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Description

SKIN COSMETIC

[Field of the Invention]

[0001]

The present invention relates to a skin cosmetic.

[Background of the Invention]

[0002]

Conventionally, skin cosmetics have been desired to spread smoothly and to provide freshness, without causing stickiness.

Under such circumstances, when agar is applied to cosmetics, it can provide not only a function of a thickener, but a cool, fresh feeling, by utilizing the "high water content" of agar.

For example, a skin cosmetic containing agar as a non-continuous phase, namely, a cosmetic in which hydrogel particles are dispersed, has been studied (Patent Literature 1 and Patent Literature 2).

[0003]

(Patent Literature 1) JP-A-2002-20227

(Patent Literature 2) JP-A-2002-20228

[Summary of the Invention]

[0004]

The present invention relates to a skin cosmetic comprising the following components (A), (B) and (C):

(A) from 3% to 50% by mass of gel-like particles,

(B) from 0.05% to 3% by mass of a thickener, and

(C) from 30% to 95% by mass of water, where

the component (A) is gel-like particles comprising the following (a) to (f):

(a) from 0.1% to 10% by mass of at least one gelling agent selected from the group consisting of agar, carrageenan and gelatin,

(b) from 1% to 30% by mass of an inorganic ultraviolet scattering agent,

(c) from 1% to 40% by mass of an organic ultraviolet absorber,

(d) from 0.1% to 24% by mass of an amphipathic solid fat,

(e) from 0.05% to 5% by mass of a dextrin fatty acid ester, and

(f) from 30% to 80% by mass of water.

[Detailed Description of the Invention]

[0005]

Even if the techniques described in the aforementioned patent literatures are used, there has still been a room for the improvement of stickiness or friction feeling, after application of the cosmetics. In particular, in the case of conventional skin cosmetics, if a large amount of UV protective agent is mixed into

them in order to obtain high ultraviolet protective performance, it would cause stickiness or friction feeling. Thus, it was found that it was difficult to achieve highly required characteristics in recent years, namely, to achieve both a higher ultraviolet light-shielding effect and a good sense of use.

[0006]

The present invention relates to a skin cosmetic having a high ultraviolet light-shielding effect, providing fresh and smooth feeling without causing friction feeling, and thus providing a good sense of use.

[0007]

The present inventors have found that a skin cosmetic having a high ultraviolet light-shielding effect, a good sense of use, and excellent preservation stability can be obtained by using gel-like particles, which comprise, at a specific ratio, a specific gelling agent, inorganic ultraviolet scattering agent, organic ultraviolet absorber, amphipathic solid fat, and dextrin fatty acid ester.

[0008]

The skin cosmetic of the present invention has a high ultraviolet light-shielding effect and provides fresh and smooth feeling without causing friction feeling, and a good sense of use, and further, it is also excellent in terms of preservation stability.

[0009]

The gel-like particles used as a component (A) in the present invention comprise the following (a) to (f):

(a) from 0.1% to 10% by mass of at least one gelling agent selected from the group consisting of agar, carrageenan and gelatin,

(b) from 1% to 30% by mass of an inorganic ultraviolet scattering agent,

(c) from 1% to 40% by mass of an organic ultraviolet absorber,

(d) from 0.1% to 15% by mass of an amphipathic solid fat,

(e) from 0.05% to 1.5% by mass of a dextrin fatty acid ester, and

(f) from 30% to 80% by mass of water.

In the present invention, the content of each component in the above described gel-like particles indicates a content ratio based on the total mass of the gel-like particles.

[0010]

Among the components (a), the agar is not particularly limited. From the viewpoint of improving feeling upon use, when the agar is applied to the skin, the gel strength of agar (by Nikkansui-type measuring method) is preferably 147 kPa (1,500 g/cm²) or less, and more preferably 19.6 kPa (200 g/cm²) to 127 kPa (1,300 g/cm²). The gel strength can be obtained in the form of maximum mass (g) per cm² of surface area when the gel endures a load at 20°C for 20 seconds by preparing an

aqueous solution comprising 1.5% by mass of agar, then leaving the aqueous solution at 20°C for 15 hours to coagulate gel, then cutting the gel into a size of 25 mm × 25 mm × 3 mm (depth × width × height), and then applying the load to the gel section with a Nikkansui-type gel strength measuring device (manufactured by Kiya Corp.).

Examples of the agar that can be used as the component (a) include commercially available products such as Ina Agar PS-84, Z-10, AX-30, AX-100, AX-200, T-1, S-5, M-7, UP-16, CS-16A, CS-420, CS-670, and XY-908 (all of which are manufactured by Ina Food Industry Co., Ltd.). Among these products, AX-200, UP-16, CS-16A, and XY-908 are preferable.

[0011]

Carrageenan is a linear galactan consisting of alternative repeats of an α (1→3) bond and a β (1→4) bond. A part of or the entire β (1→4)-bound galactose unit is present in the form of 3,6-anhydro-D-galactose and a sulfuric acid ester thereof. Based on the composition structure, the carrageenan includes κ -carrageenan, ι -carrageenan, and λ -carrageenan, and all of them can be used herein.

[0012]

Gelatin is a denatured protein, which is formed by converting collagen serving as a main component of the connective tissues and the like of animals to a soluble

substance by using acid or alkali, and then heat-denaturing the soluble substance.

From the viewpoint of improving feeling upon use when it is applied to the skin, among the components (a), agar is preferable.

[0013]

One or more gelling agents can be used as the component (a), and from the viewpoint of improving feeling upon use when it is used in cosmetics and the like and suppressing disintegration of the form during washing upon production of gel-like particles and mixing into cosmetics or the like, the content of the gelling agent is 0.1% by mass or more, preferably 0.3% by mass or more, more preferably 0.5% by mass or more, even more preferably 0.72% by mass or more, and also, it is 10% by mass or less, preferably 7% by mass or less, more preferably 4% by mass or less, and even more preferably 1% by mass, in the gel-like particles, namely, based on the total mass of the gel-like particles.

Moreover, the content of the gelling agent used as the component (a) is from 0.1% to 10% by mass, preferably from 0.3% to 7% by mass, more preferably from 0.5% to 4% by mass, and even more preferably from 0.72% to 1% by mass, in the gel-like particles.

[0014]

Examples of the inorganic ultraviolet scattering agent used as the component (b) include metal oxides such

as titanium oxide, zinc oxide and cerium oxide, and metals such as silicon and aluminum.

The shape of such an ultraviolet scattering agent may be either a sphere or a spindle. In addition, with regard to the mean particle diameter, the maximum minor axis is preferably from 0.005 to 0.5 μm , more preferably from 0.007 to 0.2 μm , and even more preferably from 0.01 to 0.07 μm .

Herein, the mean particle diameter is obtained by measuring the maximum minor axes of the particle diameters of 300 particles in an image under 100,000-magnification conditions using a transmission electron microscope (TEM), and then calculating a mean value thereof. In the present invention, the maximum minor axis means a minor axis having the maximum diameter among minor axes perpendicular to major axes.

[0015]

From the viewpoint of improving the dispersibility of the ultraviolet scattering agent in the gel-like particles and thus improving the ultraviolet light-shielding effect of the obtained cosmetic, the ultraviolet scattering agent is preferably used, after it is subjected to conventionally known surface treatments, for example, fluorine compound treatments (preferably a perfluoroalkyl phosphoric acid ester treatment, a perfluoroalkyl silane treatment, a perfluoro polyether treatment, a fluorosilicone treatment, and a fluorinated silicone resin treatment), silicone treatments

(preferably a methyl hydrogen polysiloxane treatment, a dimethyl polysiloxane treatment, and a gas-phase method tetramethyl tetrahydrogen cyclotetrasiloxane treatment), silicone resin treatments (preferably a trimethylsiloxysilicic acid treatment), a pendant treatment (a method in which an alkyl chain or the like is added to the resultant after completion of the gas-phase method silicone treatment), a silane coupling agent treatment, a titanium coupling agent treatment, a silane treatment (preferably a treatment with alkylsilane or alkylsilazane), an oil agent treatment, an N-acylated lysine treatment, a polyacrylic acid treatment, a metallic soap treatment (preferably by using stearate or myristate), an acrylic resin treatment, or a metal oxide treatment. These treatments are more preferably used in combination of two or more treatments.

For example, from the viewpoint of improving the dispersibility of the ultraviolet scattering agent in the gel-like particles and thus improving the ultraviolet light-shielding effect of the obtained cosmetic, the surface of titanium oxide is coated with a metal oxide such as silane or alumina, and the surface is then treated with an alkylsilane or fatty acid. It is preferable that the surface of a titanium oxide be treated with alumina and be then treated with a fatty acid. Moreover, the surface of such an ultraviolet scattering agent is preferably treated with a compound having a carboxyl group, is more preferably treated with

a fatty acid having 12 to 22 carbon atoms, and is even more preferably treated with a fatty acid having 14 to 20 carbon atoms.

[0016]

One or more inorganic ultraviolet scattering agents can be used as the component (b), and from the viewpoint of improving the ultraviolet light-shielding effect, the content of the inorganic ultraviolet scattering agent in the gel-like particles is 1% by mass or more, preferably 3% by mass or more, more preferably 8% by mass or more, and even more preferably 10% by mass or more, and also, it is 30% by mass or less, preferably 25% by mass or less, more preferably 21% by mass or less, and even more preferably 18% by mass or less. Moreover, the content of the inorganic ultraviolet scattering agent used as the component (b) in the gel-like particles is from 1% to 30% by mass, preferably from 3% to 25% by mass, more preferably from 8% to 21% by mass, and even more preferably from 10% to 18% by mass.

[0017]

Examples of the organic ultraviolet absorber used as the component (c) include: salicylic acid-based ultraviolet absorbers such as homomenthyl salicylate, octyl salicylate, and triethanolamine salicylate; para-aminobenzoic acid-based ultraviolet absorbers such as para-aminobenzoic acid, ethyldihydroxypropyl para-aminobenzoic acid, glyceryl para-aminobenzoic acid, octyldimethyl para-aminobenzoic acid, amyl para-

dimethylaminobenzoate, and 2-ethylhexyl para-dimethylaminobenzoate; benzophenone-based ultraviolet absorbers such as 4-(2- β -glucopyranosiloxy)propoxy-2-hydroxybenzophenone, dihydroxydimethoxybenzophenone, sodium dihydroxydimethoxybenzophenonedisulfonate, 2-hydroxy-4-methoxybenzophenone, 2-hydroxy-4-methoxybenzophenone-5-sulfuric acid, 2,2'-dihydroxy-4-methoxybenzophenone, 2,4-dihydroxybenzophenone, 2,2',4,4'-tetrahydroxybenzophenone, 2,2'-dihydroxy-4,4'-dimethoxybenzophenone, and 2-hydroxy-4-N-octoxybenzophenone; cinnamic acid-based ultraviolet absorbers such as 2-ethylhexyl p-methoxycinnamate (Uvinul MC 80; manufactured by BASF), glyceryl mono-2-ethylhexanoate diparamethoxycinnamate, methyl 2,5-diisopropylcinnamate, 2,4,6-tris[4-(2-ethylhexyloxy)carbonyl]anilino]-1,3,5-triazine (e.g., Uvinul T150; manufactured by BASF), methylbis(trimethylsiloxy)silylisopentyl trimethoxycinnamate, a mixture of isopropyl paramethoxycinnamate and diisopropylcinnamic acid ester, and p-methoxyhydrocinnamic acid diethanolamine salts; benzoylmethane-based ultraviolet absorbers such as 2-phenyl-benzimidazole-5-sulfic acid, 4-isopropyl dibenzoylmethane, and 4-tert-butyl-4'-methoxydibenzoylmethane (e.g., PARASOL 1789; manufactured by DSM Nutrition Japan K.K.); and octocrylene (e.g., PARASOL 340; manufactured by DSM Nutrition Japan K.K.), 2-ethylhexyl

dimethoxybenzylidenedioxoimidazolidinepropionate (Soft Shade DH; manufactured by AJINOMOTO CO., INC.), 1-(3,4-dimethoxyphenyl)-4,4-dimethyl-1,3-pentanedione, cinoxate, methyl-O-aminobenzoate, 3-(4-methylbenzylidene)camphor, octyltriazone, diethylamino hydroxybenzoyl benzoic acid hexyl ester (e.g., Uvinul Aplus; manufactured by BASF), bis-ethylhexyloxyphenol methoxyphenyl triazine (e.g., Tinosorb S; manufactured by BASF), and methylenebisbenzotriazolyltetramethylbutylphenol (e.g., Tinosorb M; manufactured by BASF).

