

TITLE OF THE INVENTION

CLEANSING COMPOSITION CONTAINED IN FOAMER CONTAINER

BACKGROUND OF THE INVENTION

5 Field of the Invention

The present invention relates to a cleansing composition contained in a foamer container which has a creamy foam quality and consistency, excels in low-temperature storage stability and gives moist skin texture after cleansing with it.

10 Description of the Related Art

A cleansing agent filled in a foamer container is generally used by discharging foam from the foamer container, therefore, it excels in ease of use and used as not only a cleansing agent intended for regions of human body such as hair shampoos, hand soaps, and facial cleansing agents, but also a cleansing agent
15 used, for example, for clothing, and kitchen.

Especially when a cleansing agent is used for skin cleansing, there is a tendency that the one having consistency as well as fine textured and creamy foam quality and giving moist skin texture after cleansing with it is preferably used.

On the other hand, with respect to skin cleansing agents in solid form,
20 anionic surfactants having a Krafft point of 20°C or more such as sodium salts of lauric acid, myristic acid, palmitic acid are utilized from the perspective of its creamy foam quality, consistency, and high-productivity. In addition, a granulated cleansing agent is disclosed in Japanese Patent Application Laid-Open (JP-A) No. 2003-253295, which is used primarily for body cleansing and has not
25 only a creamy foam quality but also effect of giving excellent skin texture after

cleansing with it by including coconut oil isethionate and sulfosuccinate salt therein.

A surfactant having a high Krafft point has an advantage of creamy foam quality, however, when it is used as a cleansing agent composition contained in
5 foamer container, there are problems that crystals are precipitated in a long-term storage under a low-temperature condition, foam discharged from the foamer container is inhomogeneous, and it is impossible to push out foam from the foamer container.

To solve the problem, a cleansing agent contained in a foamer container is
10 proposed, which is capable of pushing out homogeneous foam and easily pushing out foam from the foamer container even under a low-temperature condition by defining the contained salt, the type and the content of surfactants or the like (see Japanese Patent Application Laid Open (JP-A) Nos. 08-92064, 08-143899, 11-35972, 2003-55699, and 2004-137247). However, even with these proposals, there is a
15 problem that an anionic polymer or a nonionic polymer must be included in the cleansing agent in order to impart consistency to the quality of foam. Further, it has a problem that skin texture after cleansing is not necessarily excellent.

SUMMARY OF THE INVENTION

20 It is therefore an object of the present invention to provide a cleansing agent contained in a foamer container which has a creamy quality and foam consistency, excels in low-temperature storage stability in spite of including a surfactant having a Krafft point of 20°C or more and is capable of giving moist skin texture after cleansing with it.

25 To solve the problems, as a result of keen examinations provided by the

inventors of the present invention, it is found that it is possible to obtain a cleansing agent contained in a foamer container which has a creamy quality and consistency, excels in low-temperature storage stability in spite of including a surfactant having a Krafft point of 20°C or more and is capable of giving moist skin texture after cleansing with it by filling in a foamer container a cleansing fluid which comprises a combination of components of a N-acylamino acid anionic surfactant (A), an anionic surfactant having a Krafft point of 20°C or more (B) other than the N-acylamino acid anionic surfactant (A), and any one of compounds (C) selected from amphoteric surfactants and semi-polar surfactants, and a polyvalent alcohol (D) in a content of 22% by mass to 50% by mass relative to the cleansing composition. The findings led to the accomplishment of the present invention.

The present invention is based on the findings brought by the inventors, and the means for solving the problems is as follows.

According to the present invention, a cleansing composition contained in a foamer container comprises a N-acylamino acid anionic surfactant (A), an anionic surfactant having a Krafft point of 20°C or more (B) other than the N-acylamino acid anionic surfactant (A), and any one of compounds (C) selected from amphoteric surfactants and semi-polar surfactants, and a polyvalent alcohol (D) in a content of 22% by mass to 50% by mass relative to the cleansing composition, and the cleansing composition is contained in a foamer container.

In the cleansing composition contained in the foamer container of the present invention, it is preferably an aspect of which the N-acylamino acid anionic surfactant (A) comprises one or more selected from the group consisting of N-lauroyl- β -alanine and salts thereof, N-myristyl- β -alanine and salts thereof,

N-cocoyl-β-alanine and salts thereof, N-lauroyl glutamic acid and salts thereof, N-cocoyl glycine and salts thereof; an aspect of which the content of the N-acylamino acid anionic surfactant (A) in the cleansing composition is 0.1% by mass to 20% by mass.

5 The cleansing composition contained in the foamer container is preferably an aspect of which the anionic surfactant having a Krafft point of 20°C or more (B) comprises one or more selected from the group consisting of potassium myristate, potassium palmitate, sodium myristate, sodium N-palmitoylmethyl taurine, potassium lauryl sulfoacetate, polyoxyethylene (1) disodium lauryl sulfosuccinate,
10 and sodium N-cocoyl methyl taurine.

In addition, it is preferably an aspect of which the content of the anionic surfactant having a Krafft point of 20°C or more (B) is 1% by mass to 10% by mass; an aspect of which the content of the at least one compound selected from amphoteric surfactants and semi-polar surfactants in the cleansing composition is
15 0.5% by mass to 20% by mass; an aspect of which the content of the polyvalent alcohol (D) in the cleansing composition is 25% by mass to 35% by mass; an aspect further comprising a nonionic surfactant (E); and an aspect of which the nonionic surfactant (E) is represented by the following Formula (1):



20 In Formula (1), R¹ represents an alkyl or an alkenyl group having 8 to 22 carbon atoms in a straight chain or a branched chain form, and 'n' represents an integer number from 1 to 80.

