

【DESCRIPTION】

【Invention Title】

DETERGENT COMPOSITION CONTAINING HIGH CONTENTS OF
FAT-SOLUBLE INGREDIENTS

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【Technical Field】

Disclosed is a cleansing composition.

【Background Art】

10 Cleansing compositions may be classified broadly into soap type
compositions obtained by neutralizing fatty acids with an alkalinizing agent,
soap-free type compositions including a weak acidic synthetic surfactant, and
semi-soap type compositions obtained by mixing soap-type compositions with a
synthetic surfactant. Among those, soap-type cleansing compositions are
15 known to form an abundant amount of foam upon cleansing and have
advantages such as excellent rinsing performance.

However, in a soap-type cleansing system obtained by neutralization of
a fatty acid, when such a system includes a high content of fat-soluble
ingredient, such as butter or oil, there is a problem in that the fat-soluble
20 ingredient functions as a defoaming agent to interrupt foaming and to cause a
slippery feeling of use upon rinsing. The reason is as follows. It is a material
so-called scum that realizes a fresh feeling of use upon rinsing, and the material

is produced by combination of a carboxyl group (COO-) of an anionic surfactant with a divalent metal ion (magnesium or potassium) of water. In the case of a soap-type cleansing system generating a large amount of scum, it is difficult to stabilize a high content of fat-soluble ingredients through the formulation with a neutralized fatty acid. In other words, in a soap-type cleansing system including a high content of fat-soluble ingredients, it is not possible to form scum, to prepare a formulation containing a high content of fat-soluble ingredients, and to provide a fresh feeling upon rinsing due to the slippery feeling of use caused by the fat-soluble ingredients themselves.

Thus, in the case of the conventional cleansers containing a high content of fat-soluble ingredients, there has been used a system emulsified by using a surfactant having no carboxyl (COO-) group as a base. Another cleansing composition according to the related art is disclosed in Korean Patent Publication No. 10-0760973.

【Disclosure】

【Technical Problem】

A technical problem to be solved by the present disclosure is to provide a cleansing composition including a stabilized emulsion system containing a high content of fat-soluble ingredient in a soap-type system capable of realizing an abundant amount of foam and excellent rinsing performance.

Another technical problem to be solved by the present disclosure is to provide a cleansing composition providing a fresh feeling upon rinsing by virtue

of excellent foaming ability and defoaming ability, while stabilizing a high content of fat-soluble ingredient in a soap-type system.

【Technical Solution】

5 In one general aspect, there is provided a cleansing composition having enhanced foaming ability and defoaming ability upon rinsing, the cleansing composition including: a fat-soluble ingredient; an anionic surfactant; and a crosspolymer of acrylate and C10-C30 alkyl acrylate (acrylate/C10-C30 alkyl acrylate crosspolymer).

10 According to an embodiment, the fat-soluble ingredient may be present in an amount of 0.01-50 parts by weight based on 100 parts by weight of the total cleansing composition.

 According to another embodiment, the fat-soluble ingredient may be at least one selected from the group consisting of oil, butter and wax.

15 According to still another embodiment, the anionic surfactant may have a carboxyl group.

 According to still another embodiment, the anionic surfactant may be at least one selected from the group consisting of ammonium laureth sulfate, cocoamidopropylbetaine, ammonium lauryl sulfate and fatty acid soap.

20 According to still another embodiment, the fatty acid soap may be at least one selected from the group consisting of lauric acid soap, myristic acid soap, palmitic acid soap, stearic acid soap, caprylic acid soap, capric acid soap and oleic acid soap.

According to still another embodiment, the fatty acid soap may include:
at least one fatty acid selected from the group consisting of lauric acid, myristic
acid, palmitic acid, stearic acid, caprylic acid, capric acid and oleic acid; and at
least one alkalinizing agent selected from the group consisting of potassium
5 hydroxide, sodium hydroxide, triethanolamine and methylglycamine.

According to yet another embodiment, the anionic surfactant and the
crosspolymer of acrylate and C10-C30 alkyl acrylate (acrylate/C10-C30 alkyl
acrylate crosspolymer) may be present in an amount of 0.01-30 parts by weight
and 0.01-2 parts by weight, respectively, based on 100 parts by weight of the
10 total cleansing composition.

【Advantageous Effects】

According to the embodiments of the present disclosure, there is
provided a cleansing composition including a stabilized emulsion system
15 containing a high content of fat-soluble ingredient in a soap-type system
capable of realizing an abundant amount of foam and excellent rinsing
performance.

There is also provided a cleansing composition providing a fresh feeling
upon rinsing by virtue of excellent foaming ability and defoaming ability, while
20 stabilizing a high content of fat-soluble ingredient in a soap-type system.

【Best Mode】

Exemplary embodiments now will be described more fully hereinafter.