[0018]

Among these substances, from the viewpoint of improving the ultraviolet light-shielding effect, preferred are one or more selected from the group consisting of: 2-ethylhexyl p-methoxycinnamate (e.g., Uvinul MC 80; manufactured by BASF), 2,4,6-tris[4-(2-ethylhexyloxycarbonyl)anilino]-1,3,5-triazine (e.g., Uvinul T150; manufactured by BASF), 4-tert-butyl-4'-methoxydibenzoylmethane (PARASOL 1789; manufactured by DSM Nutrition Japan K.K.), octocrylene (PARASOL 340; manufactured by DSM Nutrition Japan K.K.), 2-ethylhexyl dimethoxybenzylidenedioxoimidazolidinepropionate (e.g., Soft Shade DH; manufactured by AJINOMOTO CO., INC.), diethylamino hydroxybenzoyl benzoic acid hexyl ester (e.g., Uvinul Aplus; manufactured by BASF), bis-ethylhexyloxyphenol methoxyphenyl triazine (e.g., Tinosorb S; manufactured by BASF), and methylenebisbenzotriazolyltetramethylbutylphenol (e.g.,

Tinosorb M; manufactured by BASF). Moreover, from the same viewpoint as described above, one or more selected from the group consisting of 2-ethylhexyl p-methoxycinnamate (e.g., Uvinul MC 80; manufactured by BASF), diethylamino hydroxybenzoyl benzoic acid hexyl ester (e.g., Uvinul Aplus; manufactured by BASF), and bis-ethylhexyloxyphenol methoxyphenyl triazine (e.g., Tinosorb S; manufactured by BASF) are more preferable; one or more selected from the group consisting of 2-ethylhexyl p-methoxycinnamate (e.g., Uvinul MC 80; manufactured by BASF) and bis-ethylhexyloxyphenol methoxyphenyl triazine (e.g., Tinosorb S; manufactured by BASF) are even more preferable; and a combination of two or more from these substances is further preferable.

[0019]

One or more organic ultraviolet absorbers can be used as the component (c), and from the viewpoint of improving the ultraviolet light-shielding effect, the content of the organic ultraviolet absorber in the gel-like particles is 1% by mass or more, preferably 4% by mass or more, more preferably 10% by mass or more, and even more preferably 15% by mass or more, and also, it is 40% by mass or less, preferably 35% by mass or less, more preferably 28% by mass or less, and even more preferably 24% by mass or less. Moreover, the content of the organic ultraviolet absorber used as the component (c) in the gel-like particles is from 1% to 40% by mass, preferably from 4% to 35% by mass, more preferably from

10% to 28% by mass, and even more preferably from 15% to 24% by mass.

[0020]

Among the organic ultraviolet absorbers used as the component (c), when diethylamino hydroxybenzoyl benzoic acid hexyl ester (e.g., Uvinul Aplus; manufactured by BASF) is used in combination with titanium oxide, it would cause degradation in odor. Thus, when titanium oxide is used as the component (b) in the gel-like particles or the like, it is preferable not to comprise diethylamino hydroxybenzoyl benzoic acid hexyl ester.

Specifically, when the component (b) comprises titanium oxide, the content of diethylamino hydroxybenzoyl benzoic acid hexyl ester in the organic ultraviolet absorber used as the component (c) in the gel-like particles is preferably 0.5% by mass or less, more preferably 0.1% by mass or less, even more preferably 0.01% by mass or less, and further preferably, substantially 0% by mass.

[0021]

Examples of the amphipathic solid fat used as the component (d) include ceramides, alcohols having 12 to 22 carbon atoms, monofatty acid glycerin esters having 12 to 22 carbon atoms, monoalkyl glyceryl ethers having 12 to 22 carbon atoms, and sorbitan monofatty acid esters having 12 to 22 carbon atoms.

As such ceramides, one or more selected from the group consisting of natural ceramides and pseudo-

ceramides can be used. From the viewpoint of improving the preservation stability of the gel-like particles and the viewpoint of reducing friction feeling, the ceramides described in JP-A-2013-53146 are specifically preferable.

[0022]

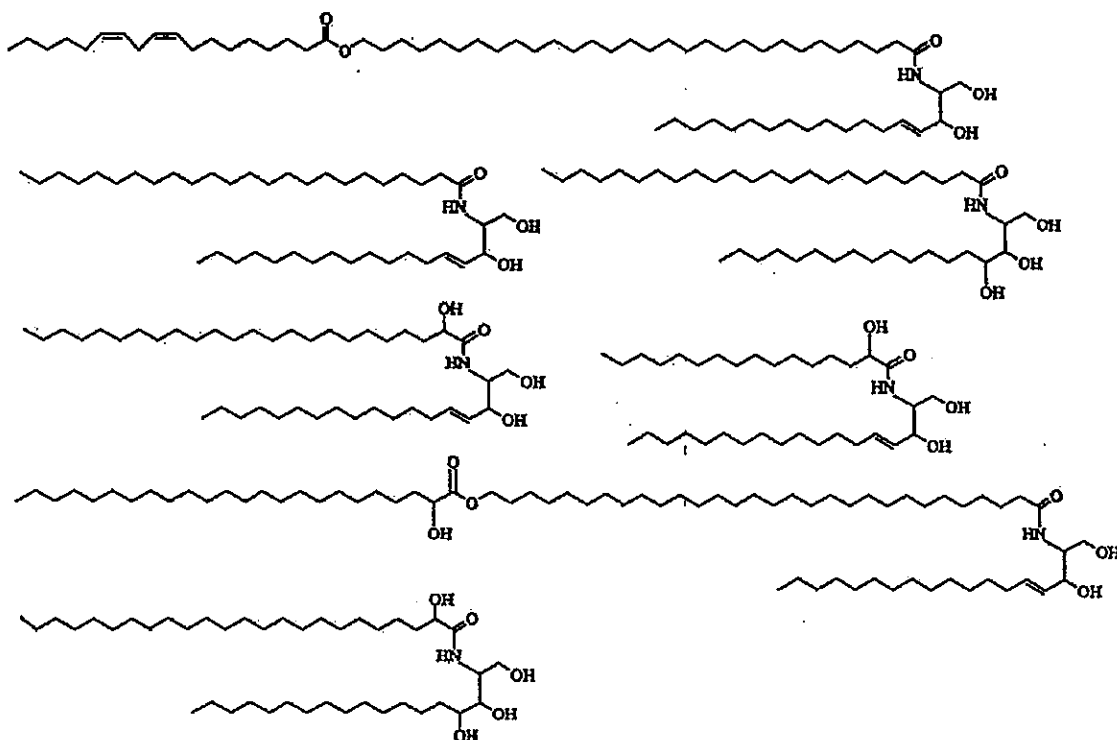
Specific examples of the natural-type ceramide include Ceramide Types 1 to 7, in which sphingosine, dihydrosphingosine, phytosphingosine or sphingadienine is amidated (e.g., swine and human ceramides, shown in Figure 2 of J. Lipid Res., 24: 759 (1983), and Figure 4 of J. Lipid. Res., 35: 2069 (1994)).

[0023]

Further, an N-alkyl body thereof (e.g., an N-methyl body) is also included.

As these ceramides, natural-type (D (-) form) optically active substances, or non-natural-type (L (+) form) optically active substances, or further, a mixture of natural-type and non-natural type optically active substances may be used. The relative configuration of the aforementioned compound may be either a natural-type configuration, or another non-natural-type configuration, or otherwise, a mixture of these configurations may be used. In particular, the compounds CERAMIDE 1, CERAMIDE 2, CERAMIDE 3, CERAMIDE 5 and CERAMIDE 6II (all of which are from INCI, 8th Edition), and compounds represented by the following formulae, are preferable.

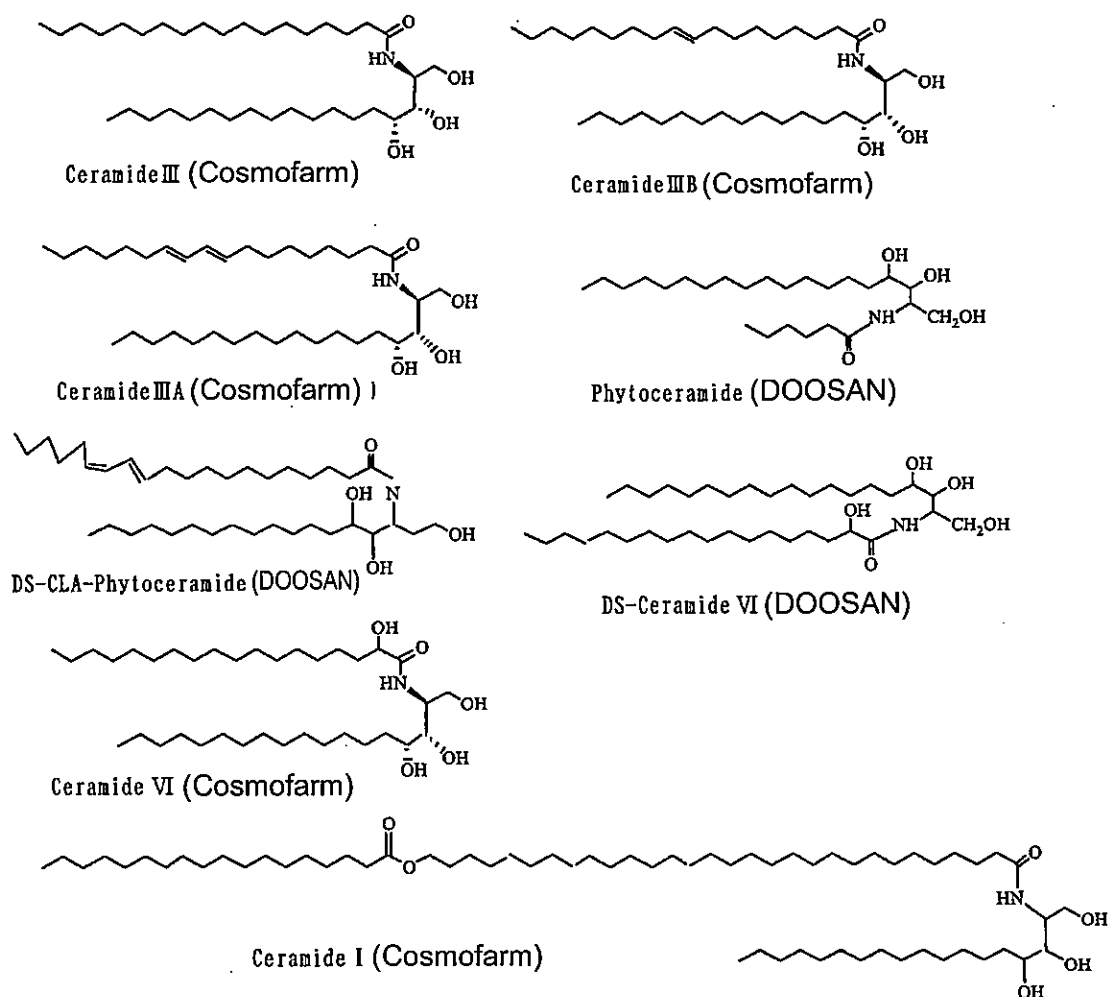
[0024]



[0025]

These compounds may be either extracts from natural products, or synthetic products. In addition, commercially available products may also be used. Examples of such a commercially available natural-type ceramide include Ceramide I, Ceramide III, Ceramide IIIA, Ceramide IIIB, Ceramide IIIC, Ceramide VI (all of which are from Cosmofarm), Ceramide TIC-001 (Takasago International Corporation), CERAMIDE II (Quest International), DS-Ceramide VI, DS-CLA-Phytoceramide, C6-Phytoceramide, DS-ceramide Y3S (DOOSAN), and CERAMIDE 2 (Sederma).