DESCRIPTION OF THE PREFERRED EMBODIMENTS

25 (Cleansing Composition Contained in Former Container)

The cleansing composition contained in a foamer container of the present invention comprises a N-acylamino acid anionic surfactant (A), an anionic surfactant having a Krafft point of 20°C or more (B) other than the N-acylamino acid anionic surfactant (A), and any one of compounds (C) selected from amphoteric surfactants and semi-polar surfactants, and a polyvalent alcohol (D), and the cleansing composition is contained in a foamer container, and the cleansing composition further comprises a nonionic surfactant (E) and suitably selected other components in accordance with the necessity.

- N-Acylamino Acid Anionic Surfactant (A) -

Examples of the N-acylamino acid anionic surfactant (A) include N-lauroyl- β -alanine or salts thereof, N-myristyl- β -alanine or salts thereof, N-cocoyl- β -alanine or salts thereof, N-lauroyl glutamic acid or salts thereof, N-cocoyl glycine or salts thereof, N-lauroyl-N-methyl- β -alanine or salts thereof, N-myristoyl-N-methyl- β -alanine or salts thereof, N-lauroyl-N-methylglycine or salts thereof, N-myristoyl glutamic acid or salts thereof, N-lauroyl aspartic acid or salts thereof, and N-cocoyl alanine or salts thereof. Each of these N-acylamino acid anionic surfactants may be used alone or in combination with two or more. N-acylamino acid anionic surfactants include L modification, D modification, and racemic modification, and any of these types can be used in the present invention.

Examples of the salts include alkali metal salts, and alkanolamine salts. Examples of the alkali metal salts include sodium salts, and potassium salts. Examples of the alkanolamine salts include monoethanol amine salts, and triethanol amine salts.

Preferred examples of the N-acylamino acid anionic surfactant (A) include potassium N-lauroyl- β -alanine, potassium N-myristyl- β -alanine,

N-cocoyl- β -alanine triethanol amine, N-lauroyl-N-methyl- β -alanine or salts thereof, N-myristoyl-N-methyl- β -alanine or salts thereof, N-lauroyl-N-methylglycine or salts thereof, N-lauroyl glutamic acid or salts thereof, N-myristoyl glutamic acid or salts thereof, N-lauroyl-aspartic acid or salts thereof, an N-cocoyl glycine or salts thereof. Examples of the salts include potassium salts and triethanol amine salts.

The content of the N-acylamino acid anionic surfactant (A) in the cleansing composition contained in the foamer container is preferably 0.1% by mass to 20% by mass and more preferably 2% by mass to 15% by mass. When the content is less than 0.1% by mass, improving effect of low-temperature storage stability may not be sufficient. When the content is more than 20% by mass, a slimy texture remains after rinsing, which may impair usability.

- Anionic Surfactant having a Krafft point of 20°C or more (B) -

Here, the Krafft point is defined as a temperature at which the solubility of an ionic surfactant is equal to the critical micelle concentration (cmc). In typically used ionic surfactants, the water-solubility thereof is very low and less than the Krafft point and regarded as a hardly-soluble substance. In addition, it is known that with a concentration more than the critical micelle concentration (cmc), the solution temperature of the ionic surfactant does not differ so much from the Krafft point as long as the dissolved condition of the ionic surfactant is same. Thus, in the present invention, the Krafft point is defined as a value which is measured by the following measurement method.

In a test tube, an anionic surfactant solution with a concentration of 1.0% by mass was poured, the test tube was stored in a thermostat bath which was set at a temperature of -20°C for 1 day to freeze the anionic surfactant solution. The

sample was placed to a water bath which was set at a temperature of 5°C, and the temperature was raised by 1°C per hour. When there was no insoluble matter, the Krafft point was regarded as 5°C or less, and when there was any insoluble matter, the temperature at which the insoluble matter was dissolved was regarded as the Krafft point. With respect to a surfactant having a high pH dependency, the pH of the surfactant was adjusted to the pH generally used for cleansing agents and then the Krafft point was measured. Specifically, an alkali such as potassium hydroxide was used to adjust the pH of the surfactant to pH 10.0. With respect to any other neutralized surfactants, a commercially available surfactant diluted with purified water to a 1.0% by mass solution was prepared, and the Krafft point of the solution was measured without adjusting the pH.

Examples of the anionic surfactant having Krafft point of 20°C or more (B) include potassium myristate, potassium palmitate, sodium myristate, sodium N-palmitoyl methyl taurine, potassium lauryl sulfoacetate, polyoxyethylene (1) disodium lauryl sulfosuccinate, and sodium N-cocoyl methyl taurine. Among them, potassium myristate and potassium palmitate are particularly preferable. Each of these anionic surfactants may be used alone or in combination with two or more.

The content of the anionic surfactant having a Krafft point of 20°C or more (B) in the cleansing composition contained in the foamer container is preferably 1% by mass to 10% by mass and more preferably 2% by mass to 8% by mass. When the content is less than 1% by mass, consistency of foam may not be sufficient. When the content is more than 10% by mass, viscosity of the cleansing agent filled in the foamer container is higher, which may leads to nonuniform quality of foam, and it is impossible to push out foam from the foamer container.