In one aspect, there is provided a cleansing composition having enhanced foaming ability and defoaming ability upon rinsing, the cleansing composition including: a fat-soluble ingredient; an anionic surfactant; and a crosspolymer of acrylate and C10-C30 alkyl acrylate (acrylate/C10-C30 alkyl acrylate crosspolymer).
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In another aspect, there is provided a cleansing method including: applying a composition including a fat-soluble ingredient, an anionic surfactant, and a crosspolymer of acrylate and C10-C30 alkyl acrylate (acrylate/C10-C30 alkyl acrylate crosspolymer) to a subject. For example, the cleansing method
10 includes applying the composition to the skin of a subject.

In still another aspect, there is provided a composition for use in cleansing a subject, including: a fat-soluble ingredient; an anionic surfactant; and a crosspolymer of acrylate and C10-C30 alkyl acrylate (acrylate/C10-C30 alkyl acrylate crosspolymer). For example, the composition may be applied to
15 the skin of a subject.

According to an embodiment, the cleansing composition may be a cleaning, washing or cleansing composition applicable to the whole portions of the body, including the face, for the purpose of cleanliness or beauty treatment.

According to another embodiment, the fat-soluble ingredient may be at
20 least one selected from the group consisting of naturally occurred vegetable oils, synthetic oils, naturally occurred butters, synthetic butters, naturally occurred waxes and synthetic waxes.

According to still another embodiment, the anionic surfactant may have a carboxyl group.

According to still another embodiment, the anionic surfactant may be at least one selected from the group consisting of ammonium laureth sulfate, cocoamidopropylbetaine, ammonium lauryl sulfate and fatty acid soap.

According to still another embodiment, the fatty acid soap may be one
5 produced by neutralizing a fatty acid with an alkalinizing agent, and may include soap produced from a C4-C28 fatty acid, particularly soap produced from a C12 or higher fatty acid.

According to still another embodiment, the fatty acid soap may be at least one selected from the group consisting of lauric acid soap, myristic acid
10 soap, palmitic acid soap, stearic acid soap, caprylic acid soap, capric acid soap and oleic acid soap.

According to still another embodiment, the fatty acid soap may include: at least one fatty acid selected from the group consisting of lauric acid, myristic acid, palmitic acid, stearic acid, caprylic acid, capric acid and oleic acid; and at
15 least one alkalinizing agent selected from the group consisting of potassium hydroxide, sodium hydroxide, triethanolamine and methylglycamine.

According to still another embodiment, the fat-soluble ingredient may be present in an amount of 0.01-50 parts by weight based on 100 parts by weight of the total cleansing composition. In a variant, the fat-soluble ingredient may
20 be present in an amount of at least 0.01 parts by weight, at least 0.1 parts by weight, at least 1 part by weight, at least 5 parts by weight, at least 10 parts by weight, at least 15 parts by weight, at least 20 parts by weight, at least 25 parts by weight or at least 30 parts by weight, and at most 50 parts by weight, at most 45 parts by weight, at most 40 parts by weight, at most 35 parts by weight or at

most 30 parts by weight, based on 100 parts by weight of the total cleansing composition. Particularly, the fat-soluble ingredient may be present at a high content of 10-50 parts by weight, 15-45 parts by weight or 20-40 parts by weight based on 100 parts by weight of the total cleansing composition.

5 According to still another embodiment, the anionic surfactant may be present in an amount of 0.01-30 parts by weight based on 100 parts by weight of the total cleansing composition. In a variant, the fat-soluble ingredient may be present in an amount of at least 0.01 parts by weight, at least 0.1 parts by weight, at least 1 part by weight, at least 5 parts by weight, at least 10 parts by weight, at least 15 parts by weight or at least 20 parts by weight, and at most 30
10 parts by weight, at most 25 parts by weight or at most 20 parts by weight, based on 100 parts by weight of the total cleansing composition. Particularly, the anionic surfactant may be present in an amount of 5-30 parts by weight or 10-25 parts by weight based on 100 parts by weight of the total cleansing
15 composition.

 According to still another embodiment, the crosspolymer of acrylate and C10-C30 alkyl acrylate (acrylate/C10-C30 alkyl acrylate crosspolymer) may be present in an amount of 0.01-2 parts by weight based on 100 parts by weight of the total cleansing composition. In a variant, the acrylate/C10-C30 alkyl
20 acrylate crosspolymer may be present in an amount of at least 0.01 parts by weight, at least 0.05 parts by weight, at least 0.1 parts by weight, at least 0.2 part by weight, at least 0.3 parts by weight, at least 0.4 parts by weight or at least 0.5 parts by weight, and at most 2 parts by weight, at most 1.5 parts by weight, at most 1.4 parts by weight, at most 1.3 parts by weight, at most 1.2

parts by weight, at most 1.1 parts by weight, at most 1 part by weight, at most 0.9 parts by weight, at most 0.8 parts by weight, at most 0.7 parts by weight, at most 0.6 parts by weight or at most 0.5 parts by weight, based on 100 parts by weight of the total cleansing composition. Particularly, the acrylate/C10-C30 alkyl acrylate crosspolymer may be present in an amount of 0.1-2 parts by weight, 0.1-1.5 parts by weight or 0.1-1 parts by weight based on 100 parts by weight of the total cleansing composition so as to stabilize such a high content of fat-soluble ingredient and to enhance foaming ability and defoaming ability upon rinsing.