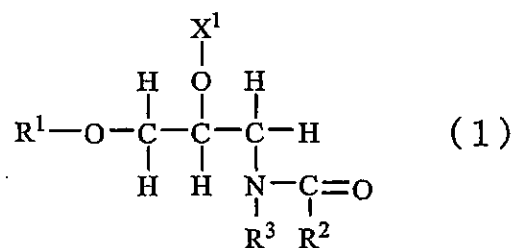
[0026]



[0027]

From the viewpoint of improving the preservation stability of the gel-like particles and reducing friction feeling, a pseudo-ceramide represented by the following formula (1) is preferable as a pseudo-type ceramide.

[0028]



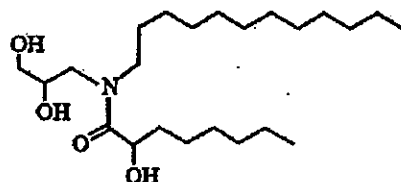
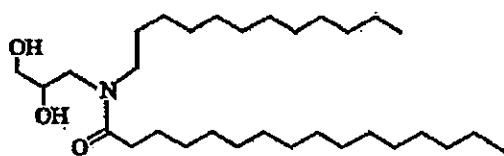
[0029]

In the formula, R^1 represents an optionally hydroxyl-substituted, linear, branched or cyclic, saturated or unsaturated hydrocarbon group having 10 to 22 carbon atoms, or a hydrogen atom; X^1 represents a hydrogen atom, an acetyl group, or a glyceryl group; R^2 represents an optionally hydroxyl- or amino-substituted, linear, branched or cyclic, saturated or unsaturated hydrocarbon group having 5 to 22 carbon atoms, or the aforementioned hydrocarbon group, to the ω -terminus of which an optionally hydroxyl-substituted linear or branched, saturated or unsaturated fatty acid having 8 to 22 carbon atoms binds via an ester bond; and R^3 represents a hydrogen atom, or an alkyl group having a total carbon number of 1 to 30, which is optionally substituted with a hydroxyl group, a hydroxyalkoxy group, an alkoxy group or an acetoxy group.

[0030]

From the viewpoint of improving the preservation stability of the gel-like particles and reducing friction feeling, among these compounds, pseudo-ceramides represented by the following formulae are more preferable.

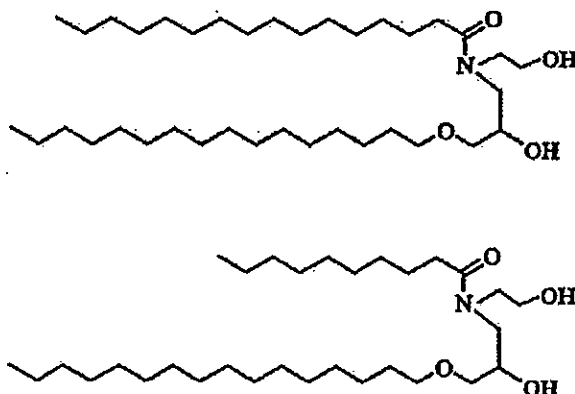
[0031]



[0032]

As the compounds represented by the formula (1),, a pseudo-type ceramide, where in the formulae shown below, R^1 represents a hexadecyl group, X^1 represents a hydrogen atom, R^2 represents a pentadecyl group, and R^3 represents a hydroxyethyl group; or a pseudo-type ceramide, where R^1 represents a hexadecyl group, X^1 represents a hydrogen atom, R^2 represents a nonyl group, and R^3 represents a hydroxyethyl group, are preferable. A pseudo-type ceramide where in the formula (1), R^1 represents a hexadecyl group, X^1 represents a hydrogen atom, R^2 represents a pentadecyl group, and R^3 represents a hydroxyethyl group (N-(hexadecyloxyhydroxypropyl)-N-hydroxyethylhexadecanamide) is more preferable.

[0033]



[0034]

Moreover, examples of the alcohol having 12 to 22 carbon atoms include myristyl alcohol, cetyl alcohol, stearyl alcohol, behenyl alcohol, and oleyl alcohol. Among these alcohols, alcohols having a linear alkyl group are preferable; alcohols having 16 to 18 carbon atoms are more preferable; at least one or more selected from the group consisting of cetyl alcohol and stearyl alcohol are even more preferable; and alcohols including cetyl alcohol and stearyl alcohol are further preferable.

[0035]

Examples of the monofatty acid glycerin ester having 12 to 22 carbon atoms include glycerin monolauric acid ester, glycerin monomyristic acid ester, glycerin monopalmitic acid ester, glycerin monostearic acid ester, glycerin monobehenic acid ester, glycerin monooleic acid ester, and glycerin monoisostearic acid ester. Among these monofatty acid glycerin esters, at least one or more selected from the group consisting of glycerin monobehenic acid ester, glycerin monostearic acid ester,

and glycerin monopalmitic acid ester are preferable, and glycerin monobehenic acid ester is more preferable.

[0036]

Examples of the monoalkyl glyceryl ether having 12 to 22 carbon atoms include monodecyl glyceryl ether, monolauryl glyceryl ether, monomyristyl glyceryl ether, monocetyl glyceryl ether, monostearyl glyceryl ether, and monobehenyl glyceryl ether.

[0037]

Examples of the sorbitan monofatty acid ester having 12 to 22 carbon atoms include sorbitan monolaurate, sorbitan monomyristate, sorbitan monopalmitate, sorbitan monostearate, and sorbitan monobehenate.

[0038]

From the viewpoint of improving the preservation stability of the gel-like particles and the viewpoint of reducing friction feeling, among the aforementioned compounds, at least one or more selected from the group consisting of an alcohol having 14 to 22 carbon atoms, a monofatty acid glycerin ester having 14 to 22 carbon atoms, a monoalkyl glyceryl ether having 14 to 22 carbon atoms, a sorbitan monofatty acid ester having 14 to 22 carbon atoms are preferable as the component (d). By using these compounds as the component (d), the gel-like particles are able to have an α -gel structure. Thus, these compounds are considered to have the effect of improving the preservation stability of the gel-like particles and further reducing friction feeling. In

addition, as such components (d), at least one or more selected from the group consisting of an alcohol having 16 to 22 carbon atoms and a monofatty acid glycerin ester having 16 to 22 carbon atoms are more preferable, and at least one or more selected from the group consisting of cetyl alcohol, stearyl alcohol, and lipophilic glyceryl monostearate are even more preferable.

[0039]

Moreover, from the same viewpoint as described above, the gel-like particles preferably comprise, as the component (d), an alcohol having 14 to 22 carbon atoms and at least one selected from the group consisting of a monofatty acid glycerin ester having 14 to 22 carbon atoms, a monoalkyl glyceryl ether having 14 to 22 carbon atoms, and a sorbitan monofatty acid ester having 14 to 22 carbon atoms; more preferably comprise an alcohol having 14 to 22 carbon atoms and a monofatty acid glycerin ester having 14 to 22 carbon atoms; even more preferably comprise an alcohol having 16 to 22 carbon atoms and a monofatty acid glycerin ester having 16 to 22 carbon atoms; and further preferably comprise cetyl alcohol and stearyl alcohol, and a monofatty acid glycerin ester having 16 to 22 carbon atoms.

From the viewpoint of improving the preservation stability of the gel-like particles and the viewpoint of reducing friction feeling, the mass ratio between an alcohol having 14 to 22 carbon atoms and a monofatty acid glycerin ester having 14 to 22 carbon atoms (alcohol

having 14 to 22 carbon atoms/monofatty acid glycerin ester having 14 to 22 carbon atoms), comprised as the component (d), is preferably from 9 : 1 to 1 : 9, more preferably from 8 : 2 to 2 : 8, and even more preferably from 7 : 3 to 3 : 7.

[0040]

One or more amphipathic solid fats can be used as the component (d), and from the viewpoint of reducing friction feeling when the skin cosmetic is applied to the skin, the content of the amphipathic solid fat in the gel-like particles is 0.1% by mass or more, preferably 2% by mass or more, more preferably 4% by mass or more, and even more preferably 5% by mass or more. In addition, from the viewpoint of improving fresh feeling when the skin cosmetic is applied to the skin, the content of the amphipathic solid fat in the gel-like particles is 24% by mass or less, preferably 20% by mass or less, more preferably 16% by mass or less, and even more preferably 8% by mass or less. Moreover, the content of the amphipathic solid fat used as the component (d) in the gel-like particles is from 0.1% to 24% by mass, preferably from 2% to 20% by mass, more preferably from 4% to 16% by mass, and even more preferably from 5% to 8% by mass.

[0041]

The dextrin fatty acid ester used as the component (e) is an ester composed of fatty acid and dextrin, and the aforementioned fatty acid has preferably 8 to 24

carbon atoms, and more preferably 14 to 18 carbon atoms. The fatty acid is a linear or branched, saturated or unsaturated fatty acid, and is preferably a linear saturated fatty acid. The average polymerization degree of glucose of the aforementioned dextrin is more preferably 10 to 50, and even more preferably 20 to 30.

Specific examples of the dextrin fatty acid ester include dextrin palmitate, dextrin 2-ethylhexanoate, dextrin stearate, dextrin oleate, dextrin isopalmitate, dextrin isostearate, and a mixture thereof.

Examples of a commercially available dextrin fatty acid ester include dextrin palmitate (Rheoparl KL2, Rheoparl KS2, and Rheoparl TL2), a mixture of dextrin palmitate and dextrin 2-ethylhexanoate (Rheoparl TT2), and dextrin myristate (Rheoparl MKL2) (all of which are manufactured by Chiba Flour Milling Co., Ltd.).

[0042]

One or more dextrin fatty acid esters can be used as the component (e), and from the viewpoint of improving the ultraviolet light-shielding effect of the skin cosmetic, the content of the dextrin fatty acid ester in the gel-like particles is 0.05% by mass or more, preferably 0.2% by mass or more, more preferably 0.5% by mass or more, and even more preferably 0.6% by mass, and also, it is 5% by mass or less, preferably 3% by mass or less, more preferably 2% by mass or less, and even more preferably 1% by mass or less. In addition, the content of the dextrin fatty acid ester used as the component (e)

in the gel-like particles is from 0.05% to 5% by mass, preferably from 0.2% to 3% by mass, more preferably from 0.5% to 2% by mass, and even more preferably from 0.6% to 1% by mass.

[0043]

Water used as the component (f) constitutes the balance of each component constituting the gel-like particles, and the content of such water in the gel-like particles is from 30% to 80% by mass, preferably 35% to 70% by mass, more preferably from 40% to 60% by mass, and even more preferably from 45% to 55% by mass.

[0044]

The gel-like particles used as the component (A) may comprise an oily component (g) commonly used in cosmetics, other than the components (c), (d) and (e), as well as the above described components (a) to (f), and an emollient effect can be obtained by this oily component.

As such an oily component used as the component (g), an ester oil other than the component (c), which is liquid at an ordinary temperature (25°C), is preferable. Examples of such an ester oil include octyldodecyl myristate, isocetyl myristate, glyceryl tri2-ethylhexanoate, glyceryl triisostearate, propylene glycol isostearate, diisopropyl sebacate, diethylhexyl sebacate, trimethylpropane tri2-ethylhexanoate, di2-ethylhexyl succinate, propylene glycol di(caprylate/caprate), 2-ethylhexyl 2-cyano-3,3-diphenylacrylate, glyceryl tri(caprylate/caprate), trimethylolpropane trioctanoate,

glyceryl tricaprylate, ethylene glycol dioctanoate, glyceryl dimyristate, diethylene glycol dilaurate, pentaerythrite tetra2-ethylhexanoate, glyceryl monostearate diacetate, diisostearyl malate, alkyl (C_{12} - C_{15}) benzoate, octyldodecyl lactate, propylene glycol monostearate, propylene glycol oleate, oleyl lactate, propylene glycol dicaproate, diisopropyl sebacate, ethylene glycol monostearate, diethylene glycol dicaprato, neopentyl glycol dicaprato, neopentyl glycol di2-ethylhexanoate, glyceryl dicocoate fatty acid, glyceryl dilaurate, glyceryl sesquioleate, ethylene glycol monooleate, cetyl lactate, diethyl sebacate, methyl castor oil fatty acid, ethylene glycol palmitate, polyethylene glycol dilaurate, and tripropylene glycol dipivalate.