- Amphoteric Surfactant and Semi-Polar Surfactant (C) -

The amphoteric surfactant and semi-polar surfactant (C) may be selected from generally used amphoteric surfactants and semi-polar surfactants. Preferred examples of the amphoteric surfactant and semi-polar surfactant include
5 imidazoline type surfactants such as amide amine type; amide amino acid salt; carbo-betaine type surfactants such as alkyl betaine, and alkyl amide betaine; sulfo-betaine surfactants such as alkyl sulfo-betaine, and alkyl hydroxy sulfo-betaine; phospho-betaine; alkyl tertiary amine oxides; and alkyl tertiary phosphone oxides. Among these surfactants, in particular, carbo-betaine type
10 surfactants, and acyl tertiary amine oxides are preferable, and carbo-betaine type surfactants and alkyl tertiary amine oxides that have been subjected to a demineralization are more preferably used. Each of these surfactants may be used alone or in combination with two or more.

Examples of the imidazoline type include coconut oil
15 alkyl-N-hydroxyethyl-imidazolinium betaines.

Examples of the carbo-betaine type include lauryl dimethyl aminoacetate betaines as alkyl betaines, and coconut oil fatty acid amide propyl betaines as alkyl amide betaines.

Examples of the sulfo-betaine include coconut oil fatty acid dimethyl
20 amino hydroxy sulfo-betaines as alkyl sulfo-betaines.

Examples of the phospho-betaine include lauryl dimethyl amine oxides.

Examples of the alkyl tertiary amine oxides include lauryl dimethyl amine oxides.

Examples of the alkyl tertiary phosphone oxides include lauryl dimethyl
25 phosphone oxides.

alcohols may be used alone or in combination with two or more.

The content of the polyvalent alcohol (D) in the cleansing composition contained in the foamer container is preferably 22% by mass to 50% by mass and more preferably 25% by mass to 35% by mass. When the content is less than 22%
5 by mass, improving effect of low-temperature storage stability may not be sufficient. When the content is more than 50% by mass, a slimy texture remains after rinsing, which may impair usability.

- Nonionic Surfactant (E) -

A cleansing composition contained in a foamer container of the present
10 invention may comprise a suitably selected nonionic surfactant for the purpose of obtaining excellent skin texture after cleansing.

The nonionic surfactant may be suitably selected from the compounds generally used as nonionic surfactants, and examples of the nonionic surfactant include polyoxyalkylene adduct type nonionic surfactants, monoethanol amide or
15 dimethanol amide nonionic surfactants, saccharide nonionic surfactants, and glycerin nonionic surfactants. Each of these nonionic surfactants may be used alone or in combination with two or more.

The nonionic surfactants of polyoxyalkylene adducts include one polyoxyalkylene adduct type, and two or more types of different polyoxyalkylene
20 adducts.

Examples of the nonionic surfactants of one polyoxyalkylene adduct type include polyoxyethylene lauryl ethers, polyoxyethylene sorbitan monoolate, polyethylene glycol fatty acid esters, and hardened castor oil with polyoxyethylene.

25 Examples of the nonionic surfactants of two or more types of different

polyoxyalkylene adducts include polyoxypropylene-polyoxyethylene lauryl ethers.

Examples of the monoethanol or dimethanol amide nonionic surfactant include lauric acid monoethanol amide, coconut oil fatty acid dimethanol amide,
5 and N-polyhydroxyalkyl fatty acid amide.

Examples of the saccharide nonionic surfactants include alkyl saccharide surfactants being saccharide ether surfactants, saccharide amide surfactants, sorbitan fatty acid ester surfactants, and sucrose fatty acid ester surfactants.

Examples of the alkyl saccharide surfactants include compounds
10 represented by the following Formula (3)



In Equation (3), R^2 represents an alkyl, an alkenyl or an alkylphenyl group having 6 to 18 carbon atoms in a straight chain or a branched chain form, R^3 represents an alkylene group having 2 to 4 carbon atoms, G_s represents a reducing
15 sugar having 5 to 6 carbon atoms, and 'r' represents an integer number from 1 to 10.

Examples of the saccharide amide surfactants include N-methyl alkyl glucamides such as N-methyl lauryl glucamides.

Examples of the sorbitan fatty acid ester surfactants include sorbitan
20 monoisostearates, and sorbitan monooleates.

Examples of the sucrose fatty acid ester surfactant include sucrose ester laurate, sucrose monostearate, and POP sucrose monolaurate.

Examples of the glycerin nonionic surfactant include glycerin sesquioleate, monoglycerin fatty acid ester nonionic surfactant such as polyoxyethylene
25 glyceryl monostearate, fatty acid ester type polyglycerin nonionic surfactants such

absorbers, animals and plants extracts or derivatives thereof, dyes, perfumes, and pigments.

Examples of raw materials of perfumes used for the other components include those described in Japanese Patent Application Laid-Open (JP-A) No. 5 2002-128658.

It should be noted that the other components are preferably used to the extent where the objects of the present invention are not inhibited.

- Viscosity -

The viscosity of the cleansing composition contained in the foamer 10 container is preferably 100mPa·s or less and more preferably 50mPa·s or less because the cleansing composition is filled in a foamer container for use.

- Foamer Container -

For the foamer container in which the cleansing composition is filled, for example, there are the following containers.

15 Examples of containers in which a certain amount of a cleansing composition is mixed with a certain amount of air to expand foam and discharge homogenous and fine textured foam through a sheet-like porous film (mesh) include foamer pumps which discharge foam by pressing down the head of a cap equipped with a pumping function by hand; and squeeze containers which 20 discharge foam by squeezing the body of a flexible container.