10 According to yet another embodiment, the composition may be a cosmetic composition.

 The cleansing composition according to the present disclosure includes a fatty acid neutralized to 70-80% and is stabilized with the non-neutralized fatty acid. Thus, it is possible to realizing speedy rinsing performance by virtue of rapid defoaming upon rinsing and to provide a fresh feeling of use free from a slippery feeling, while stabilizing a high content of fat-soluble ingredient in a soap-type system and generating an abundant amount of foam.

【Modes for Invention】

20 Hereinafter, the present disclosure will be explained in detail with reference to examples. However, it will be understood by those skilled in the art that the following examples are for illustrative purposes only and not intended to limit the scope of this disclosure.

Examples

Facial cleansing compositions were prepared according to the following Table 1. Then, the facial cleansing compositions were compared with each other in terms of foaming ability, defoaming ability upon rinsing and freshness upon rinsing according to the following test methods.

Particularly, a facial cleansing composition was obtained according to the conventional method including neutralizing a fatty acid with an acrylate/C10-C30 alkyl acrylate crosspolymer in an agitator under the conditions of 300-500 rpm, and emulsifying a high content of oil, butter or wax.

As a result, it is shown that Comparative Example 3 to which an acrylate/C10-C30 alkyl acrylate crosspolymer is not added in a soap-type cleansing system cannot form a formulation unlike the other compositions. Therefore, it can be seen that an acrylate/C10-C30 alkyl acrylate crosspolymer stabilizes an emulsion system in a soap-type cleansing system.

Table 1

	Comp. Ex. 1	Comp. Ex. 2	Comp. Ex. 3	Ex. 1	Ex. 2	Ex. 3
Ammonium laureth sulfate	5	0	0	0	0	0
Cocoamidopropyl	5	0	0	0	0	0

betaine						
Ammonium lauryl sulfate	5	0	0	0	0	0
Lauric acid	0	5	5	5	5	5
Myristic acid	0	5	5	5	5	5
Palmitic acid	0	2.5	2.5	2.5	2.5	2.5
Stearic acid	0	2.5	2.5	2.5	2.5	2.5
Potassium hydroxide	0	4.5	4.5	4.5	4.5	4.5
Acrylate/C10-C30 alkyl acrylate crosspolymer	0	0.5	0	0.5	0.5	0.5
Sunflower oil	0	0	0	20	0	0
Shea butter	0	0	0	0	20	0
Carnauba wax	0	0	0	0	0	20
Water	Balance	Balance	Balance	Balance	Balance	Balance
total	To 100	To 100	To 100	To 100	To 100	To 100

Test Example 1. Foaming Ability

Foaming ability was determined by forming 250 mL of a 1% facial cleansing composition at a temperature of 25-30°C and using a SITA instrument. The facial cleansing composition was agitated 10 times for an agitation time of 20 seconds under a rotation per minute of 800 m⁻¹. After the last agitation (10th agitation), the height of foam was measured and the results were shown in the following Table 2.

Table 2

	Comp. Ex. 1	Comp. Ex. 2	Ex. 1	Ex. 2	Ex. 3
Foaming ability (unit: mL)	716	691	672	602	556

As a result, it is shown that addition of an acrylate/C10-C30 alkyl acrylate crosspolymer to a soap-type cleansing system containing a high content of fat-soluble ingredient provides foaming ability equivalent to the foaming ability of the conventional anionic surfactant (Comparative Example 1) and that of the cleansing composition (Comparative Example 2) containing no fat-soluble ingredient. Particularly, Example 1 shows significantly high foaming ability.

Test Example 2. Defoaming ability upon Rinsing

Defoaming ability upon rinsing was carried out for five panels subjected

to a facial cleanser sensual test exercise and was represented by the number of rinsing hands until foam disappears during rinsing. Particularly, 1g of each of the facial cleansing compositions obtained from the above Examples was taken by hands, and was allowed to generate foam 15 times by both hands with 0.2-
5 0.3 g of tap water. Then, the time point where foam disappears by washing the hands with flowing tap water was measured. The results were shown in the following Table 3 in terms of the number of rinsing hands.