[0045]

From the viewpoint of reducing friction feeling and improving fresh feeling, among the aforementioned ester oils, at least one or more selected from the group consisting of an ester composed of a fatty acid having 12 to 18 carbon atoms and a branched alcohol having 14 to 22 carbon atoms, a tri(C_{12} - C_{18} branched fatty acid) glyceryl, a di(C_2 - C_{18} alkyl) C_2 - C_{18} dicarboxylate, and an alkyl (C_{12} - C_{15}) benzoate are preferable; and specifically, at least one or more selected from the group consisting of octyldodecyl myristate, isocetyl myristate, glyceryl tri2-ethylhexanoate, diisopropyl sebacate, diethylhexyl sebacate, neopentyl glycol di2-ethylhexanoate, neopentyl

glycol dicaprate, an alkyl (C₁₂-C₁₅) benzoate, and diisostearyl malate are more preferable.

[0046]

One or more oily components can be used as the component (g), and from the viewpoint of improving moisturizing effects obtained by the skin cosmetic and obtaining a good sense of use, the content of the oily component (g) in the gel-like particles is preferably 0.1% by mass or more, more preferably 0.2% by mass or more, even more preferably 0.5% by mass or more, and further preferably 1% by mass or more, and also, it is preferably 20% by mass or less, more preferably 15% by mass or less, even more preferably 10% by mass or less, and further preferably 8% by mass or less. In addition, the content of the oily component (g) in the gel-like particles is preferably from 0.1% to 20% by mass, more preferably from 0.2% to 15% by mass, even more preferably from 0.5% to 10% by mass, and further preferably from 1% to 8% by mass.

[0047]

Moreover, from the viewpoint of improving fresh feeling obtained after application of the skin cosmetic, the mass ratio of the total of the components (b) and (c) to the total of the components (b), (c), (d) and (e), $[(b)+(c)]/[(b)+(c)+(d)+(e)]$, in the gel-like particles used as the component (A), is preferably 0.5 or more, more preferably 0.7 or more, even more preferably 0.75 or more, and further preferably 0.8 or more, and also, it is

preferably 2 or less, more preferably 1.5 or less, even more preferably 1.3 or less, and further preferably 1 or less. In addition, the mass ratio of the total of the components (b) and (c) to the total of the components (b), (c), (d) and (e), $[(b)+(c)]/[(b)+(c)+(d)+(e)]$, in the gel-like particles used as the component (A), is preferably from 0.5 to 2, more preferably from 0.7 to 1.5, even more preferably from 0.75 to 1.3, and further preferably from 0.8 to 1.

[0048]

Furthermore, from the viewpoint of improving fresh feeling obtained after application of the skin cosmetic, the mass ratio of the component (c) to the total of the components (d) and (e), $[(c)]/[(d)+(e)]$, in the gel-like particles used as the component (A), is preferably 1 or more, more preferably 1.5 or more, even more preferably 2 or more, and further preferably 2.5 or more, and also, it is preferably 7 or less, more preferably 4.5 or less, even more preferably 4 or less, and further preferably 3.8 or less. In addition, the mass ratio of the component (c) to the total of the components (d) and (e), $[(c)]/[(d)+(e)]$, in the gel-like particles used as the component (A), is preferably from 1 to 7, more preferably from 1.5 to 4.5, even more preferably from 2 to 4, and further preferably from 2.5 to 3.8.

[0049]

The gel-like particles used as the component (A) can be produced, for example, by the following method.

First, the gelling agent used as the component (a) is mixed with the water used as the component (f), and the components are then heated to the melting temperature of the gelling agent or higher, so that the gelling agent is fully dissolved in the water, thereby preparing a water phase component used for the gel-like particles.

Upon preparation of the water phase component used for the gel-like particles, it is preferable to add a surfactant, a thickener, or the like other than the gelling agent to the components, and it is more preferable to add a surfactant. By addition of such a surfactant, the preservation stability of the obtained gel-like particles is improved, and the preservation stability of the skin cosmetic comprising the gel-like particles is also improved.

[0050]

The preservation stability of the gel-like particles means that the gel-like particles retain their shape and structure. Gel-like particles having poor preservation stability cause problems such as the leakage of oil from the gel-like particles comprising the same.

Moreover, the preservation stability of the skin cosmetic means that the water phase of the cosmetic is not separated from the oil phase thereof.

Since the cosmetic of the present invention comprises a thickener, if the preservation stability of the gel-like particles is poor, oil leaking from the gel-like particles binds to the thickener, and it promotes

separation of the water phase from the oil phase. Thus, preservation stability is an important physical property. [0051]

As surfactants, ionic surfactants and nonionic surfactants, which are surfactants other than the components (d) and (e), can be used. Examples of the ionic surfactant which can be used herein include an anionic surfactant, a cationic surfactant, and an amphoteric surfactant.

Examples of the anionic surfactant include: fatty acid having 12 to 22 carbon atoms or a salt thereof, such as sodium laurate and arginine stearate; alkyl sulfate ester having 12 to 22 carbon atoms or a salt thereof, such as sodium lauryl sulfate and potassium lauryl sulfate; alkyl ether sulfate ester having 12 to 22 carbon atoms or a salt thereof, such as triethanolamine polyoxyethylene lauryl sulfate; N-acylsarcosine with the acyl having 12 to 22 carbon atoms or a salt thereof, such as sodium lauroyl sarcosine; alkyl phosphate having 12 to 22 carbon atoms or a salt thereof, such as sodium monostearyl phosphate; polyoxyethylene alkyl ether phosphate with the alkyl having 12 to 22 carbon atoms or a salt thereof, such as sodium polyoxyethylene oleyl ether phosphate and sodium polyoxyethylene stearyl ether phosphate; dialkyl sulfosuccinic acid having 12 to 24 carbon atoms or a salt thereof, such as sodium di-2-ethylhexyl sulfosuccinate; and N-alkyloylmethyltaurine having 12 to 22 carbon atoms or a salt thereof, such as

sodium N-stearoyl-N-methyltaurate, and N-acyl glutamic acid having 12 to 22 carbon atoms or a salt thereof, such as sodium dilauroyl glutamate, monosodium N-lauroyl glutamate, sodium N-stearoyl-L-glutamate, arginine N-stearoyl-L-glutamate, sodium N-stearoyl glutamate, and sodium N-myristoyl-L-glutamate.

[0052]

The cationic surfactant is preferably a quaternary ammonium salt. Examples of the cationic surfactant include alkyl trimethyl ammonium chloride such as stearyl trimethyl ammonium chloride and lauryl trimethyl ammonium chloride, dialkyl dimethyl ammonium chloride, trialkyl methyl ammonium chloride, and alkylamine salts.

[0053]

Examples of the amphoteric surfactant include alkyl dimethylamine oxide, alkyl carboxy betaine, alkyl sulfobetaine, amidoamino acid salt, and alkyl amidopropyl betaine. Among these, alkyl amidopropyl betaine is preferable.

[0054]

Examples of the nonionic surfactant include polyglycerin fatty acid ester, propylene glycol fatty acid ester, pentaerythritol fatty acid ester, polyoxyethylene sorbitan fatty acid ester, polyoxyethylene sorbit fatty acid ester, polyoxyethylene glycerin fatty acid ester, polyethylene glycol fatty acid ester, polyoxyethylene alkyl ether, polyoxyethylene phytosterol, polyoxyethylene phytostanol, polyoxyethylene

polyoxypropylene alkyl ether, polyoxyethylene alkylphenyl ether, polyoxyethylene castor oil, polyoxyethylene hydrogenated castor oil, polyoxyethylene lanoline, polyoxyethylene lanoline alcohol, a polyoxyethylene beeswax derivative, polyoxyethylene alkylamine, polyoxyethylene fatty acid amide, a polyoxyethylene alkylphenyl formaldehyde condensate, single chain polyoxyethylene alkyl ether, and polyether-modified silicone.

[0055]

From the viewpoint of improving emulsion stability, the surfactant is preferably an ionic surfactant, and more preferably an anionic surfactant.

In addition, anionic surfactants, other than fatty acid or a salt thereof, are preferable. One or more selected from the group consisting of a polyoxyethylene alkyl ether phosphate with the alkyl having 12 to 22 carbon atoms or a salt thereof, a sodium N-alkyloylmethyлтаurate having 12 to 22 carbon atoms, an N-acyl glutamate with the acyl having 12 to 22 carbon atoms are preferable; and in terms of sense of use, sodium N-alkyloylmethyлтаurine having 12 to 22 carbon atoms is more preferable. Among the sodium N-alkyloylmethyлтаurate having 12 to 22 carbon atoms, a sodium N-alkyloylmethyлтаurate having 12 to 20 carbon atoms is preferable, and a sodium N-alkyloylmethyлтаurate having 14 to 20 carbon atoms is more preferable, and

specifically, sodium N-stearoyl-N-methyltaurate is even more preferable.

[0056]

One or more surfactants can be used in combination.

The content of the surfactant indicates the content of a compound excluding counter ions, and in terms of achieving stable dispersion of each component and obtaining sense of use without stickiness, the content of the surfactant in the gel-like particles is preferably 0.01% by mass or more, more preferably 0.047% by mass or more, and even more preferably 0.066% by mass or more, and also, it is preferably 0.95% by mass or less, more preferably 0.47% by mass or less, and even more preferably 0.28% by mass or less. Moreover, the content of the surfactant in the gel-like particles, which is the content of a compound excluding counter ions, is from 0.01% to 0.95% by mass, preferably from 0.047% to 0.47% by mass, and more preferably from 0.066% to 0.28% by mass.

[0057]

Meanwhile, the component (b) which is an inorganic ultraviolet scattering agent, the component (c) which is an organic ultraviolet absorber, the component (d) which is an amphipathic solid fat, and the component (e) which is a dextrin fatty acid ester are mixed with one another to prepare an oil phase component. In a case where the components include solid components, for example, the mixing is carried out, as necessary, under heating, so that the components are dissolved.

The water phase component is mixed with the oil phase component to prepare a mixed solution, and thereafter, gel-like particles can be obtained from the mixed solution according to a commonly used dropping method, spraying method, stirring method, or the like.

Moreover, in a case where the organic ultraviolet absorber used as the component (c) comprises an oil-soluble ultraviolet absorber, when the oil phase component is prepared, the inorganic ultraviolet scattering agent used as the component (b) can be mixed with the organic ultraviolet absorber used as the component (c) to prepare a slurry, and the amphipathic solid fat used as the component (d) can be mixed with the dextrin fatty acid ester used as the component (e) by using a mixing machine such as a flat paddle type Super Mix, to prepare an oil phase. Thereafter, the water phase component is mixed with the oil phase component in the same manner as described above to prepare a mixed solution, and then, gel-like particles can be obtained from the mixed solution according to a commonly used dropping method, spraying method, stirring method, or the like.

[0058]

The dropping method is a method of producing gel-like particles, in which a mixed solution is discharged from pores, and then, by utilizing the property of the discharged mixed solution to be converted to droplets by the surface tension or interfacial tension, the obtained

droplets are cooled and solidified in a gas phase such as air or in a liquid phase. In this method, from the viewpoint of producing gel-like particles having a uniform particle diameter, the mixed solution is preferably discharged from pores, while giving vibration thereto. For example, JP-A-2002-58990 describes a method of producing gel-like particles, in which while vibration is given to a dispersion prepared by dispersing an oil phase component in a water phase component solution, in which non-crosslinked hydrogel is dissolved, the dispersion is discharged from pores to form droplets, and the droplets are then cooled and solidified.

