover, the composition has to be transparent even at lower temperatures, which might occur during transportation in winter. Additionally, in order to remove make-up, too, the cleansing foam has to show a high cleansing efficacy.

Summary of the invention

Surprisingly, it was found that a cosmetic cleansing composition releasable as a foam containing

- a combination of fatty acids and/or the respective sodium and/or potassium salts, containing lauric acid, myristic acid, palmitic acid, and/or the respective sodium or potassium salts thereof,
- at least one nonionic surfactant, wherein the at least one nonionic surfactant is chosen from alkyl poly glycosides, and
- at least one polyol,

could bring about the desired improvements.

A further object of the present invention is a cosmetic product containing

a cosmetic cleansing composition containing

- a combination of fatty acids and/or the respective sodium and/or potassium salts, containing lauric acid, myristic acid, palmitic acid, and/or the respective sodium or potassium salts thereof,
- at least one nonionic surfactant, wherein the at least one nonionic surfactant is chosen from alkyl poly glycosides, and
- at least one polyol, and

a packaging device, especially a pump foamer, capable of forming a foam from the cleansing composition.

Still a further object of the present invention is the use of a combination of fatty acids and/or the respective sodium and/or potassium salts, containing lauric acid, myristic acid, palmitic acid, and/or the respective sodium or potassium salts thereof in a cosmetic cleansing composition containing

- at least one nonionic surfactant, wherein the at least one nonionic surfactant is chosen from alkyl poly glycosides, and
- at least one polyol

to form a stable foam.

Yet, still a further object of the present invention is the use of a combination of fatty acids and/or the respective sodium and/or potassium salts, containing lauric acid, myristic acid, palmitic acid, and/or the respective sodium or potassium salts thereof, at least one nonionic surfactant and at least one polyol in a cosmetic cleansing composition to form a stable foam.

The composition contains water, hence it is an aqueous composition. The water content ranges from 60 to 98 % by weight, preferably 65 to 95 % by weight, more preferably 70 to 90 % by weight, in relation to the total weight of the composition. Advantageously, the composition is a fluid. The present invention cannot be realized, if the composition is in form of a gel or in form of a film.

Detailed description of the invention

The composition according to the invention contains a combination of fatty acids and/or the respective sodium and/or potassium salts, comprising lauric acid, myristic acid, palmitic acid, and/or the respective sodium or potassium salts thereof. Advantageously, the respective fatty acids are added to the composition in form of the respective acid. By further adding a base, preferably sodium hydroxide and/or potassium hydroxide, more preferably potassium hydroxide the respective salts are generated. The fatty acid salts are known as soaps. The

soaps contained in the composition of the present invention contribute to the formation of a stable foam.

It is preferred, if only lauric acid, myristic acid, palmitic acid, and/or the respective sodium or potassium salts thereof are contained in the composition of the present invention. It is further preferred, if the weight ratio of lauric acid : myristic acid : palmitic acid is 2.25 : 2.25 : 1 to 1 : 1 : 1. It is more preferred, if the weight ratio of lauric acid : myristic acid : palmitic acid is 1 : 2.25 : 1, and it is most preferred, if the weight ratio of lauric acid : myristic acid : palmitic acid is 2.25 : 1 : 1. Advantageously, the amount of the base added is calculated to achieve a degree of neutralization of at least 95 %, more preferably of at least 100 %, most preferably about 103 %.

Unless specifically stated or obvious from context, as used herein, the term "about" in reference to a number or range of numbers is understood to mean the stated number and numbers $\pm 10\%$ thereof, or 10% below the lower listed limit and 10% above the higher listed limit for the values listed for a range.

Advantageously, in the composition according to the invention the combination of fatty acids and/or the respective sodium and/or potassium salts, containing lauric acid, myristic acid, palmitic acid, and/or the respective sodium or potassium salts thereof is contained in an amount of 1.0 to 3.0 % by weight, preferably 1.5 to 2.5 % by weight, in relation to the total weight of the composition.

The composition according to the invention contains at least one nonionic surfactant, wherein the at least one nonionic surfactant is chosen from alkyl poly glycosides. The addition of at least one member of this group of surfactants contributes to the high cleansing efficacy of the composition, even to a good make-up removal efficacy. At the same time this/these surfactants help(s) to provide a mild cleansing composition.

The at least one nonionic surfactant is chosen from the group of alkyl poly glycosides, represented by the formula $RO-(Z)_x$, wherein R is the alkyl group having 6 to 30 carbon atoms, Z is a sugar moiety and x is the number of sugar moieties (1.1-5 on average). The alkyl poly glycosides according to the invention may have a specific alkyl group, representing one distinct number of carbon atoms. In general, alkyl poly glycosides are produced starting from natural oils, preferably plant oils, more preferably coconut oil. In this case, the alkyl group R is a mixture of the alkyl groups of the respective fatty acids of natural oil used as a starting material.

It is preferred, if the alkyl poly glycosides have alkyl groups, where R represents of C8 to C30 alkyl groups, preferably C8 to C24 alkyl groups.

The sugar moieties may be monosaccharides or oligosaccharides. In general, the sugar moieties have 5 or 6 carbon atoms, which are contained as monosaccharides or oligosaccharides. Examples for suitable sugar moieties are glucose, fructose, galactose, arabinose, ribose, xylose, lyxose, allose, altrose, mannose, gulose, idose, talose and sucrose. It is preferred, if the sugar moieties are glucose or sucrose. It is more preferred, if the sugar moiety is glucose.