Table 3

	Comp. Ex. 1	Comp. Ex. 2	Ex. 1	Ex. 2	Ex. 3
Panel 1 (unit: number of rinsing)	9	6	4	3	2
Panel 2 (unit: number of rinsing)	8	5	5	4	3
Panel 3 (unit: number of rinsing)	10	7	4	3	3
Panel 4	7	5	5	2	3

(unit: number of rinsing)					
Panel 5 (unit: number of rinsing)	10	6	3	4	3
Average of numbers of rinsing	8.8	5.8	4.2	3.2	2.8

As a result, addition of an acrylate/C10-C30 alkyl acrylate crosspolymer in a soap-type cleansing system containing a high-content of fat-soluble ingredient allows significantly rapid defoaming upon the contact with water, despite such a high-content of fat-soluble ingredient, thereby realizing speedy cleansing performance. In addition, it is shown that such an effect is significantly higher as compared to the conventional anionic surfactant composition to which an acrylate/C10-C30 alkyl acrylate crosspolymer is not added according to Comparative Example 1.

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Test Example 3. Freshness upon Rinsing

Freshness upon rinsing was carried out for five panels subjected to a facial cleanser sensual test exercise and was represented by a point evaluated in terms of an extent of freshness upon rinsing after testing a feeling of use.

15 Particularly, 1g of each of the facial cleansing compositions obtained from the

above Examples was taken by hands, and was allowed to generate foam 15 times by both hands with 0.2-0.3 g of tap water. Then, the point where freshness (i.e., a crisp feeling) is revealed by washing the hands with flowing tap water was measured. The results were shown in the following Table 4 in terms of an extent of freshness. The freshness was evaluated in a scale ranging from 1 (weak freshness) to 15 (strong freshness).

Table 4

	Comp. Ex. 1	Comp. Ex. 2	Ex. 1	Ex. 2	Ex. 3
Panel 1 (unit: freshness extent)	3	8	9	11	13
Panel 2 (unit: freshness extent)	4	7	8	12	12
Panel 3 (unit: freshness extent)	3	8	10	12	10
Panel 4	5	8	9	10	11

(unit: freshness extent)					
Panel 5 (unit: freshness extent)	2	9	12	13	12
Average of freshness extents	3.4	8	9.6	11.6	11.6

As a result, addition of an acrylate/C10-C30 alkyl acrylate crosspolymer in a soap-type cleansing system containing a high-content of fat-soluble ingredient provides an extent of freshness equivalent to the extent of freshness of the composition (Comparative Example 2) containing no fat-soluble ingredient. In addition, it is shown that such an effect is significantly higher as compared to the conventional anionic surfactant composition to which an acrylate/C10-C30 alkyl acrylate crosspolymer is not added according to Comparative Example 1.

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While the exemplary embodiments have been shown and described, it will be understood by those skilled in the art that various changes in form and details may be made thereto without departing from the scope of this disclosure as defined by the appended claims. Therefore, it is intended that the scope of the present disclosure includes all embodiments falling within the spirit and

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scope of the appended claims.

CLAIMS

Claim 1

A soap-type cleansing composition having enhanced foaming ability and defoaming ability upon rinsing comprising:

a fat-soluble ingredient;

a fatty acid;

an alkalinizing agent; and

a crosspolymer of acrylate and C10-C30 alkyl acrylate (Acrylate/C10-C30 Alkyl Acrylate Crosspolymer),

wherein the fat-soluble ingredient is present in an amount of 0.01-50 parts by weight based on 100 parts by weight of the total cleansing composition.

Claim 2

The soap-type cleansing composition according to claim 1, wherein the fat-soluble ingredient is present in an amount of 15-45 parts by weight based on 100 parts by weight of the total cleansing composition.

Claim 3

The soap-type cleansing composition according to claim 2, wherein the fat-soluble ingredient is present in an amount of 20-40 parts by weight based on 100 parts by weight of the total cleansing composition.

Claim 4

The soap-type cleansing composition according to claim 1, wherein the fat-soluble ingredient is at least one selected from the group consisting of oil, butter and wax.

Claim 5

The soap-type cleansing composition according to claim 1, wherein the fatty acid is at least one selected from the group consisting of lauric acid, myristic acid, palmitic acid, stearic acid, caprylic acid, capric acid and oleic acid.

Claim 6

The soap-type cleansing composition according to claim 1, wherein the alkalinizing agent is at least one selected from the group consisting of potassium hydroxide, sodium hydroxide, triethanolamine and methylglycamine.

Claim 7

The soap-type cleansing composition according to claim 1, wherein the crosspolymer of acrylate and C10-C30 alkyl acrylate (Acrylate/C10-C30 Alkyl Acrylate Crosspolymer) is present in an amount of 0.01-2 parts by weight based on 100 parts by weight of the total cleansing composition.