[0059]

Meanwhile, the spraying method is a method of producing gel-like particles, in which using a spray nozzle, a mixed solution is sprayed from the spray nozzle to a gas phase, and at the same time, droplets are formed by the surface tension, and the droplets are then cooled and solidified in the gas phase.

For example, microcapsules can be obtained by producing such microcapsules having a multi-core structure comprising natural carotenoid according to a spray cooling method, and more specifically, by spraying an O/W type emulsion with a gelation temperature or higher to a column in which an atmosphere with the gelation temperature of the O/W type emulsion or lower is established, such that the mean particle diameter of the particles can be 50 to 3,000 μm , then cooling and

solidifying the resultants, and then capturing them (JP-A-9-302379). Moreover, when droplets, which are formed by spraying a dispersion prepared by dispersing an oil phase component in a water phase component aqueous solution, in which a non-crosslinked hydrogel gelling agent with a gelation point of 30°C or higher is dissolved, into a gas phase, are cooled and solidified, gel-like particles can be produced, while cooling equipment for cooling the droplets generated as a result of the spraying is not necessarily required (JP-A-2007-160277).

[0060]

The stirring method is a method of producing gel-like particles, in which a mixed solution is poured into a liquid, which has a property of being substantially not mixed with the mixed solution and whose temperature is adjusted to a gelation temperature or higher, and then, the mixed solution is processed into fine particles by shearing force caused by stirring, and by utilizing the property of being converted to droplets by the interfacial tension, the obtained droplets are cooled and solidified in the liquid which is substantially not mixed with the mixed solution.

For example, microcapsules can be produced by preparing an O/W emulsion from an internal oil phase and a water phase comprising a hydrophilic polymer gelling agent which is solidified by heating and cooling, further dispersing and emulsifying this O/W emulsion in an

external oil phase to prepare an O/W/O emulsion, and then solidifying the water phase for encapsulation (JP-A-2001-97818). In addition, by utilizing shear gel, the capturing of active substances of gel-like particles can be enhanced and dispersibility can be improved (Japanese Patent No. 3949580).

[0061]

In all cases of applying the dropping method, the spraying method, and the stirring method, the temperature of the mixed solution, during the discharging, spraying, or pouring of the mixed solution, is preferably kept at a temperature, which is the gelation temperature or higher and 100°C or lower. In addition, from the viewpoint of easily producing spherical particles having good appearance, the temperature of the mixed solution is kept preferably at the gelation temperature +10°C or higher, and more preferably at the gelation temperature +20°C or higher. The upper limit of the temperature is 100°C, which is the boiling point of water.

[0062]

Moreover, in addition to the above described methods, spherical gel-like particles can be produced by dissolving a gelling agent in water, then cooling it to form gel, and then crushing the gel (JP-A-2001-342125 and JP-A-2009-203200).

Furthermore, from the viewpoint of improving the dispersibility of the gel-like particles in the cosmetic, a method of producing gel-like particles in the form of a

dispersion thereof is also effective. The gel-like particles obtained by the above described methods may be dispersed in a solution. Otherwise, for example, a solution has previously been poured into a container for recovering droplets in the dropping method, and a dispersion is then sprayed towards the solution, so that the gel-like particles can be obtained in the form of a dispersion.

[0063]

From the viewpoint of improving freshness, the mean particle diameter of the obtained gel-like particles is preferably 10 μm or more, more preferably 30 μm or more, even more preferably 40 μm or more, further preferably 45 μm or more, and particularly preferably 50 μm or more. Also, from the viewpoint of improving the appearance of the cosmetic, it is preferably 300 μm or less, more preferably 250 μm or less, even more preferably 200 μm or less, further preferably 180 μm or less, and particularly preferably 150 μm or less.

Moreover, the mean particle diameter of the gel-like particles is preferably from 10 to 300 μm , more preferably from 30 to 250 μm , even more preferably from 40 to 200 μm , further preferably from 45 to 180 μm , and particularly preferably from 50 to 150 μm .

[0064]

In the present invention, with regard to the mean particle diameter of the gel-like particles, a median diameter relative to volume is measured at a refractive

index of 1.20, with a laser diffraction/scattering particle size distribution measuring apparatus LA-920 (manufactured by HORIBA).

[0065]

From the viewpoint of improving the ultraviolet light-shielding effect and the viewpoint of improving fresh feeling, the content of the gel-like particles used as the component (A) in the skin cosmetic, namely, based on the total mass of the skin cosmetic, is 3% by mass or more, preferably 4% by mass or more, more preferably 5% by mass or more, and even more preferably 15% by mass or more, and also it is 50% by mass or less, preferably 40% by mass or less, more preferably 27% by mass or less, and further preferably 25% by mass or less. Moreover, the content of the gel-like particles used as the component (A) in the skin cosmetic is from 3% to 50% by mass, preferably from 4% to 40% by mass, more preferably from 5% to 27% by mass, and further preferably from 15% to 25% by mass.

[0066]

The thickener used as the component (B) does not thicken a water phase, namely, a water phase in the gel-like particles, but it thickens a water phase in the skin cosmetic, so as to play a role for dispersing the gel-like particles used as the component (A), and the thickener is preferably an acrylic acid polymer.

The acrylic acid polymer may be a homopolymer comprising, as a constitutional unit, a monomer selected

from the group consisting of methacrylic acid, acrylic acid, methacrylate, acrylate, methacrylamide and acrylamide, or a copolymer comprising two or more of these monomers. Examples of the acrylic acid polymer include a carboxyvinyl polymer (Shintaren K, L; Wako Pure Chemical Industries, Ltd.), an alkyl-modified carboxyvinyl polymer (PEMULEN TR-1, TR-2; The Lubrizol Corporation), polyacrylamide sold by SEPPIC (SEPIGEL 305), a (sodium acrylate/sodium acryloyldimethyl taurate) copolymer (SIMULGEL EG), a (hydroxyethyl acrylate/sodium acryloyldimethyl taurate) copolymer (SIMULGEL FL, SIMULGEL NS, SEPIPLUS S, SEPINOV EMT 10), an (acrylamide/ammonium acrylate) copolymer (SEPIPLUS 265), and polyacrylate-13 (SEPIPLUS 400).

Among these substances, the use of one or more selected from the group consisting of an alkyl-modified carboxyvinyl polymer and a (sodium acrylate/sodium acryloyldimethyl taurate) copolymer is preferable because it is able to stabilize the preparation even when it is used in a small amount, and also in terms of the effect of preventing distortion occurring upon application of the cosmetic and the improvement of sense of use.

[0067]

The acrylic acid polymer is used as acrylic acid polymer salts as a result of neutralization with bases. Examples of the base include: alkali metal hydroxides such as sodium hydroxide and potassium hydroxide; ammonium; alkanolamine-derived ammoniums such as

monoethanolamine, diethanolamine, triethanolamine, and 2-amino-2-methylpropanol; and basic amino acids such as arginine and lysine.

[0068]

One or more components (B) can be used, and from the viewpoint of improving the preservation stability of the skin cosmetic, the content of the component (B) in the skin cosmetic, namely, based on the total mass of the skin cosmetic, is 0.05% by mass or more, preferably 0.15% by mass or more, more preferably 0.2% by mass or more, and even more preferably 0.3% by mass or more, and also, it is 3% by mass or less, preferably 2% by mass or less, more preferably 1.5% by mass or less, and even more preferably 1% by mass or less. Moreover, the content of the component (B) in the skin cosmetic is from 0.05% to 3% by weight, preferably from 0.15% to 2% by mass, more preferably from 0.2% to 1.5% by mass, and even more preferably from 0.3% to 1% by mass.

In the present invention, the content of the component (B) in the skin cosmetic means the content of an acid (that is, even if it is neutralized, the content is defined in terms of an acid).

[0069]

In the present invention, from the viewpoint of improving the preservation stability of the gel-like particles and the skin cosmetic, the mass ratio of the component (a) to the component (B), $((a)/(B))$, which is based on the total mass of the skin cosmetic, is

preferably 0.1 or more, more preferably 0.15 or more, even more preferably 0.2 or more, and further preferably 0.25 or more, and also, it is preferably 4 or less, more preferably 2 or less, even more preferably 1.5 or less, and further preferably 1 or less. In addition, the mass ratio of the component (a) to the component (B), ((a)/(B)), which is based on the total mass of the skin cosmetic, is preferably from 0.1 to 4, more preferably from 0.15 to 2, even more preferably from 0.2 to 1.5, and further preferably from 0.25 to 1.

[0070]

Water used as the component (C) constitutes the balance of each component constituting the skin cosmetic, and the content of the water in the skin cosmetic is from 30% to 95% by mass, preferably from 40% to 90% by mass, more preferably from 50% to 80% by mass, and even more preferably from 65% to 75% by mass. It is to be noted that the water content in the component (A) is not included in the amount of the component (C).

[0071]

In addition to the above described components, components used in ordinary cosmetics, such as an oily component, a moisturizer, alcohols, a chelating agent, a pH adjuster, an antiseptic, a thickener other than the component (B), a pigment, and a flavor, can be arbitrarily combined with one another, and can be mixed into the skin cosmetic of the present invention.

[0072]

Moreover, in the skin cosmetic of the present invention, the organic ultraviolet absorber used as the component (c), the dextrin fatty acid ester used as the component (e), and the oily component used as the component (g), which are comprised in the gel-like particles, can also be mixed into a water phase (outer layer) other than in the gel-like particles, and the thus obtained skin cosmetic can be used.

In the skin cosmetic of the present invention, an organic ultraviolet absorber (c') is preferably further comprised in the skin cosmetic other than in the gel-like particles.

[0073]

From the viewpoint of further improving the ultraviolet light-shielding effect, an example of the organic ultraviolet absorber (c') used in the skin cosmetic other than in the gel-like particles is hexyl diethylaminohydroxybenzoylbenzoate. In this case, it is preferable not to comprise titanium oxide, other than in the gel-like particles.

From the viewpoint of further improving the ultraviolet light-shielding effect and the viewpoint of improving fresh feeling, the content of the organic ultraviolet absorber (c') in the skin cosmetic (other than in the gel-like particles) is preferably 3% by mass or more, more preferably 4% by mass or more, and even more preferably 4.5% by mass or more, and also, it is preferably 30% by mass or less, more preferably 25% by

mass or less, even more preferably 20% by mass or less, and further preferably 18% by mass or less. Moreover, the content of the organic ultraviolet absorber (c') in the skin cosmetic (other than in the gel-like particles) is preferably from 0% to 30% by mass, more preferably from 3% to 25% by mass, even more preferably from 4% to 20% by mass, and further preferably from 4.5% to 18% by mass.

[0074]

Furthermore, from the viewpoint of extending the usable area of the cosmetic by extending an ultraviolet absorption region, a combination of an organic ultraviolet absorber having an ultraviolet absorption region in the UVA region (320 to 400 nm) and an organic ultraviolet absorber having an ultraviolet absorption region in the UVB region (280 to 320 nm) is preferably used as the organic ultraviolet absorber (c'). The organic ultraviolet absorber having an ultraviolet absorption region in the UVA region (320 to 400 nm) is preferably diethylamino hydroxybenzoyl benzoic acid hexyl ester (e.g., Uvinul Aplus; manufactured by BASF), and the organic ultraviolet absorber having an ultraviolet absorption region in the UVB region (280 to 320 nm) preferably 2-ethylhexyl p-methoxycinnamate (e.g., Uvinul MC 80; manufactured by BASF) and bis-ethylhexyloxyphenol methoxyphenyl triazine (e.g., Tinosorb S; manufactured by BASF).