The alkyl poly glycosides contain 1.1 to 5 sugar moieties on average, preferably 1.1 to 2.0, more preferably 1.1 to 1.8. It is most preferred, if the alkyl poly glycoside is decyl glucoside. Decyl glucoside may be purchased as a composition of 53% Decyl glucoside and 47% water, under the trade name Plantacare 2000 UP from BASF Personal Care and Nutrition.

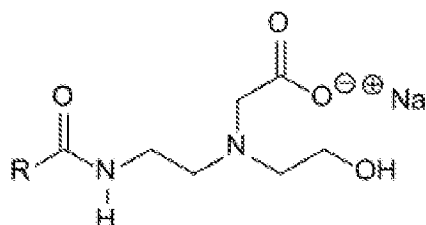
Advantageously, the at least one alkyl poly glycoside is contained in an amount of 0.1 to 7.5 % by weight, preferably 0.5 to 5.0 % by weight, and more preferably 2.0 to 3.0 % by weight in the composition according to the invention, in relation to the active content and in relation to the total weight of the composition.

The composition according to the invention contains at least one polyol. Polyols are alcohols having at least two hydroxyl groups. Polyols may be low-molecular or high-molecular components. In the meaning of the present invention polyols are referring only to low-molecular components, containing 2 to 15 carbon atoms. It is preferred, if the at least one polyol is chosen from glycerol and alkylene glycols such as, for example, ethylene glycol, diethylene glycol, propylene glycol, butylene glycol, pentylene glycol, and hexylene glycol. It is more preferred, if glycerol and/or propylene glycol are contained.

Advantageously, the at least one polyol is contained in an amount of 0.1 to 10.0 % by weight, preferably 2.0 to 8.0 % by weight, and more preferably 3.0 to 7.0 % by weight in the composition according to the invention, in relation to the active content and in relation to the total weight of the composition.

Additionally, further surfactants may be contained in the composition of the present invention.

Advantageously, at least one amphoteric surfactant may be contained in the composition of the present invention, preferably chosen from alkyl amphotacetates, which may be described by the formula



wherein R is an alkyl residue of 8 to 30 carbon atoms.

In general, alkyl amphoacetates are synthesized in two steps. Firstly, a fatty acid, preferably having not less than 8 carbon atoms, or a blend of fatty acids derived from a natural oil, preferably a plant oil such as coconut oil, soy bean oil or palm oil is reacted with *N*-(2-Hydroxyethyl)ethylenediamine. The resulting 2-alkyl-1-hydroxyethylimidazoline is hydrolyzed with NaOH to a linear amidoamine and reacted with monochloroacetic acid to alkyl monoamphoacetate. If higher molar amounts of monochloroacetic acid are used, alkyl amphodiacetates are generated.

Alkyl amphoacetates are amphoteric surfactants, which behave as anionic, zwitterionic, or cationic surfactants depending on the pH value. Sodium salts of alkyl amphoacetate, which are known to contribute to the generation of rich foam and to cause only less irritation of the skin and the eyes, further support the improvement of the foam quality and the mildness of the composition of the present invention.

According to the present invention it is preferred, if the alkyl residue is derived from plant oil, more preferably coconut oil.

Furthermore, it is preferred, if sodium salts of alky amphoacetates are contained in the composition of the present invention.

It is most preferred, if sodium cocoamphoacetate is contained in the composition according to the invention. Sodium cocoamphoacetate may be purchased as a composition of 32.5% sodium cocoamphoacetate, 7.5% Sodium Chloride and 60% water, under the trade name Rewoteric AM C MB from Evonik Industries.

Advantageously, the at least one alkyl amphoacetate is contained in an amount of 0.2 to 5.0 % by weight, preferably 0.5 to 3.0 % by weight, and more preferably 1.0 to 2.5 % by weight in the composition according to the invention, in relation to the active content and in relation to the total weight of the composition.

Advantageously, at least one anionic surfactant chosen from amino acid based surfactants may be contained in the composition of the present invention.

It is preferred, if the at least one amino acid based surfactant is an acyl amino acid (and/or a salt thereof), examples of amino acid based surfactants are presented in the following listing:

- Acyl glutamates, for example, sodium acyl glutamate, such as sodium lauroyl glutamate, sodium myristoyl glutamate, and sodium palmoyl glutamate,
- sarcosinates, for example, sodium lauroyl sarcosinate, and sodium cocoyl sarcosinate,
- glycinate, for example sodium cocoyl glycinate.

It is more preferred, if the at least one amino acid based surfactant is chosen from alkyl glycinate, most preferably potassium cocoyl glycinate, which may be purchased as Amlite GCK-12H from the company Ajinomoto.

In the composition according to the present invention the at least one acyl amino acid is contained in an amount of 1 to 15% by weight, preferably 6 to 12 % by weight, in relation to the active content and in relation to the total weight of the composition.

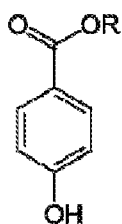
Advantageously, at least one further nonionic surfactant may be contained in the composition of the present invention. It is preferred, if the at least one further nonionic surfactant is chosen from alkyl amides, which are obtained by reacting a fatty acid or a blend of fatty acids with ethanolamine or diethanolamine. For example, reaction products starting from a specific fatty acid may be lauramide MEA or lauramide DEA; reaction products from a blend of fatty acids may be cocamide MEA or cocamide DEA. It is most preferred, if cocamide MEA is contained in the composition of the present invention, which may be purchased as Comperlan 100 from the company BASF.

If in the composition according to the present invention at least one further nonionic surfactant is contained, the amount of the at least one further nonionic surfactant ranges from 0.05 to 2.0 % by weight, preferably 0.1 to 0.2 % by weight, in relation to the active content and in relation to the total weight of the composition.