In addition, examples of containers which discharge a cleansing composition in homogenous, fine textured and foamy conditions through an injection aperture having a specific diameter include mist dispensers which discharge foamy foam by pressing down a nozzle part, and trigger spray 25 containers which have a blast nozzle and discharge foamy foam by pressurizing

the content fluid with a trigger.

The sheet-like porous film preferably has 100 meshes or more, more preferably has 100 meshes to 400 meshes, and still more preferably 200 meshes to 350 meshes from the perspective of foam formation. Further, from the same perspective, two sheet-like porous films are preferably used.

Preferably, specific examples of the foamer container include those described in Japanese Patent Application Laid-Open (JP-A) Nos. 07-315463 and 08-230961.

- Production Method of a Cleansing Composition Contained in a Foamer Container -

The production method of the cleansing composition contained in the foamer container of the present invention is not particularly limited and may be suitably selected in accordance with the intended use.

In the cleansing composition contained in the foamer container of the present invention, a salt induced from fatty acid in the above-noted carboxylate salt by a conventional method may be compounded as it is or a fatty acid in the carboxylate salt and alkali may be separately compounded to be neutralized.

The apparatus for preparing the cleansing composition contained in the foamer container of the present invention is not particularly limited, may be suitably selected in accordance with the intended use, and for example, a stirring machine having a shearing force and comprising a plurality of stirring blades such as propellers, turbines, and dispersing devices which are capable of mixing the entire system are preferably used, and an agihomo-mixer, contra-flow mixer, and High-Blood Mixer or the like are more preferably used.

- Applications -

For applications of the cleansing composition contained in the foamer container, it is suitably used, for example, for skin cleaners, because it has a creamy foam quality and consistency, excels in low-temperature storage stability, and gives moist skin texture after cleansing with it.

5 Hereinafter, the present invention will be described in detail referring to specific examples, however, the present invention is not limited to the disclosed examples. It should be noted that those represented by "%" in the examples be construed as those represented by "% by mass". In addition, perfumes A, B, C, and D used in Examples 1 to 8, Comparative Examples 1 to 4, and used in
10 Examples 9 to 12 are perfume compositions A, B, C, and D described in Tables 8 to 14 in Japanese Patent Application Laid-Open (JP-A) No. 2002-309291.

Examples 1 to 8 and Comparative Examples 1 to 4

Cleansing compositions to be respectively contained in a foamer container were prepared by a conventional method with the compositions shown in the
15 following Tables 1 and 2 (Examples 1 to 4), Tables 3 and 4 (Examples 5 to 8), and Tables 5 and 6 (Comparative Examples 1 to 4), and with respect to consistency of foam discharged from the foamer container, low-temperature storage stability, and skin texture after cleansing with the cleansing composition, the individual cleansing compositions were evaluated by the following methods. Tables 7 and 8
20 show the evaluation results.

< Evaluation of Foam Consistency >

Ten monitors used the individual cleansing compositions contained in each foamer and evaluated the consistency of foam based on the following criteria, and then the average value was obtained.

25 [Evaluation Criteria]

5: Very excellent

4: Fairly well

3: Acceptable

2: Poor

5 1: Very poor

< Low-Temperature Storage Stability >

Each of the cleansing composition contained in a foamer container was poured in a transparent and colorless container, stored at a temperature of 0°C for 1 month, and then presence or absence of crystals were evaluated visually.

10 A: Precipitation of crystals were not observed

B: Precipitation of crystals were observed

< Evaluation of Skin Texture after Cleansing >

Ten monitors used the individual cleansing compositions in each foamer container and evaluated the compositions with respect to skin texture after
15 cleansing based on the following evaluation criteria. The average value was calculated.

5: Very moist

4: Slightly moist

3: Neither moist nor dry

20 2: Slightly lacked moistness

1: Lacked moistness

Table 1

		Component (%)	Ex. 1	Ex. 2	Ex. 3	Ex. 4
N-acylamino acid Anionic Surfactant (A)		Potassium N-lauroyl- β -alanine	5	3	-	-
		Potassium N-myristyl- β -alanine	-	-	-	-
		N-cocoyl- β -alanine triethanol amine *1	-	-	10	-
		Potassium N-lauroyl glutamic acid *2	-	-	-	15
		Potassium N-cocoyl glycine *3	-	-	-	-
Anionic Surfactant (B)	having a Krafft point of 20°C or more	Potassium myristate	3	-	2	-
		Potassium Palmitate	-	2	-	-
		Sodium myristate	-	-	1	-
		Sodium N-palmitoyl methyl taurine *5	-	-	-	-
		POE (1) disodium lauryl sulfosuccinate *6	-	-	-	-
		Sodium N-cocoyl methyl taurine *7	-	-	-	-
		Potassium lauryl sulfoacetate *8	-	-	-	5
	having a Krafft point less than 20°C	Potassium laurate	-	-	-	-
		Triethanol amine laurate	-	-	-	-
		Coconut oil fatty acid triethanol amine *9	-	-	-	-
		POE(3) Sodium lauryl ether sulfate *10	-	-	-	-
		Sodium N-lauroyl methyl taurine *11	-	-	-	-
Amphoteric and Semi-polar Surfactant (C)		Lauryldimethyl-aminoacetate betaine *12	10	-	-	-
		Amide propyl betaine laurate *13	-	18	-	-
		Lauryl hydroxy sulfo-betaine *14	-	-	-	0.5
		Lauryl dimethyl amine oxide *15	-	-	1	-
		2-alkyl-N-carboxymethyl-N-hydroxyethyl imidazolinium betaine *16	-	-	-	-