[0075]

Accordingly, from the viewpoint of extending the usable area of the cosmetic by extending an ultraviolet absorption region, the viewpoint of improving the ultraviolet light-shielding effect, the viewpoint of improving fresh feeling, the viewpoint of improving smooth feeling without friction feeling, and the viewpoint of improving preservation stability, as the organic ultraviolet absorber (c'), namely, as an organic ultraviolet absorber comprised in the skin cosmetic other than in the gel-like particles, a combination of diethylamino hydroxybenzoyl benzoic acid hexyl ester (e.g., Uvinul Aplus; manufactured by BASF) which is an organic ultraviolet absorber having an ultraviolet absorption region in the UVA region (320 to 400 nm), with one or more selected from the group consisting of 2-ethylhexyl p-methoxycinnamate (e.g., Uvinul MC 80; manufactured by BASF) and bis-ethylhexyloxyphenol methoxyphenyl triazine (e.g., Tinosorb S; manufactured by BASF) that are organic ultraviolet absorbers having an ultraviolet absorption region in the UVB region (280 to 320 nm), is preferably used.

Further, from the same viewpoint as those described above, regarding the organic ultraviolet absorber comprised in the skin cosmetic other than in the gel-like particles, the mass ratio of the organic ultraviolet absorber having an ultraviolet absorption region in the UVB region (280 to 320 nm) to the organic ultraviolet absorber having an ultraviolet absorption region in the

UVA region (320 to 400 nm), (the UVB region/the UVA region), is preferably from 15/1 to 1/1, more preferably from 10/1 to 1.5/1, and even more preferably from 6/1 to 2/1.

[0076]

From the viewpoint of reducing odor caused by diethylamino hydroxybenzoyl benzoic acid hexyl ester, when the diethylamino hydroxybenzoyl benzoic acid hexyl ester (e.g., Uvinul Aplus; manufactured by BASF) is used as an organic ultraviolet absorber having an ultraviolet absorption region in the UVA region (320 to 400 nm), the content of titanium oxide in the skin cosmetic (other than in the gel-like particles) is preferably 0.5% by mass or less, more preferably 0.1% by mass or less, even more preferably 0.01% by mass or less, and further preferably, substantially 0% by mass.

When titanium oxide is comprised as the inorganic ultraviolet scattering agent (b) in the gel-like particles used as the component (A), the organic ultraviolet absorber (c) preferably does not comprise diethylamino hydroxybenzoyl benzoic acid hexyl ester, and a preferred content thereof is as described in the explanation of the gel-like particles.

[0077]

Further, from the viewpoint of improving ultraviolet protective performance and the viewpoint of improving fresh feeling obtained after application of the ultraviolet skin cosmetic, the mass ratio of the total of

the components (b) and (c) to the total of the components (b), (c) and (c') in the skin cosmetic, $\frac{[(b)+(c)]}{[(b)+(c)+(c')]}$, is preferably 0.15 or more, more preferably 0.25 or more, even more preferably 0.35 or more, and further preferably 0.4 or more, and also, it is preferably 1.1 or less, more preferably 0.95 or less, even more preferably 0.8 or less, and further preferably 0.65 or less. Moreover, the mass ratio of the total of the components (b) and (c) to the total of the components (b), (c) and (c'), $\frac{[(b)+(c)]}{[(b)+(c)+(c')]}$, is preferably from 0.15 to 1.1, more preferably from 0.25 to 0.95, even more preferably from 0.35 to 0.8, and further preferably from 0.4 to 0.65.

[0078]

In addition, from the viewpoint of further improving the ultraviolet light-shielding effect and the viewpoint of improving fresh feeling, the content of the dextrin fatty acid ester (e') used other than in the gel-like particles, in the skin cosmetic (other than in the gel-like particles), is preferably 0.1% by mass or more, more preferably 0.2% by mass or more, and even more preferably 0.25% by mass or more, and also, it is preferably 3% by mass or less, more preferably 2% by mass or less, even more preferably 1.5% by mass or less, and further preferably 0.8% by mass or less. Moreover, the content of the dextrin fatty acid ester (e') in the skin cosmetic (other than in the gel-like particles) is preferably from 0% to 3% by mass, more preferably from 0.1% to 2% by mass,

even more preferably from 0.2% to 1.5% by mass, and further preferably from 0.25% to 0.8% by mass.

From the viewpoint of improving the moisturizing effect of the skin cosmetic and obtaining a good sense of use, the content of another oily component (g') used other than in the gel-like particles, in the skin cosmetic (other than in the gel-like particles), is preferably 0.2% by mass or more, more preferably 0.5% by mass or more, and even more preferably 0.8% by mass or more, and also, it is preferably 15% by mass or less, more preferably 10% by mass or less, even more preferably 8% by mass or less, and further preferably 5% by mass or less. Moreover, the content of another oily component (g') in the skin cosmetic (other than in the gel-like particles) is preferably from 0% to 15% by mass, more preferably from 0.2% to 10% by mass, even more preferably from 0.5% to 8% by mass, and further preferably from 0.8% to 5% by mass.

[0079]

Furthermore, from the viewpoint of improving the ultraviolet light-shielding effect, the content of the total inorganic ultraviolet absorbers in the skin cosmetic, namely, the total content of the component (b) which is an inorganic ultraviolet absorber in the gel-like particles and the component (b') which is an inorganic ultraviolet absorber in the skin cosmetic other than in the gel-like particles is preferably from 0.03% to 15% by mass, more preferably 0.5% to 10% by mass, even

more preferably 1% to 6% by mass, and further preferably 1.5% to 4.5% by mass.

Further, from the viewpoint of improving the ultraviolet light-shielding effect, the total content of the components (c) and (c'), namely, the content of the total organic ultraviolet absorbers in the skin cosmetic is preferably from 1% to 30% by mass, more preferably from 2% to 20% by mass, even more preferably from 5% to 15% by mass, and further preferably from 7% to 13% by mass.

Further, from the viewpoint of further improving the ultraviolet light-shielding effect and the viewpoint of improving fresh feeling, the total content of the components (e) and (e') in the skin cosmetic, namely, the content of the total dextrin fatty acid esters in the skin cosmetic is preferably from 0.1% to 2% by mass, more preferably from 0.2% to 1.5% by mass, even more preferably from 0.3% to 1.0% by mass, and further preferably from 0.38% to 0.8% by mass.

[0080]

The skin cosmetic of the present invention can be produced by mixing the gel-like particles used as the component (A), the thickener used as the component (B), and the water used as the component (C). From the viewpoint of maintaining the structure of the gel-like particles even after the mixing of the components, the following method is preferable.

That is to say, the thickener used as the component (B) is mixed with the water used as the component (C) to prepare a thickener dispersion, and then, components other than the gel-like particles used as the component (A) are dispersed and mixed therein. To the mixed solution, the gel-like particles used as the component (A) are added, and the obtained mixture is then stirred to such an extent that the gel-like particles are not disintegrated, so as to be able to produce the skin cosmetic of the present invention. In a case where a solid component is comprised as another component, it is preferable that such another component have previously been heated to the solubility thereof or higher, and thus have been melted, and that the resultant be then added and mixed.

Moreover, the thickener used as the component (B) has previously been dispersed in water, so that the dispersibility of the thickener in the skin cosmetic is enhanced, and the sense of use of the obtained skin cosmetic is improved. Furthermore, by adding the gel-like particles at the end of the step, a skin cosmetic can be obtained while the structure of the gel-like particles is maintained, and thus, the sense of use is improved.

[0081]

The skin cosmetic of the present invention can be used for various intended uses and forms, such as an O/W type emulsion cosmetic, an aqueous cosmetic, a gel-type

cosmetic, a cream, a milky lotion, a lotion, a foundation, and a skin-cleansing agent.

[0082]

The skin cosmetic of the present invention can be used by being applied to skin, in particular, skin other than the hair of the head, and preferably, to any one of face, body, hands and feet, etc. For example, by applying the skin cosmetic of the present invention to skin, the skin can be protected from ultraviolet rays, and further, the fresh feeling and smoothness of the skin can be improved.

With regard to the above described embodiments, the present invention further discloses the following composition.

[0083]

<1> A skin cosmetic comprising the following components

(A), (B) and (C):

(A) from 3% to 50% by mass of gel-like particles,

(B) from 0.05% to 3% by mass of a thickener, and

(C) from 30% to 95% by mass of water, where

the component (A) is gel-like particles comprising the following (a) to (f):

(a) from 0.1% to 10% by mass of at least one gelling agent selected from the group consisting of agar, carrageenan and gelatin,

(b) from 1% to 30% by mass of an inorganic ultraviolet scattering agent,

(c) from 1% to 40% by mass of an organic ultraviolet absorber,

(d) from 0.1% to 24% by weight of an amphipathic solid fat,

(e) from 0.05% to 5% by mass of a dextrin fatty acid ester, and

(f) from 30% to 80% by mass of water.

<2> A skin cosmetic comprising the following components

(A), (B) and (C):

(A) from 3% to 50% by mass of gel-like particles,

(B) from 0.05% to 3% by mass of a thickener, and

(C) from 30% to 95% by mass of water, where

the gel-like particles used as the component (A) comprise the following (a) to (f):

(a) from 0.1% to 10% by mass of at least one gelling agent selected from the group consisting of agar, carrageenan and gelatin,

(b) from 1% to 30% by mass of an inorganic ultraviolet scattering agent,

(c) from 1% to 40% by mass of an organic ultraviolet absorber,

(d) from 0.1% to 24% by mass of an amphipathic solid fat,

(e) from 0.05% to 5% by mass of a dextrin fatty acid ester, and

(f) from 30% to 80% by mass of water.

[0084]

<3> The skin cosmetic according to the above <1> or <2>, where the gelling agent comprised as the component (a) in the component (A) is agar.

<4> The skin cosmetic according to any one of the above <1> to <3>, where the content of the component (a) in the gel-like particles is preferably 0.3% by mass or more, more preferably 0.5% by mass or more, and even more preferably 0.72% by mass or more, and also it is preferably 7% by mass or less, more preferably 4% by mass or less, and even more preferably 1% by mass.

<5> The skin cosmetic according to any one of the above <1> to <4>, where the inorganic ultraviolet scattering agent comprised as the component (b) in the component (A) is preferably a metal oxide selected from the group consisting of titanium oxide, zinc oxide and cerium oxide.

<6> The skin cosmetic according to any one of the above <1> to <5>, where the inorganic ultraviolet scattering agent comprised as the component (b) in the component (A) is preferably a titanium oxide, the surface of which is coated with a metal oxide selected from the group consisting of silane and alumina and is then treated with alkylsilane or fatty acid, more preferably a titanium oxide, the surface of which is treated with alumina and is then treated with fatty acid, even more preferably a titanium oxide, the surface of which is treated with alumina and is then treated with fatty acid having 12 to 22 carbon atoms, and particularly preferably a titanium oxide, the surface of which is treated with alumina and

is then treated with fatty acid having 14 to 20 carbon atoms.

<7> The skin cosmetic according to any one of the above <1> to <6>, where the content of the component (b) in the gel-like particles is preferably 3% by mass or more, more preferably 8% by mass or more, and even more preferably 10% by mass or more, and also, it is preferably 25% by mass or less, more preferably 21% by mass or less, and even more preferably 18% by mass or less.

[0085]

<8> The skin cosmetic according to any one of the above <1> to <7>, where the organic ultraviolet absorber comprised as the component (c) in the component (A) is preferably one or more selected from the group consisting of 2-ethylhexyl p-methoxycinnamate, 2,4,6-tris[4-(2-ethylhexyloxycarbonyl)anilino]-1,3,5-triazine, 4-tert-butyl-4'-methoxydibenzoylmethane, octocrylene, 2-ethylhexyl dimethoxybenzylidenedioxoimidazolidinepropionate, diethylamino hydroxybenzoyl benzoic acid hexyl ester, bis-ethylhexyloxyphenol methoxyphenyl triazine, and methylenebisbenzotriazolyltetramethylbutylphenol; more preferably one or more selected from the group consisting of 2-ethylhexyl p-methoxycinnamate, diethylamino hydroxybenzoyl benzoic acid hexyl ester, and bis-ethylhexyloxyphenol methoxyphenyl triazine; and even more preferably one or more selected from the group consisting

of 2-ethylhexyl p-methoxycinnamate and bis-ethylhexyloxyphenol methoxyphenyl triazine.