This further nonionic surfactant is different from alkyl poly glycosides. The amount of this at least one further nonionic surfactant is not contained in the amount of the at least one alkyl poly glycoside.

Advantageously, the composition according to the present invention contains preservatives. All preservatives, which are allowed and suitable for cosmetic compositions may be contained in the composition according to the invention.

However, it is preferred, if one or more paraben(s) is/are contained. Parabens are characterized by the following formula



wherein R is a linear or branched alkyl residue of 1 to 5 carbon atoms. Common parabens are methyl-, ethyl-, propyl-, butylparaben, as well as isopropyl-, isobutyl-, pentyl-, and phenylparaben. It is more preferred, if methyl- and/or ethylparaben are contained.

The one or more paraben(s) is/are contained in a total amount of 0.01 to 2.0 % by weight, preferably 0.05 to 1.0 % by weight, more preferably 0.1 to 0.8 % by weight in the composition according to the invention, in relation to the total weight of the composition.

It is likewise preferred, if Phenoxyethanol is contained in the composition according to the invention. Phenoxyethanol is contained in an amount of 0.01 to 1 % by weight, preferably 0.05 to 0.9 % by weight, more preferably 0.3 to 0.6 % by weight, in relation to the total weight of the composition.

Furthermore, it is likewise preferred, if a combination of one or more parabene(s) and Phenoxyethanol is contained in the composition of the present invention.

Advantageously, the pH value of the composition according to the invention ranges from 6.5 to 9.0, preferably 7.8 to 8.8. The pH value may be adjusted by any physiologically acceptable means. However, it is preferred to use citric acid to adjust the pH value.

Advantageously, one or more complexing agent(s) may be contained in the composition of the present invention. Complexing agents are auxiliaries used in cosmetics or medicinal pharmaceutical technology, which are known per se. By complexing undesired metals such as Mn, Fe, Cu and others, it is possible, for example, to prevent undesired chemical reactions in cosmetic or dermatological preparations.

The complexing agent(s) can advantageously be chosen from the group of customary compounds, preferably at least one substance from the group consisting of tartaric acid and anions thereof, citric acid and anions thereof, aminopolycarboxylic acids and anions thereof (such as, for example, ethylenediaminetetraacetic acid (EDTA) and anions thereof, nitrilotriacetic acid (NTA) and anions thereof, hydroxyethylenediaminetriacetic acid (HOEDTA) and anions thereof, diethyleneaminopentaacetic acid (DPTA) and anions thereof, trans-1,2-diaminocyclohexanetetraacetic acid (CDTA) and anions thereof).

According to the invention, the complexing agent(s) is/are advantageously present in composition according to the invention in amount of from 0.01 % to 5.0 % by weight, preferably from 0.01 % to 2 % by weight, more preferably 0.02 to 1.0 % by weight, based on the total weight of the composition.

Additionally, at least one solvent may be contained in the composition of the present invention. It is preferred, if the at least one solvent is chosen from O/W emulsifiers, which may be characterized by HLB values of 8 to 15. HLB values may be determined according to the following formula:

$$\text{HLB} = 20 \times (1 - M_{\text{lipophile}}/M),$$

wherein $M_{\text{lipophile}}$ represents the molecular weight of the lipophilic portion in the emulsifier and M the molecular weight of the entire emulsifier.

It is more preferred, if the one or more emulsifier is/are chosen from ethoxylated emulsifiers. It is most preferred, if the at least one solvent is PEG-40 hydrogenated castor oil.

Advantageously, in the composition according to the present invention the at least one solvent is contained in an amount of 0.1 to 5.0 % by weight, preferably 0.5 to 2.0 % by weight, in relation to the total weight of the composition.

The at least one solvent is different from polyols. The amount of the at least one solvent contained in the composition of the present invention is not contained in the amount of the polyols.

The composition of the invention is contained in a packaging device, having a container and spraying means. Advantageously, the spraying means is a spray pump having the characteristic elements for such pumps, such as spray head, nozzle, piston, turret, cone, seal, fitting, sleeve, spring, housing and riser. Suitable spray pumps may be purchased, for example, from DERJIN (JIANGSU) PLASTIC PACKAGE CO., LTD. with the name self-foaming pump. The complete packaging device, which is very suitable for the present invention, may be called pump foamer.

The containers are advantageously made of plastic, in particular PET or PE. Likewise, containers of glass or metal are suitable.

Brief description of the Drawings

Fig.1 shows photos taken from compositions 1 to 6 kept at room temperature;

Fig.2a, Fig.2b and Fig.2c show photos taken from compositions 1 to 6 kept at 6°C for 1hr, 3hr, and 24hr, respectively;

Fig.3a, Fig.3b and Fig.3c show photos taken from compositions 1 to 6 kept at 0°C for 1hr, 3hr, and 24hr, respectively;

Fig.4 shows the results of the foam stability for compositions 1 to 6 distributed by rubbing for 20 times; and

Fig.5 shows the results of the foam stability for compositions 7 to 11 distributed by rubbing for 20 times.

Examples

The examples below are intended to illustrate the present invention without limiting it. The numerical values in the examples are percentages by weight, based on the total weight of the particular preparations, given as active content.