Table 2

Component (%)		Ex. 1	Ex. 2	Ex. 3	Ex. 4	
Polyvalent Alcohol (D)	Polyethylene glycol	10	-	-	-	
	Propylene glycol	10	10	30	-	
	Dipropylene glycol	10	-	-	15	
	1,3-butylene glycol	-	-	-	15	
	Glycerine	-	20	-	-	
	Decaglycerine	-	-	-	-	
	Glucose	-	-	-	-	
	Xylitol	-	-	-	-	
	Sorbitol	-	-	-	-	
Nonionic Surfactant (E)	Formula (1)	POE (30) Behenyl ether *17	1	-	-	-
		POE (11) Stearyl ether *18	-	2	-	-
		POE (25) Cetyl ether *19	-	-	1.5	-
		POE (20) Octyl dodecyl ether *20	-	-	-	0.5
		POE (30) Lauryl ether *21	-	-	-	-
		POE (20) Hardened castor oil *22	-	-	-	-
		POE (5) Glyceryl oleate *23	-	-	-	-
		POE (5) POP Glycol (30) *24	-	-	-	-
		Isostearate POE (3) Glyceryl *25	-	-	-	-
		Monostearate POE (20) sorbitan *26	-	-	-	-
		Alkylglucosid *27	-	-	-	-
		Sucrose fatty acid ester *28	-	-	1	-
		Monoethanol amide laurate *29	2	-	-	-
		Coconut oil fatty acid diethanol amide *30	-	-	-	2
		Decaglyceryl diisostearate *31	-	-	-	-
		Tetraglyceryl monolaurate *32	-	-	-	-
		POP (14) Diglyceryl ether *33	-	-	0.5	-
Perfume		A	B	C	D	
Purified Water		Remaining part	Remaining part	Remaining part	Remaining part	
Total		100	100	100	100	
Container		a	b	a	b	

Table 3

		Component (%)	Ex. 5	Ex. 6	Ex. 7	Ex. 8
N-acylamino acid Anionic Surfactant (A)		Potassium N-lauroyl- β -alanine	-	-	2.5	-
		Potassium N-myristyl- β -alanine	-	-	0.5	-
		N-cocoyl-B-alanine triethanol amine *1	-	-	-	3
		Potassium N-lauroyl glutamic acid *2	-	-	-	-
		Potassium N-cocoyl glycine *3	20	-	-	-
Anionic Surfactant (B)	having a Krafft point of 20°C or more	Potassium myristate	2	-	7	-
		Potassium Palmitate	-	-	1	-
		Sodium myristate	-	-	-	-
		Sodium N-palmitoyl methyl taurine *5	-	1	-	2
		POE (1) disodium lauryl sulfosuccinate *6	-	0.5	-	-
		Sodium N-cocoyl methyl taurine *7	-	-	-	-
		Potassium lauryl sulfoacetate *8	-	-	-	-
	having a Krafft point less than 20°C	Potassium laurate	-	-	3	-
		Triethanol amine laurate	-	-	-	-
		Coconut oil fatty acid triethanol amine *9	-	-	-	-
		POE(3) Sodium lauryl ether sulfate *10	-	-	-	-
		Sodium N-lauroyl methyl taurine *11	-	-	-	-
Amphoteric and Semi-polar Surfactant (C)		Lauryldimethyl-aminoacetate betaine *12	-	5	5	-
		Amide propyl betaine laurate *13	7	10	-	3
		Lauryl hydroxy sulfo-betaine *14	-	-	-	-
		Lauryl dimethyl amine oxide *15	-	-	-	1.5
		2-alkyl-N-carboxymethyl-N-hydroxyethyl imidazolinium betaine *16	2	-	-	-

Table 4

Component (%)		Ex. 5	Ex. 6	Ex. 7	Ex. 8	
Polyvalent Alcohol (D)	Polyethylene glycol	-	-	-	-	
	Propylene glycol	-	-	10	-	
	Dipropylene glycol	-	15	25	-	
	1,3-butylene glycol	25	-	-	15	
	Glycerine	-	15	10	-	
	Decaglycerine	-	15	-	-	
	Glucose	-	-	-	10	
	Xylitol	-	-	-	-	
	Sorbitol	-	-	-	-	
Nonionic Surfactant (E)	Formula (1)	POE (30) Behenyl ether *17	0.5	-	-	-
		POE (11) Stearyl ether *18	1	-	-	-
		POE (25) Cetyl ether *19	-	-	-	0.5
		POE (20) Octyl dodecyl ether *20	-	-	-	-
		POE (30) Lauryl ether *21	1	-	-	-
		POE (20) Hardened castor oil *22	-	1	-	-
		POE (5) Glyceryl oleate *23	-	-	1	-
		POE (5) POP Glycol (30) *24	-	-	-	2
		Isostearate POE (3) Glyceryl *25	-	2	-	-
		Monostearate POE (20) sorbitan *26	-	-	-	2
		Alkylglucosid *27	0.5	-	-	-
		Sucrose fatty acid ester *28	-	-	-	-
		Monoethanol amide laurate *29	-	-	-	-
		Coconut oil fatty acid diethanol amide *30	-	-	-	-
		Decaglyceryl diisostearate *31	0.5	-	-	-
		Tetraglyceryl monolaurate *32	1	-	-	-
		POP (14) Diglyceryl ether *33	-	-	-	-
Perfume		A	B	C	D	
Purified Water		Remaining part	Remaining part	Remaining part	Remaining part	
Total		100	100	100	100	
Container		a	b	a	b	