<9> The skin cosmetic according to any one of the above <1> to <8>, where the content of the component (c) in the gel-like particles is preferably 4% by mass or more, more preferably 10% by mass or more, and even more preferably 15% by mass or more, and also, it is preferably 35% by mass or less, more preferably 28% by mass or less, and even more preferably 24% by mass or less.

[0086]

<10> The skin cosmetic according to any one of the above <1> to <9>, where when the component (b) comprises titanium oxide in the gel-like particles used as the component (A), the content of diethylamino hydroxybenzoyl benzoic acid hexyl ester in the organic ultraviolet absorber used as the component (c) is preferably 0.5% by mass or less, more preferably 0.1% by mass or less, even more preferably 0.01% by mass or less, and further preferably, substantially 0% by mass.

<11> The skin cosmetic according to any one of the above <1> to <10>, where the amphipathic solid fat comprised as the component (d) in the component (A) is preferably ceramide, an alcohol having 12 to 22 carbon atoms, a monofatty acid glycerin ester having 12 to 22 carbon atoms, a monoalkyl glyceryl ether having 12 to 22 carbon atoms, or a sorbitan monofatty acid ester having 12 to 22 carbon atoms; more preferably one or more selected from the group consisting of an alcohol having 14 to 22 carbon

atoms, a monofatty acid glycerin ester having 14 to 22 carbon atoms, a monoalkyl glyceryl ether having 14 to 22 carbon atoms, and a sorbitan monofatty acid ester having 14 to 22 carbon atoms; even more preferably one or more selected from the group consisting of an alcohol having 16 to 22 carbon atoms and a monofatty acid glycerin ester having 16 to 22 carbon atoms; and further preferably one or more selected from the group consisting of cetyl alcohol, stearyl alcohol and lipophilic glycerin monostearate.

[0087]

<12> The skin cosmetic according to any one of the above <1> to <11>, where the component (A) preferably comprises, as the component (d), an alcohol having 14 to 22 carbon atoms and at least one selected from the group consisting of a monofatty acid glycerin ester having 14 to 22 carbon atoms, a monoalkyl glyceryl ether having 14 to 22 carbon atoms, and a sorbitan monofatty acid ester having 14 to 22 carbon atoms, more preferably comprises an alcohol having 14 to 22 carbon atoms and a monofatty acid glycerin ester having 14 to 22 carbon atoms, even more preferably comprises an alcohol having 16 to 22 carbon atoms and a monofatty acid glycerin ester having 16 to 22 carbon atoms, and further preferably comprises cetyl alcohol and stearyl alcohol, and a monofatty acid glycerin ester having 16 to 22 carbon atoms.

<13> The skin cosmetic according to any one of the above <1> to <12>, where the component (A) preferably comprises,

as the component (d), an alcohol having 14 to 22 carbon atoms and a monofatty acid glycerin ester having 14 to 22 carbon atoms, and the mass ratio (alcohol having 14 to 22 carbon atoms/monofatty acid glycerin ester having 14 to 22 carbon atoms) is preferably from 9 : 1 to 1 : 9, more preferably from 8 : 2 to 2 : 8, and even more preferably from 7 : 3 to 3 : 7.

<14> The skin cosmetic according to any one of the above <1> to <13>, where the content of the component (d) in the gel-like particles is preferably 2% by mass or more, more preferably 4% by mass or more, and even more preferably 5% by mass, and also, it is preferably 20% by mass or less, more preferably 16% by mass or less, and even more preferably 8% by mass or less.

[0088]

<15> The skin cosmetic according to any one of the above <1> to <14>, where the dextrin fatty acid ester comprised as the component (e) in the component (A) is preferably an ester composed of a fatty acid having 8 to 24 carbon atoms and dextrin, more preferably an ester composed of a linear saturated fatty acid having 8 to 24 carbon atoms and dextrin, and even more preferably an ester composed of a linear saturated fatty acid having 14 to 18 carbon atoms and dextrin.

<16> The skin cosmetic according to any one of the above <1> to <15>, where the content of the component (e) in the gel-like particles is preferably 0.2% by mass or more, more preferably 0.5% by mass or more, even more

preferably 0.6% by mass, and also, it is preferably 3% by mass or less, more preferably 2% by mass or less, and even more preferably 1% by mass or less.

<17> The skin cosmetic according to any one of the above <1> to <16>, where the content of the water comprised as the component (f) in the component (A) in the gel-like particles is preferably from 35% to 70% by mass, more preferably from 40% to 60% by mass, and even more preferably from 45% to 55% by mass.

[0089]

<18> The skin cosmetic according to any one of the above <1> to <17>, where the gel-like particles used as the component (A) may further comprise (g) an oily component, and the oily component is preferably an ester oil other than the component (c), which is liquid at an ordinary temperature (25°C).

<19> The skin cosmetic according to the above <18>, where the content of the component (g) in the gel-like particles is preferably 0.1% by mass or more, more preferably 0.2% by mass or more, even more preferably 0.5% by mass or more, and further preferably 1% by mass or more, and also, it is preferably 20% by mass or less, more preferably 15% by mass or less, even more preferably 10% by mass or less, and further preferably 8% by mass or less.

<20> The skin cosmetic according to any one of the above <1> to <19>, where, in the gel-like particles used as the component (A), the mass ratio of the total of the

components (b) and (c) to the total of the components (b), (c), (d) and (e), $[(b)+(c)]/[(b)+(c)+(d)+(e)]$, is preferably 0.5 or more, more preferably 0.7 or more, even more preferably 0.75 or more, and further preferably 0.8 or more, and also, it is preferably 2 or less, more preferably 1.5 or less, even more preferably 1.3 or less, and further preferably 1 or less.

[0090]

<21> The skin cosmetic according to any one of the above <1> to <20>, where, in the gel-like particles used as (A), the mass ratio of the component (c) to the total of the components (d) and (e), $[(c)]/[(d)+(e)]$, is preferably 1 or more, more preferably 1.5 or more, even more preferably 2 or more, and further preferably 2.5 or more, and also it is preferably 7 or less, more preferably 4.5 or less, even more preferably 4 or less, and further preferably 3.8 or less.

<22> The skin cosmetic according to any one of the above <1> to <21>, where the mean particle diameter of the gel-like particles used as the component (A) is preferably 10 μm or more, more preferably 30 μm or more, even more preferably 40 μm or more, further preferably 45 μm or more, and particularly preferably 50 μm or more, and also, it is preferably 300 μm or less, more preferably 250 μm or less, even more preferably 200 μm or less, further preferably 180 μm or less, and particularly preferably 150 μm or less.

<23> The skin cosmetic according to any one of the above <1> to <22>, where the content of the gel-like particles used as the component (A) in the skin cosmetic is preferably 4% by mass or more, more preferably 5% by mass or more, and even more preferably 15% by mass or more, and also, it is preferably 40% by mass or less, more preferably 27% by mass or less, and even more preferably 25% by mass or less.

[0091]

<24> The skin cosmetic according to any one of the above <1> to <23>, where the thickener used as the component (B) is preferably an acrylic acid polymer, more preferably a carboxyvinyl polymer, an alkyl-modified carboxyvinyl polymer, polyacrylamide, a (sodium acrylate/sodium acryloyldimethyl taurate) copolymer, a (hydroxyethyl acrylate/sodium acryloyldimethyl taurate) copolymer, an (acrylamide/ammonium acrylate) copolymer, or polyacrylate-13, and even more preferably one or more selected from the group consisting of an alkyl-modified carboxyvinyl polymer and a (sodium acrylate/sodium acryloyldimethyl taurate) copolymer.

<25> The skin cosmetic according to any one of the above <1> to <24>, where the content of the component (B) in the skin cosmetic is preferably 0.15% by mass or more, more preferably 0.2% by mass or more, and even more preferably 0.3% by mass or more, and also, it is preferably 2% by mass or less, more preferably 1.5% by mass or less, and even more preferably 1% by mass or less.

<26> The skin cosmetic according to any one of the above <1> to <25>, where the mass ratio of the component (a) to (B), $((a)/(B))$, is preferably 0.1 or more, more preferably 0.15 or more, even more preferably 0.2 or more, and further preferably 0.25 or more, and also, it is preferably 4 or less, more preferably 2 or less, even more preferably 1.5 or less, and further preferably 1 or less.

[0092]

<27> The skin cosmetic according to any one of the above <1> to <26>, where the content of the water used as the component (C) in the skin cosmetic is preferably from 40% to 90% by mass, more preferably from 50% to 80% by mass, and even more preferably from 65% to 75% by mass.

<28> The skin cosmetic according to any one of the above <1> to <27>, which may further comprise an organic ultraviolet absorber (c') in the skin cosmetic other than in the gel-like particles, and the content of the organic ultraviolet absorber (c') in the skin cosmetic (other than in the gel-like particles) is preferably 3% by mass or more, more preferably 4% by mass or more, and even more preferably 4.5% by mass or more, and also, it is preferably 30% by mass or less, more preferably 25% by mass or less, even more preferably 20% by mass or less, and further preferably 18% by mass or less.

<29> The skin cosmetic according to the above <28>, where, with regard to the organic ultraviolet absorber (c'), diethylamino hydroxybenzoyl benzoic acid hexyl ester

which is an organic ultraviolet absorber having an ultraviolet absorption region in the UVA region (320 to 400 nm) is preferably combined with one or more selected from the group consisting of 2-ethylhexyl p-methoxycinnamate and bis-ethylhexyloxyphenol methoxyphenyl triazine, which are organic ultraviolet absorbers having an ultraviolet absorption region in the UVB region (280 to 320 nm), and the combination is preferably used as the organic ultraviolet absorber (c'), and the mass ratio of the organic ultraviolet absorber having an ultraviolet absorption region in the UVB region (280 to 320 nm) to the organic ultraviolet absorber having an ultraviolet absorption region in the UVA region (320 to 400 nm), (UVB region/UVA region), is preferably from 15/1 to 1/1, more preferably from 10/1 to 1.5/1, and even more preferably from 6/1 to 2/1.

[0093]

<30> The skin cosmetic according to the above <28> or <29>, where the diethylamino hydroxybenzoyl benzoic acid hexyl ester is used as the organic ultraviolet absorber having an ultraviolet absorption region in the UVA region (320 to 400 nm), which is comprised in the organic ultraviolet absorber (c'), and the content of titanium oxide in the skin cosmetic (other than in the gel-like particles) is preferably 0.5% by mass or less, more preferably 0.1% by mass or less, even more preferably 0.01% by mass or less, and further preferably, substantially 0% by mass.

<31> The skin cosmetic according to any one of the above <28> to <30>, where the mass ratio of the total of the components (b) and (c) to the total of the components (b), (c) and (c') in the skin cosmetic, $\frac{[(b)+(c)]}{[(b)+(c)+(c')]}$, is preferably 0.15 or more, more preferably 0.25 or more, even more preferably 0.35 or more, and further preferably 0.4 or more, and also, it is preferably 1.1 or less, more preferably 0.95 or less, even more preferably 0.8 or less, and further preferably 0.65 or less.

[0094]

<32> The skin cosmetic according to any one of the above <1> to <31>, which may further comprise a dextrin fatty acid ester (e') in the skin cosmetic other than in the gel-like particles, and the content of the dextrin fatty acid ester (e') in the skin cosmetic (other than in the gel-like particles) is preferably 0.1% by mass or more, more preferably 0.2% by mass or more, and even more preferably 0.25% by mass or more, and also, it is preferably 3% by mass or less, more preferably 2% by mass or less, even more preferably 1.5% by mass or less, and further preferably 0.8% by mass or less.