Example 1:

INCI	Wt.(%)
Aqua	To 100
Potassium CocoylGlycinate	6.3
Propylene Glycol	5.00
Glycerin	5.00
Potassium Cocoate	2.7
Myristic Acid	0.90
Lauric Acid	0.40
Palmitic Acid	0.40
Potassium Hydroxide	0.45
Decyl Glucoside	2.65
Sodium Cocoamphoacetate	1.75
PEG-40 Hydrogenated Castor Oil	1.00
Phenoxyethanol	0.60
Trisodium EDTA	0.04
Cocamide MEA	0.20
Citric Acid	0.18
Perfume	0.15

Example 2:

INCI	Wt.(%)
Aqua	To 100
Potassium CocoylGlycinate	6.3
Propylene Glycol	5.00

Glycerin	5.00
Potassium Cocoate	2.70
Myristic Acid	0.70
Lauric Acid	0.70
Palmitic Acid	0.40
Potassium Hydroxide	0.45
Decyl Glucoside	2.65
Sodium Cocoamphoacetate	2.1
PEG-40 Hydrogenated Castor Oil	0.80
Phenoxyethanol	0.90
Trisodium EDTA	0.04
Citric Acid	0.25
Perfume	0.15

Example 3:

INCI	Wt.(%)
Aqua	To 100
Potassium CocoylGlycinate	7.35
Propylene Glycol	7.00
Glycerin	3.00
Potassium Cocoate	3.15
Lauric Acid	0.90
Myristic Acid	0.40
Palmitic Acid	0.40
Potassium Hydroxide	0.45
Decyl Glucoside	2.95
Sodium Cocoamphoacetate	1.75
PEG-40 Hydrogenated Castor Oil	1.00
Phenoxyethanol	0.60
Trisodium EDTA	0.04
Citric Acid	0.18

Perfume	0.15
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Example 4:

INCI	Wt. (%)
Aqua	To 100
Potassium CocoylGlycinate	6.3
Propylene Glycol	6.00
Glycerin	4.00
Potassium Cocoate	2.7
Myristic Acid	0.90
Lauric Acid	0.40
Palmitic Acid	0.40
Potassium Hydroxide	0.45
Decyl Glucoside	2.12
Sodium Cocoamphoacetate	1.95
PEG-40 Hydrogenated Castor Oil	1.00
Phenoxyethanol	0.90
Trisodium EDTA	0.04
Citric Acid	0.18
Perfume	0.15

Example 5:

In order to evaluate the influence of fatty acids and/or the respective salts thereof having different chain length on the long term stability, different compositions were produced.

	1	2	3	4	5	6
Raw materials	(wt%)	(wt%)	(wt%)	(wt%)	Dosage(wt%)	Dosage(wt%)
Lauric acid	0.4	0.9	0.4	0.2	0.45	0.2
Myristic acid	0.9	0.4	0.4	0.45	0.2	0.2
Palmitic acid	0.4	0.4	0.9	0.2	0.2	0.45
Potassium Hydroxide	0.42	0.438	0.407	0.21	0.219	0.203
Water	q.s.	q.s.	q.s.	q.s.	q.s.	q.s.

Neutralisation Rate 103%

Sample preparation:

- 1) Weigh in all the raw materials for each sample into a beaker,
- 2) Heat under stirring to 70°C until clear solution,
- 3) Cool down to room temperature.

Samples of the different compositions were kept at different temperatures and photos were taken. The results are shown in Figures 1 to 3.

	Samples were kept at	
Fig. 1	RT*	
Fig. 2a	6°C	After 1 hour
Fig. 2b	6°C	After 3 hours
Fig. 2c	6°C	After 24 hours
Fig. 3a	0°C	After 1 hour
Fig. 3b	0°C	After 3 hours
Fig. 3c	0°C	After 24 hours

*room temperature

The above mentioned tests were conducted because the solubility of fatty acids decreases with decreasing temperature. Decreasing temperature is an issue, if the products are transported and stored at temperatures, which are typical in winter. At lower temperatures the fatty acids tend to precipitate. These precipitates might clog the pump header of the packaging device. This clogging might then result in a bad foam quality, especially an irregular foam. The transparency of a sample at lower temperatures indicates that no

precipitates are formed and in consequence the foam quality will be as desired, namely a regular, stable foam, even at lower temperatures. Referring to stability at lower temperatures the compositions 1 and 2 show the best results. Compositions 1 and 2 contain the fatty acid with the higher number of carbon atoms, namely palmitic acid, in a lower amount than the fatty acids having smaller numbers of carbon atoms, namely lauric acid and myristic acid. It becomes apparent that it is important to pay attention to the composition of the combination of fatty acids. Best results are obtained, if fatty acids having smaller numbers of carbon atoms are contained in excess to the fatty acid having a higher number of carbon atoms.

To evaluate the foam stability the above mentioned compositions 1 to 6 were filled in a packaging device, namely a pump foamer. An equal amount of foam was released directly to a tissue paper. The paper was monitored with regard to the water liberated from the foam. The higher the amount of water liberated from the foam the less stable the foam is. After 20 minutes of monitoring it became apparent that the foam of compositions 1, 2, and 3 showed a higher stability than the foam of compositions 4, 5, and 6.

Furthermore, the stability of the foam was evaluated after having been distributed on the skin, in this case on the hands. Compositions 1 to 6 were filled in a packaging device, namely a pump foamer. An equal amount of foam was released directly to one hand. The foam was distributed by rubbing for 20 times. The results are shown in Fig. 4.

It becomes apparent that after rubbing the foam of compositions 1 to 3 is more prominent, indicating a more stable foam.

In addition, the creaminess of the foam and the feeling of the skin were evaluated in a panel test. 8 persons applied the foam, generated from compositions 1 to 6 to their hands. The creaminess of the foam was evaluated as well as the smoothness of the skin after rinsing off the foam on a scale of 5, where 1 means bad and 5 means very good.