Table 5

Component		Compara. Ex. 1	Compara. Ex. 2	Compara. Ex. 3	Compara. Ex. 4	Compara. Ex. 5	
N-acylamino acid Anionic Surfactant (A)		Potassium N-lauroyl-β-alanine	5	-	-	5	-
		Potassium N-myristyl-β-alanine	-	-	4	-	-
		N-cocoyl-B-alanine triethanol amine *1	-	-	-	-	5
		Potassium N-lauroyl glutamate *2	-	-	-	-	-
		Potassium N-cocoyl glycine *3	-	-	-	-	-
Anionic Surfactant (B)	having a Krafft point of 20°C or more	Potassium myristate	-	8	-	3	3
		Potassium Palmitate	-	-	-	3	2
		Sodium myristate	-	-	2	-	-
		Sodium N-palmitoyl methyl taurine *5	-	-	2	-	-
		POE (1) disodium lauryl sulfosuccinate *6	-	-	-	-	-
		Sodium N-cocoyl methyl taurine *7	-	-	6	-	-
	having a Krafft point less than 20°C	Potassium lauryl sulfoacetate *8	-	-	-	-	-
		Potassium laurate	-	2	-	1	-
		Triethanol amine laurate	2	-	-	-	-
		Coconut oil fatty acid triethanol amine *9	2	-	1	-	-
		POE(3) Sodium lauryl ether sulfate *10	-	-	-	-	-
		Sodium N-lauroyl methyl taurine *11	-	-	-	-	-
Amphoteric and Semi-polar Surfactant (C)		Lauryldimethyl-aminoacetate betaine *12	-	-	-	-	-
		Amide propyl betaine laurate *13	-	-	-	7	5
		Lauryl hydroxy sulfo-betaine *14	-	-	-	-	-
		Lauryl dimethyl amine oxide *15	5	7	-	-	-
		2-alkyl-N-carboxymethyl-N-hydroxy- ethyl imidazolinium betaine *16	-	-	-	-	-

Table 6

Component (%)		Compara. Ex. 1	Compara. Ex. 2	Compara. Ex. 3	Compara. Ex. 4	Compara. Ex. 5	
Polyvalent Alcohol (D)	Polyethylene glycol	10	-	-	-	26	
	Propylene glycol	-	-	-	20	-	
	Dipropylene glycol	-	15	25	-	-	
	1,3-butylene glycol	-	-	-	-	-	
	Glycerine	-	15	10	-	26	
	Decaglycerine	-	-	-	-	-	
	Glucose	-	-	-	-	-	
	Xylitol	20	-	-	-	-	
	Sorbitol	-	-	-	-	-	
Nonionic Surfactant (E)	Formula (1)	POE (30) Behenyl ether *17	1	-	-	-	
		POE (11) Stearyl ether *18	-	2	-	-	
		POE (25) Cetyl ether *19	-	-	1	-	1
		POE (20) Octyl dodecyl ether *20	-	-	-	1	-
		POE (30) Lauryl ether *21	-	-	-	-	-
		POE (20) Hardened castor oil *22	-	-	-	-	-
		POE (5) Glyceryl oleate *23	-	-	-	-	-
		POE (5) POP Glycol (30) *24	-	-	-	1	-
		Isostearate POE (3) Glyceryl *25	-	-	-	-	-
		Monostearate POE (20) sorbitan *26	-	-	-	1	-
		Alkylglucosid *27	-	-	-	-	-
		Sucrose fatty acid ester *28	-	-	-	-	-
		Monoethanol amide laurate *29	-	-	-	-	-
		Coconut oil fatty acid diethanol amide *30	-	-	-	-	-
		Decaglyceryl diisostearate *31	-	-	-	-	-
		Tetraglyceryl monolaurate *32	-	-	-	-	-
POP (14) Diglyceryl ether *33	-	-	-	-	-		
Perfume		A	B	C	D	A	
Purified Water		Remaining part	Remaining part	Remaining part	Remaining part	Remaining part	
Total		100	100	100	100	100	
Container		a	b	a	b	a	

Table 7

	Ex. 1	Ex. 2	Ex. 3	Ex. 4	Ex. 5	Ex. 6	Ex. 7	Ex. 8
Consistency of Foam	4.2	4.7	4.4	4.3	4.2	4.1	4.6	4.3
Low-temperature storage stability	A	A	A	A	A	A	A	A
Skin texture after cleansing	4.4	4.6	4.2	4.3	4.5	3.8	3.5	4.7

Table 8

	Compara. Ex. 1	Compara. Ex. 2	Compara. Ex. 3	Compara. Ex. 4	Compara. Ex. 5
Consistency of Foam	2.2	4.5	4.0	4.8	3.5
Low-temperature storage stability	A	B	B	B	A
Skin texture after cleansing	4.4	4.6	4.2	4.3	3.8

In Tables 2, 4 and 6, those described with 'a' or 'b' in the column

5 "Container" respectively represent the following containers:

a: A foamer container described in Japanese Patent Application

Laid-Open (JP-A) No. 07-315463.

b: A foamer container used for Kirei Kirei Medicated Hand Soap

manufactured by Lion Corporation and commercially available as of November

10 2004.

In addition, those marked with * respectively represents the following ones:

*1 Amilite ACT-12 (manufactured by AJINOMOTO CO., INC.)