	1	2	3	4	5	6
Foam creaminess during using	3.3	3.0	2.7	1.7	1.4	1.3
Skin smoothness after rinsing	2.5	2.2	2.2	2.4	1.9	2.3

It becomes apparent, that the creaminess of the foam of compositions 1 to 3 was evaluated better than the creaminess of the foam of compositions 4 to 6.

Summing up, all 6 compositions generate stable foams, however compositions having a total amount of fatty higher than 1 % by weight are evaluated better.

Example 6:

In a second step the influence of certain polyols was evaluated in relation to foam properties and quality. For this purpose different compositions were prepared.

	7	8	9	10	11
Raw materials	(wt%)	(wt%)	(wt%)	(wt%)	(wt%)
Lauric acid	0.4	0.4	0.4	0.4	0.4
Myristic Acid	0.9	0.9	0.9	0.9	0.9
Palmitic Acid	0.4	0.4	0.4	0.4	0.4
Potassium Hydroxide	0.42	0.42	0.42	0.42	0.42
Glycerol	10		5	7	3
PropyleneGlycol		10	5	3	7
Water	q.s.	q.s.	q.s.	q.s.	q.s.

The composition of the combination of fatty acids was kept unchanged.

Sample preparation:

- 1) Weigh in all the raw materials for each sample into a beaker,
- 2) Heat under stirring to 70°C until clear solution,
- 3) Cool down to room temperature.

To evaluate the foam stability the above mentioned compositions 7 to 11 were filled in a packaging device, namely a pump foamer. An equal amount of foam was released directly to a tissue paper. The paper was monitored with regard to the water liberated from the foam. The higher the amount of water liberated from the foam the less stable the foam is. After 1 hour of monitoring it became apparent that the foam of composition 8 showed the lowest stability, the foam was collapsed nearly completely. Compositions 7, 9, 10, and 11 showed a significantly higher foam stability.

Furthermore, the stability of the foam was evaluated after having been distributed on the skin, in this case on the hands. Compositions 7 to 11 were filled in a packaging device, namely a pump foamer. An equal amount of foam was released directly to one hand. The foam was distributed by rubbing for 20times. The results are shown in Fig.5.

It becomes apparent that after rubbing the foam of composition 8 disappears more quickly than the foam of the other compositions. The foam generated from composition 8 is less stable.

In addition the creaminess of the foam and the feeling of the skin were evaluated in a panel test. 8 persons applied the foam, generated from compositions 7 to 11 to the hands. The creaminess of the foam was evaluated as well as the smoothness of the skin after rinsing off the foam on a scale of 5, where 1 means bad and 5 means very good.

	7	8	9	10	11
Foam creaminess while using	3.1	2.8	3.1	3.2	3.1
Skin smoothness after rinsing	2.5	2.6	3.0	2.6	2.8

It becomes apparent that overall the creaminess of the foam of compositions 7 to 11 was evaluated better than the creaminess of the foam of compositions 1 to 6, shown in Example 5. The same holds true for the feeling of the skin after rinsing. The compositions 1 to 6 according to example 5 do not contain any polyol. The addition of polyols, however, contributes to the stability of the foam, helps to improve the creaminess of the foam and results in a better feeling of the skin after having rinsed off the foam. Having a more detailed look at the results, the foam generated from compositions 9 to 11 is evaluated better than the one of composition 7 and 8. Compositions 9 to 11 contain mixtures of polyols, namely mixtures of glycerol and propylene glycol.

Furthermore, the skin feeling after rinsing off the foam is evaluated better after application of foam generated from compositions 9 to 11 than the skin feeling after application of foam from compositions 7 and 8. Also in relation to the skin feeling, a mixture of polyols, in this case glycerol and propylene glycol, results in the best evaluations.

Claims

1. A cosmetic cleansing composition releasable as a foam containing
 - a combination of fatty acids and/or the respective sodium and/or potassium salts, containing lauric acid, myristic acid, palmitic acid, and/or the respective sodium or potassium salts thereof,
 - at least one nonionic surfactant, wherein the at least one nonionic surfactant is chosen from alkyl poly glycosides, and
 - at least one polyol.
2. The composition according to claim 1 characterized in that water is contained, preferably in an amount of 60 to 98 % by weight, more preferably 65 to 95 % by weight, and most preferably 70 to 90 % by weight, in relation to the total weight of the composition.
3. The composition according to claim 1 or 2 characterized in that the combination of fatty acids and/or the respective sodium and/or potassium salts contains only lauric acid, myristic acid, palmitic acid, and/or the respective sodium or potassium salts thereof.
4. The composition according to according to any of the preceding claims characterized in that the weight ratio of lauric acid : myristic acid : palmitic acid is 2.25 : 2.25 : 1 to 1 : 1 : 1, preferably 1 : 2.25 : 1 or 2.25 : 1 : 1.
5. The composition according to according to any of the preceding claims characterized in that the degree of neutralization of the fatty acids is at least 95 %, more preferably of at least 100 %, most preferably about 103 %.
6. The composition according to according to any of the preceding claims characterized in that the combination of fatty acids and/or the respective sodium and/or potassium salts, containing lauric acid, myristic acid, palmitic acid, and/or the respective sodium or potassium salts thereof is contained in an amount of 1.0 to 3.0 % by weight, preferably 1.5 to 2.5 % by weight, in relation to the total weight of the composition.
7. The composition according to according to any of the preceding claims characterized in that the at least one alkyl poly glycoside has alkyl groups, being C8 to C30 alkyl groups, preferably C8 to C24 alkyl groups.
8. The composition according to according to any of the preceding claims characterized in that the sugar moieties of alkyl poly glycosides are glucose or sucrose, preferably glucose.
9. The composition according to according to any of the preceding claims characterized in that the alkyl poly glycoside is decyl glucoside.
10. The composition according to according to any of the preceding claims characterized in that the at least one alkyl poly glycoside is contained in an amount of 0.1 to 7.5 % by

- weight, preferably 0.5 to 5.0 % by weight, and more preferably 2.0 to 4.0 % by weight, in relation to the active content and in relation to the total weight of the composition.
11. The composition according to any of the preceding claims characterized in that the at least one polyol is chosen from glycerol and/or alkylene glycols, alkylene glycols being chosen from ethylene glycol, diethylene glycol, propylene glycol, butylene glycol, pentylene glycol, and hexylene glycol.
 12. The composition according to any of the preceding claims characterized in that the at least one polyol is chosen from glycerol and/or propylene glycol.
 13. The composition according to any of the preceding claims characterized in that the at least one polyol is contained in an amount of 0.1 to 10.0 % by weight, preferably 2.0 to 8.0 % by weight, and more preferably 3.0 to 7.0 % by weight, in relation to the active content and in relation to the total weight of the composition.
 14. The composition according to any of the preceding claims characterized in that additionally at least one alky amphoacetate, preferably in form of the respective sodium salt is contained.
 15. The composition according to any of the preceding claims characterized in that the alky residue of the at least one alky amphoacetate is derived from plant oil, more preferably coconut oil.
 16. The composition according to any of the preceding claims characterized in that the alkyl amphoacetate is sodium cocoamphoacetate.
 17. The composition according to any of the preceding claims characterized in that the at least one alkyl amphoacetate is contained in an amount of 0.2 to 5.0 % by weight, preferably 0.5 to 3.0 % by weight, and more preferably 1.0 to 2.5 % by weight, in relation to the active content and in relation to the total weight of the composition.
 18. The composition according to any of the preceding claims characterized in that additionally at least one amino acid based surfactant, preferably at least one acyl amino acid and/or a salt thereof, more preferably potassium cocoylglycinate, is contained.
 19. The composition according to any of the preceding claims characterized in that the at least one amino acid based surfactant is contained in an amount of 1.0 to 15.0 % by weight, preferably 6.0 to 10.0 % by weight, in relation to the total weight of the composition.
 20. The composition according to any of the preceding claims characterized in that additionally at least one further nonionic surfactant, preferably at least one alkyl amide, more preferably chosen from cocamide MEA and/or cocamide DEA, is contained.

21. The composition according to any of the preceding claims characterized in that additionally the at least one further nonionic surfactant is contained in an amount of 0.05 to 2 % by weight, preferably 0.1 to 0.2 % by weight, in relation to the total weight of the composition and in relation to the active content.
22. A cosmetic product containing
 - a cosmetic cleansing composition containing
 - a combination of fatty acids and/or the respective sodium and/or potassium salts, containing lauric acid, myristic acid, palmitic acid, and/or the respective sodium or potassium salts thereof,
 - at least one nonionic surfactant, wherein the at least one nonionic surfactant is chosen from alkyl poly glycosides, and
 - at least one polyol, and
 - a packaging device, especially a pump foamer, capable of forming a foam from the cleansing composition.
23. Use of a combination of fatty acids and/or the respective sodium and/or potassium salts, containing lauric acid, myristic acid, palmitic acid, and/or the respective sodium or potassium salts thereof in a cosmetic cleansing composition containing
 - at least one nonionic surfactant, wherein the at least one nonionic surfactant is chosen from alkyl poly glycosides, and
 - at least one polyol,to form a stable foam.