*2 Amisoft LK-11 (manufactured by AJINOMOTO CO., INC.)

15 *3 Amilite GCK-12 (manufactured AJINOMOTO CO., INC.)

*5 NIKKOLPMT (manufactured by NIKKO Chemicals Co., Ltd.)

*6 TEXIN SS-1 (manufactured by Cognis Japan)

	*7	Neoscope CTS-25 (manufactured by TOHO Chemical Industry Co., Ltd.)
	*8	KC-1293-K (manufactured by TOHO Chemical Industry Co., Ltd.)
	*9	TOHO CT (manufactured by TOHO Chemical Industry Co., Ltd.)
5	*10	PERSOFT EF (manufactured by NOF CORPORATION)
	*11	NIKKOLMT (manufactured by NIKKO Chemicals Co., Ltd.)
	*12	Obazoline LB-SF (manufactured by TOHO Chemical Industry Co., Ltd.)
10	*13	Softazoline LPB-R (manufactured by Kawaken Fine Chemicals Co., Ltd.)
	*14	Softazoline AHS-103 (manufactured by TOHO Chemical Industry Co., Ltd.)
	*15	AROMOX DM 12D-W (manufactured by LION CORPORATION)
15	*16	Obazoline 552 (manufactured by TOHO Chemical Industry Co., Ltd.)
	*17	EMALEX BHA-30 (manufactured by NIHON EMULSION Co., Ltd.)
	*18	EMALEX 611 (manufactured by NIHON EMULSION Co., Ltd.)
	*19	EMALEX 125 (manufactured by NIHON EMULSION Co., Ltd.)
20	*20	EMALEX OD-20 (manufactured by NIHON EMULSION Co., Ltd.)
	*21	EMALEX 730 (manufactured by NIHON EMULSION Co., Ltd.)
	*22	NIKKOL HCO-20 (manufactured by NIKKO Chemicals Co., Ltd.)
	*23	NIKKOL TMGO-5 (manufactured by NIKKO Chemicals Co., Ltd.)
	*24	Newpole PE-61 (manufactured by SANYO KASEI CO., LTD.)
25	*25	EMALEX GWIS-103 (manufactured by NIHON EMULSION Co., Ltd.)

Ltd.)

*26 NIKKOL TS-30 (manufactured by Nikko Chemicals Co., Ltd.)

*27 Plantacare 2000UP (manufactured by Henkel Japan)

*28 Sunsoft SE-16P (TAIYO KAGAKU CO., LTD.)

5 *29 Amizole LME (manufactured by Kawaken Fine Chemicals Co.,
Ltd.)

*30 Home Reed CD (manufactured by LION Corporation)

*31 S Face IS-1002 (SAKAMOTO YAKUHIN KOGYO CO., LTD.)

*32 S Face L-401 (SAKAMOTO YAKUHIN KOGYO CO., LTD.)

10 *33 SY-DP14 (SAKAMOTO YAKUHIN KOGYO CO., LTD.)

Results shown in Tables 7 and 8 exemplified that the cleansing compositions contained in a foamer container prepared in Examples 1 to 8 excelled in consistency of foam as well as in low-temperature storage stability and gave excellent skin texture after cleansing. At the same time, it is exemplified
15 that the liquid cleansing compositions prepared in Comparative Examples 1 to 4 were poor in consistency of foam and low-temperature storage stability, and have poor texture, and with the liquid cleansing compositions, it is impossible to achieve the effects of the present invention.

Next, the cleansing compositions contained in a foamer container of
20 Examples 9 to 12 were respectively prepared with the following composition by a conventional method.

Example 9

[Composition]

- N-lauroyl- β -alanine (LMA-H, manufactured by Mitsui Chemicals, Inc.)

25 3%

• Myristic acid (NAA-142, manufactured by NOF CORPORATION) 2%

• Lauryl dimethyl amino oxide 1.5%

• POE (10) Stearyl ether 1.0%

(BLAUNON SR-710, manufactured by AOKI OIL INDUSTRIAL CO.,

5 LTD.)

• Propylene glycol 30.0%

• Rosemary extract (Rosemary Water, manufactured by MARUZEN
PHARMACEUTICALS CO., LTD.) 1.0%

• Hydroxy-ethane diphosphonate 0.1%

10 • Perfume A 0.1%

• Potassium hydroxide (adjusted to be pH 10.0)

• Purified water Remaining part

Total 100.0%

A foamer container disclosed in Japanese Patent Application Laid-Open

15 (JP-A) No. 07-315463 was used.

Example 10

[Composition]

• Potassium N-lauroyl- glutamate 3.0%

• Potassium laurate 8.0%

20 • Potassium myristate 2.0%

• Lauryl hydroxy sulfobetaine 4.0%

• POE (30) behenyl ether 0.5%

(EMALEX, BHA-30, manufactured by NIHON EMULSION CO., LTD..)

• Propylene glycol 20.0%

25 • Glycerin 15.0%

	• Jojoba oil	1.0%
	• Edetate tetrasodium tetrahydrate	0.1%
	• Isopropyl methyl phenol	0.1%
	• Raffinose	0.01%
5	• Perfume B	0.2%
	• Purified water	Remaining part
	Total	100.0%

A foamer container used for Kirei Kirei Medicated Hand Soap manufactured by Lion Corporation, and commercially available as of November 10 2004 was used.