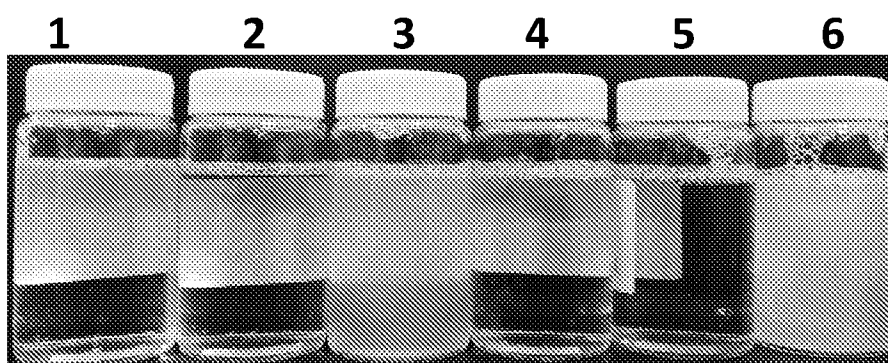


Fig. 1

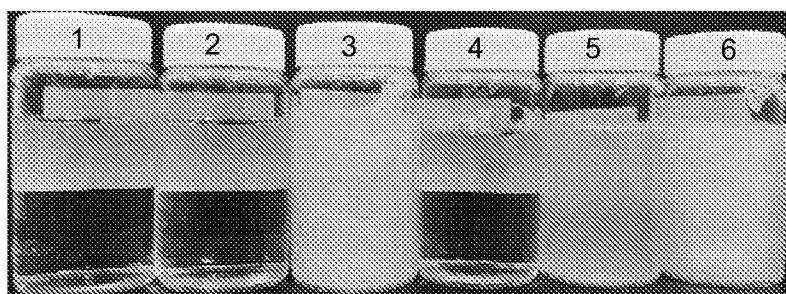


Fig. 2a



Fig. 2b

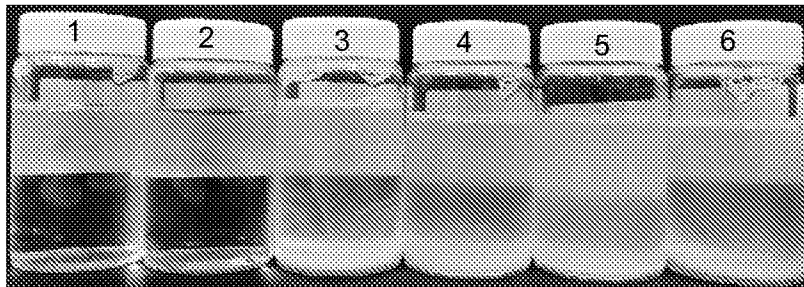


Fig. 2c

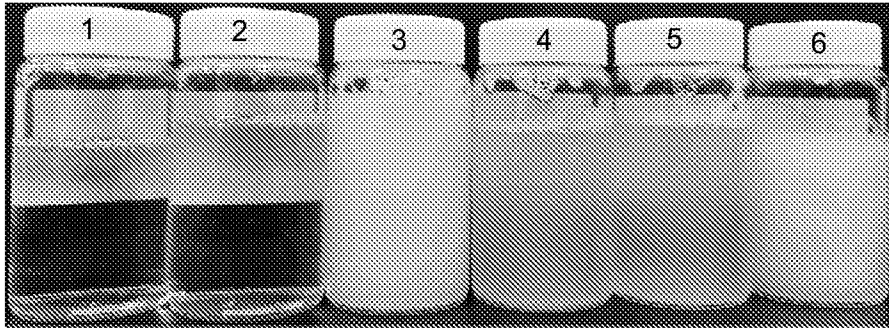


Fig. 3a

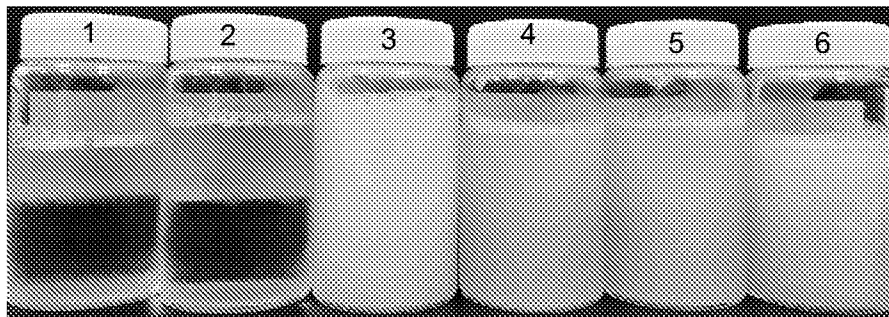


Fig. 3b

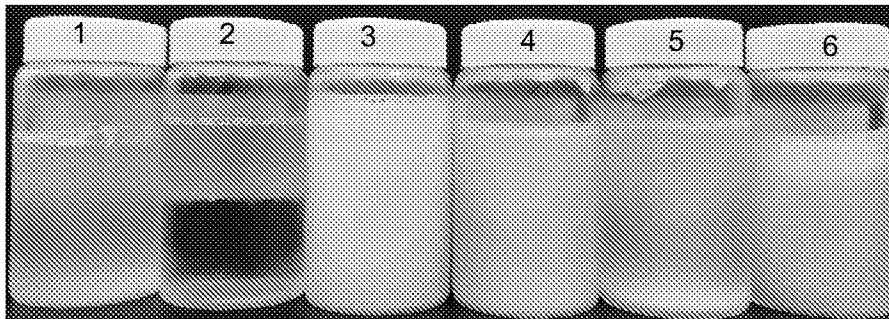


Fig. 3c

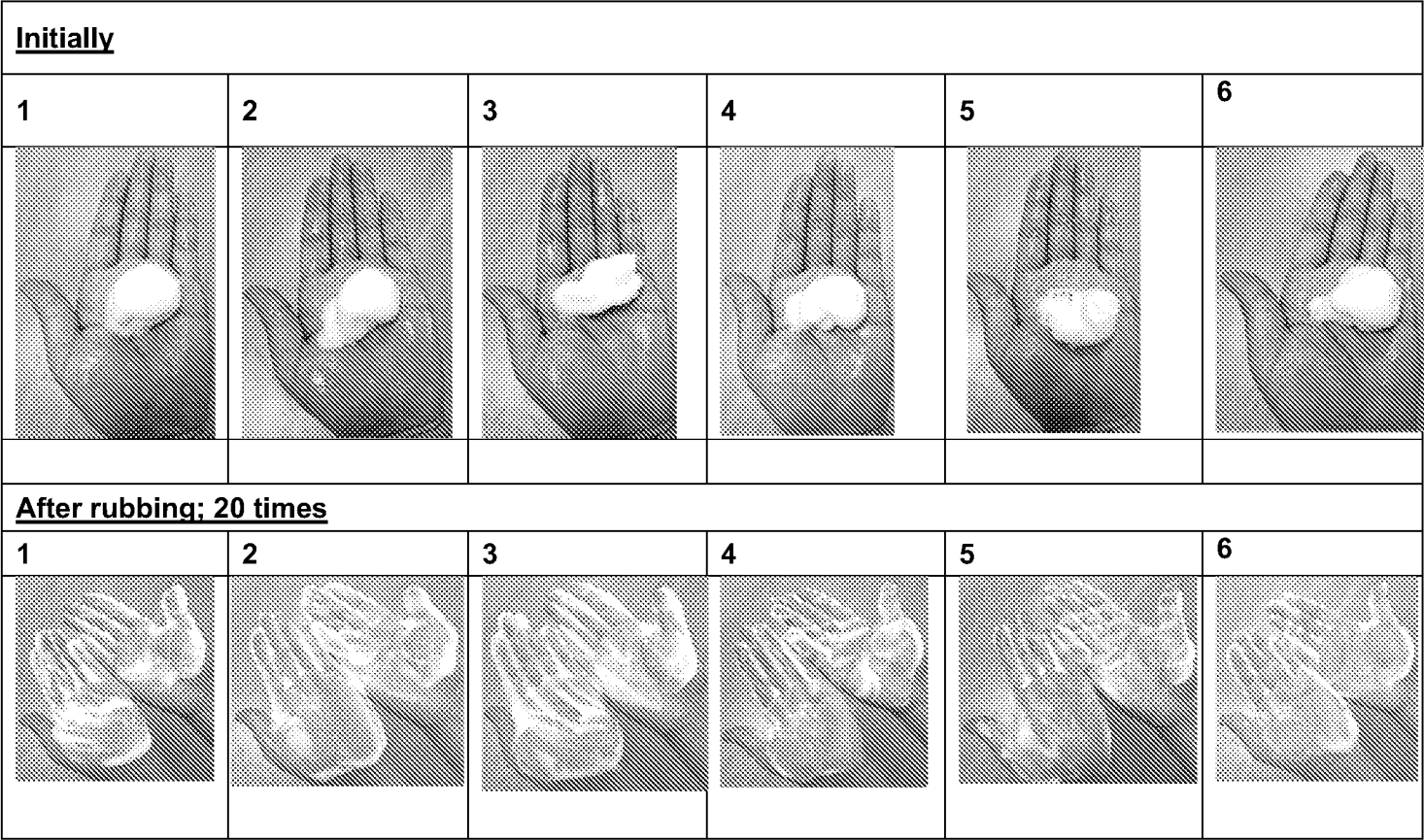


Fig. 4

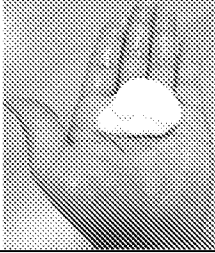
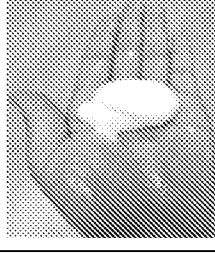
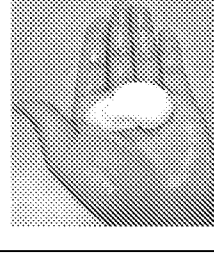
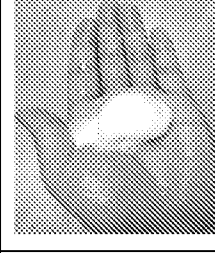
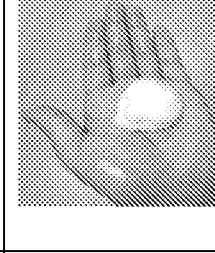
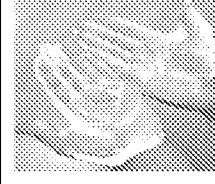
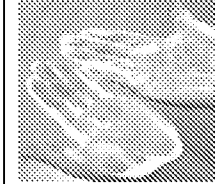
Initially				
7	8	9	10	11
				
After rubbing; 20 times				
7	8	9	10	11
				

Fig. 5

INTERNATIONAL SEARCH REPORT

International application No.

PCT/CN2019/075152**A. CLASSIFICATION OF SUBJECT MATTER**

A61K 8/36(2006.01)i; A61K 8/34(2006.01)i; A61K 8/42(2006.01)i; A61K 8/30(2006.01)i; A61K 8/18(2006.01)i; A61Q 19/10(2006.01)i

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

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

A61K,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)

Database:VEN, DWPI,CPRSABS,CNABS,CNTXT,USTXT,WOTXT,EPTXT,CNKI; Keywords:polyol,polyhydric alcohol, glycerol,glycol,soap,foam, pump,clean,wash,fatty acid,glycoside,lauric,palmitic, lauric,sodium, potassium

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	WO 2014029711 A2 (UNILEVER PLC ET AL.) 27 February 2014 (2014-02-27) Example 1, table 1, Example No. R-60-C9, page 4, line 30- page 5, line 2, page 1, lines 28-31, page 4, line 30- page 5, line 2, page 1, lines 28-31, claim 7	1-23
X	CN 108066164 A (SHANGHAI JAHWA CORP) 25 May 2018 (2018-05-25) description, table 3, example 8	1-21, 23
X	CN 108836884 A (HUNAN YUJIA COSMETICS MFG CO LTD) 20 November 2018 (2018-11-20) description, examples 1-3, paragraphs 24-33, 107-164	1, 7, 10-12, 23

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

* Special categories of cited documents:

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

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

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

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

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

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

“&” document member of the same patent family

Date of the actual completion of the international search

09 November 2019

Date of mailing of the international search report

25 November 2019

Name and mailing address of the ISA/CN

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INTERNATIONAL SEARCH REPORT
Information on patent family members

International application No.

PCT/CN2019/075152

Patent document cited in search report			Publication date (day/month/year)	Patent family member(s)			Publication date (day/month/year)
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				JP	6333253	B2	30 May 2018
				MX	352365	B	22 November 2017
				TW	201408331	A	01 March 2014
				JP	2015526451	A	10 September 2015
				TW	1586372	B	11 June 2017
CN	108066164	A	25 May 2018	None			
CN	108836884	A	20 November 2018	None			