Example 11

[Composition]

	• Potassium N-cocoyl glycine	10.0%
	• Potassium myristate	2.0%
15	• Potassium amide mono-N-lauryl malic acid	3.0%
	• Lauric acid amide propylbetaine	5.0%
	• POE (20) Octyl dodecyl ether	1.5%
	• POE (2) Monoethanol amide laurate	1.0%

(Amizett 2LY, manufactured by Kawaken Fine Chemicals Co., Ltd.)

20	• Propylene glycol	10.0%
	• 1,3-butylene glycol	20.0%
	• Sorbitol	12.0%
	• Ellagic acid	0.05%
	• Tetrasodium edetate	0.1%
25	• Perfume C	0.5%

• Purified water	Remaining part
Total	100.0%

A squeeze container (manufactured by TOYO SEIKAN KAISHA, LTD.)
was used.

5 Example 12

[Composition]

• N-cocoyl arginine	5.0%
• Sodium N-cocoyl methyl taurine	0.3%

(Neoscope CTS-25, TOHO Chemical Industry Co., Ltd.)

10	• Coconut oil fatty acid	2.0%
	• Lauryldimethyl aminoacetate betaine	1.5%
	• POE (25) Cetyl ether	1.5%

(EMALEX 125, manufactured by NIHON EMULSION CO., LTD.)

• POE (2) Coconut oil fatty acid monoethanol amide	3.0%
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15 (Amizett 2C, manufactured by Kawaken Fine Chemicals Co., Ltd.)

• Dipropylene glycol	20.0%
• Sorbitol	10.0%
• Silicone Emulsion	2.0%

(BY22-020, manufactured by DOW CORNING TORAY SILICONE CO.,

20 LTD.)

• Piroctone olamine	1.0%
• Hydroxyethane diphosphonic acid	0.2%
• Chamomilla recutita (Chamomilla Extract, manufactured by ICHIMARU PHARCOS CO., LTD.)	0.1%

25	• Triethanol amine	Adjusted to pH9.2
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• Perfume D	0.7%
• Purified water	Remaining part
Total	100.0%

5 A trigger spray container (YT-87L, manufactured by Yoshino Kogyo) was used.

With respect to foam consistency, low-temperature storage stability, and skin texture after cleansing, the cleansing compositions contained in a foamer container prepared in Examples 9 to 12 were evaluated in the same manner as in Example 1. The evaluation results exemplified that any of these cleansing
10 compositions excelled in consistency of foam as well as in low-temperature storage stability and gave excellent skin texture after cleansing with them.

The cleansing composition contained in the foamer container of the present invention is suitably used for skin cleansing agents, because it has a creamy quality and consistency, excels in low-temperature storage stability and
15 gives moist skin texture.

What is claimed is:

1. A cleansing composition contained in a foamer container comprising:
a N-acylamino acid anionic surfactant (A),

an anionic surfactant having a Krafft point of 20°C or more (B) other than
5 the N-acylamino acid anionic surfactant (A),

at least one compound selected from amphoteric surfactants and
semi-polar surfactants (C), and

a polyvalent alcohol (D) in a content of 22% by mass to 50% by mass
relative to the cleansing composition,

10 wherein the cleansing composition is included in a foamer container.

2. The cleansing composition contained in the foamer container
according to claim 1, wherein the N-acylamino acid anionic surfactant (A)
comprises one or more selected from the group consisting of N-lauroyl- β -alanine,
salts of N-lauroyl- β -alanine, N-myristyl- β -alanine, salts of N-myristyl- β -alanine,
15 N-cocoyl- β -alanine, salts of N-cocoyl- β -alanine, N-lauroyl glutamic acid, salts of
N-lauroyl glutamic acid, N-cocoyl glycine, and salts of N-cocoyl glycine.

3. The cleansing composition contained in the foamer container
according to any one of claims 1 and 2, wherein the content of the N-acylamino
acid anionic surfactant (A) in the cleansing composition is 0.1% by mass to 20% by
20 mass.

4. The cleansing composition contained in the foamer container
according to any one of claims 1 to 3, wherein the anionic surfactant having a
Krafft point of 20°C or more (B) comprises one or more selected from the group
consisting of potassium myristate, potassium palmitate, sodium myristate, sodium
25 N-palmitoylmethyl taurine, potassium lauryl sulfoacetate, polyoxyethylene (1)

disodium lauryl sulfosuccinate, and sodium N-cocoyl methyl taurine.

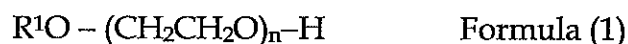
5 5. The cleansing composition contained in the foamer container according to any one of claims 1 to 4, wherein the content of the anionic surfactant having a Krafft point of 20°C or more (B) in the cleansing composition is 1% by mass to 10% by mass.

6. The cleansing composition contained in the foamer container according to any one of claims 1 to 5, wherein the content of the at least one compound selected from amphoteric surfactants and semi-polar surfactants (C) in the cleansing composition is 0.5% by mass to 20% by mass.

10 7. The cleansing composition contained in the foamer container according to any one of claims 1 to 6, wherein the content of the polyvalent alcohol (D) in the cleansing composition is 25% by mass to 35% by mass.

8. The cleansing composition contained in the foamer container according to any one of claims 1 to 7 further comprising a nonionic surfactant (E).

15 9. The cleansing composition contained in the foamer container according to claim 8, wherein the nonionic surfactant (E) is represented by the following formula (1):



20 In Formula (1), R¹ represents an alkyl or an alkenyl group having 8 to 22 carbon atoms in a straight chain or a branched chain form, and 'n' represents an integer number from 1 to 80.