<33> The skin cosmetic according to any one of the above <1> to <32>, which may further comprise another oily component (g') in the skin cosmetic other than in the gel-like particles, and the content of the other oily component (g') in the skin cosmetic (other than in the gel-like particles) is preferably 0.2% by mass or more,

more preferably 0.5% by mass or more, and even more preferably 0.8% by mass or more, and also, it is preferably 15% by mass or less, more preferably 10% by mass or less, even more preferably 8% by mass or less, and further preferably 5% by mass or less.

<34> The skin cosmetic according to any one of the above <1> to <33>, which further comprises the organic ultraviolet absorber (c'), the dextrin fatty acid ester (e'), and the other oily component (g') in the skin cosmetic other than in the gel-like particles.

[0095]

<35> A method of using a skin cosmetic, which comprises applying the skin cosmetic according to any one of the above <1> to <34> to the skin, preferably to the scalp, face, body, and hands and feet, and more preferably to the face, body, and hands and feet.

<36> A method of improving the fresh feeling or smoothness of the skin by applying the skin cosmetic according to any one of the above <1> to <34> to the skin.

<37> Use of the skin cosmetic according to any one of the above <1> to <34>, in which the skin cosmetic is applied to the skin to improve the fresh feeling or smoothness of the skin.

[Examples]

[0096]

Examples 1 to 31 and Comparative Examples 1 to 6

Gel-like particles each having the compositions shown in Table 1 to Table 3 were produced, and their crystal structure, mean particle diameter, and preservation stability were evaluated. In addition, by using the obtained gel-like particles, skin cosmetics were produced, and their fresh feeling, smoothness, SPF value, and preservation stability were then evaluated. The results are altogether shown in Table 1 to Table 3.

[0097]

(Production Method)

(1) Production of gel-like particles:

(Gel-like particles of Example 1)

To prepare a water phase component solution, 7.5 g of agar (manufactured by Ina Food Industry Co., Ltd., trade name: CS-16A) used as the component (a) was mixed with 563.3 g of purified water used as the component (f), and then, the obtained mixture was heated to a temperature of 90°C or higher to fully dissolve the agar in the water, so as to prepare a mixed solution I as a water phase component solution.

Subsequently, to prepare an oil phase component solution, 170 g of 2-ethylhexyl p-methoxycinnamate (manufactured by BASF Japan, trade name: Uvinul MC 80) and 50 g of bis-ethylhexyloxyphenol methoxyphenyl triazine (manufactured by BASF Japan, trade name: Tinosorb S), which were used as the component (c), and 10 g of cetyl alcohol (manufactured by Kao Corporation, trade name: KALCOL 6098), 12 g of stearyl alcohol

(manufactured by Kao Corporation, trade name: KALCOL 8098) and 30 g of glyceryl stearate (manufactured by MIYOSHI OIL & FAT CO., LTD., trade name: Montex A), which were used as the component (d), and 7.2 g of dextrin fatty acid ester (manufactured by Chiba Flour Milling Co., Ltd., trade name: Rheoparl KL2) used as the component (e), were mixed with one another and dissolved under heating at 80°C, to obtain a solution. While the obtained solution was stirred, 150 g of titanium oxide (manufactured by TAYCA Corporation, trade name: MT-100TV, mean particle diameter: 15 nm) was added as the component (b) to the solution, so as to prepare a mixed solution II as an oil phase component solution.

The mixed solution I and the mixed solution II were added to a 2,000-mL plastic beaker manufactured by Kartell, and the mixture was then stirred at a rotation number of 8,000 rpm for 1 minute, with a homomixer (manufactured by PRIMIX Corporation, trade name: T. K. ROBOMIX), so as to prepare an oil-in-water dispersion.

The temperature of the oil-in-water dispersion was kept at 80°C, and with a spray nozzle (manufactured by H. IKEUCHI Co., Ltd., EMPTY CONE-SHAPED NOZZLE K-010), the oil-in-water dispersion was sprayed from a height of 3.4 m into a gas phase at 25°C in a tank at a flow rate of 12 kg/hr. Thereafter, 1,000 g of gel-like particles, which were obtained by cooling and solidifying the droplets of the oil-in-water dispersion formed by the spraying, were recovered from the bottom portion of the tank.

[0098]

(Gel-like particles of Examples 2 to 31 and Comparative Examples 1 to 6)

Gel-like particles were produced in the same manner as that of Example 1. In the production of the gel-like particles of Example 20, 2 g of 2-amino-2-methylpropanol (manufactured by The Dow Chemical Company, trade name: AMP-ULTRA PC1000) was further added to the oily component, and it was mixed with the components (c), (d) and (e) under heating.

[0099]

(2) Production of skin cosmetics:

(Skin cosmetic of Example 1)

18 g of alkyl-modified carboxyvinyl polymer (manufactured by The Lubrizol Corporation, trade name: PEMULEN TR-1) used as a thickener of the component (B) and 3,430 g of purified water used as the component (C) were added to a 5,000-mL glass vessel, and they were then mixed with each other at 2,000 rpm for 10 minutes to prepare a thickener dispersion. Meanwhile, 45 g of bis-ethylhexyloxyphenol methoxyphenyl triazine (manufactured by BASF Japan, trade name: Tinosorb S), 17 g of dextrin fatty acid ester (manufactured by Chiba Flour Milling Co., Ltd., trade name: Rheopearl KL2), and 14 g of 2-amino-2-methylpropanol (manufactured by The Dow Chemical Company, trade name: AMP-ULTRA PC1000) were added to 234 g of 2-ethylhexyl p-methoxycinnamate (manufactured by BASF Japan, trade name: Uvinul MC 80), and the obtained mixture was

then blended at a temperature of 80°C, so as to prepare an organic UV protective agent-comprising solution. The above described thickener dispersion was mixed with the above described organic UV protective agent-comprising solution, which had been heated to 80°C, at a temperature of 80°C. Thereafter, 1,000 g of the gel-like particles, which had been obtained as the component (A) in the above (1), were added to the obtained mixture, and the thus obtained mixture was then blended at 12,000 rpm for 10 seconds with a homogenizer, so as to obtain a skin cosmetic.

[0100]

(Skin cosmetics of Examples 2 to 31 and Comparative Examples 1 to 6)

Each skin cosmetic was produced in the same manner as that of Example 1.

[0101]

(Evaluation Method)

(1) Crystal structure (α gel structure):

By employing a "totally automatic multi-purpose X-ray analytical instrument X'Pert PRO MPD" manufactured by PANalytical, 0.4 g of the gel-like particles were subjected to wide-angle X-ray structure diffraction. The presence or absence of an α gel structure was determined based on signals detected around a diffraction angle 2θ of 21.5°.

[0102]

(2) Mean particle diameter of gel-like particles:

By using a transmission electron microscope (TEM), the maximum minor axes of the particle diameters of 300 particles in an image were measured under 100,000-magnification conditions, and the mean value was then calculated. In the present invention, the maximum minor axis means a minor axis having the maximum diameter, among minor axes perpendicular to major axes.

[0103]

(3) Preservation stability of gel-like particles:

50 mL of the cosmetic was placed in a 100-mL glass bottle, was then hermetically sealed, and was then preserved at 50°C for 1 month. Thereafter, the presence or absence of separation of an oil phase from the cosmetic was confirmed by visual observation, and the results were shown based on the following criteria.

AA: No change is observed.

BB: Agglutination of 1 mm or less is confirmed.

CC: Separation of an oil phase of 1 mm or more is observed.

[0104]

(4) Fresh feeling:

Three professional panelists were employed, 0.02 mL of the cosmetic was applied to a circular portion with a diameter of 3 cm on the inner part of their forearm, and it was then extended over 1 minute (25°C, 57RH%). Thereafter, the sense of use (freshness) was evaluated by 0.1, based on the following scores (score 5: fresh; score

3: neutral; score 1: not fresh), and the average score of the three panelists was then obtained.

[0105]

(5) Smoothness (friction freeness):

Three professional panelists were employed, 0.02 mL of the cosmetic was applied to a circular portion with a diameter of 3 cm on the inner part of their forearm, and it was then extended over 1 minute (25°C, 57RH%).

Thereafter, the sense of use (smoothness) was evaluated by 0.1, based on the following scores (score 5: smooth (friction free); score 3: neutral; score 1: not smooth (with friction feeling)), and the average score of the three panelists was then obtained.

[0106]

(6) SPF value (in vitro):

The cosmetic was uniformly applied onto a PMMA plate for 1 minute to a concentration of 2 mg/cm², and was then dried for 15 minutes at a cool dark place. After completion of the drying of the sample, by using an SPF analyzer (SPF 290S plus, manufactured by Optometricus USA, Inc.), the transmittance (%) of the absorption spectrum (wavelength: 350 nm) was measured at 9 points in total on the square PMMA plate, namely, the middle point of the plate, individual vertexes, and the middle points on the sides each obtained by binding the vertexes, and the mean of the transmittance at 9 points was obtained. The results are shown in the form of an SPF value (-) obtained from the transmittance (%).

[0107]

(7) Preservation stability of cosmetics:

40 mL of cosmetic was placed in a 50-mL glass bottle, was then hermetically sealed, and was then preserved at 50°C for 1 month. Thereafter, the presence or absence of separation of an oil phase from the cosmetic was confirmed by visual observation, and the results were shown based on the following criteria.

AA: Separation of an oil phase is not observed.

BB: Separation of an oil phase is slightly observed.

CC: Separation of an oil phase is apparently observed.

[0108]

[Gel-like particles]

[illegible]

[Cosmetic]

	A	Gel-like particles	21%	21%	21%	21%	21%	21%	21%	21%	21%	21%	21%	21%	21%	21%	21%
Water phase	B	Alkyl-modified carboxyvinyl polymer (PEMULEN TR-1, manufactured by The Lubrizol Corporation)	0.38%	0.38%	0.38%	0.38%	0.38%	0.38%	0.38%	0.38%	0.38%	0.38%	0.38%	0.38%	0.38%	0.38%	0.38%
		2-Amino-2-methylpropanol	0.30%	0.30%	0.30%	0.30%	0.30%	0.30%	0.30%	0.30%	0.30%	0.30%	0.30%	0.30%	0.30%	0.30%	0.30%
		Potassium hydroxide															
Oil phase		Purified water	72.09%	72.09%	72.09%	72.09%	72.09%	72.09%	72.09%	72.09%	72.09%	72.09%	72.09%	72.09%	72.09%	72.09%	72.09%
	c'	2-Ethylhexyl p-methoxycinnamate	4.93%	4.93%	4.93%	4.93%	4.93%	4.93%	4.93%	4.93%	4.93%	4.93%	4.93%	4.93%	4.93%	4.93%	4.93%
		bis-Ethylhexyloxyphenol methoxyphenyl triazine	0.95%	0.95%	0.95%	0.95%	0.95%	0.95%	0.95%	0.95%	0.95%	0.95%	0.95%	0.95%	0.95%	0.95%	0.95%
	e'	Dextrin palmitate	0.35%	0.35%	0.35%	0.35%	0.35%	0.35%	0.35%	0.35%	0.35%	0.35%	0.35%	0.35%	0.35%	0.35%	0.35%
		Total	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%
		(a)	0.16%	0.15%	0.63%	1.05%	0.16%	0.16%	0.16%	0.16%	0.16%	0.16%	0.16%	0.16%	0.16%	0.16%	0.16%
		(b)	3.15%	3.15%	3.15%	3.15%	1.05%	4.20%	4.62%	4.62%	3.15%	3.15%	3.15%	3.15%	3.15%	3.15%	3.15%
		(c)	4.62%	4.62%	4.62%	4.62%	4.62%	4.62%	4.62%	4.62%	1.47%	5.25%	6.30%	4.62%	4.62%	4.62%	4.62%
		(d)	1.26%	1.26%	1.26%	1.26%	1.26%	1.26%	1.26%	1.26%	1.26%	1.26%	1.26%	1.26%	1.26%	1.26%	2.10%
		(e)	0.15%	0.15%	0.15%	0.15%	0.15%	0.15%	0.15%	0.15%	0.15%	0.15%	0.15%	0.15%	0.15%	0.15%	0.15%
		(c')	5.88%	5.88%	5.88%	5.88%	5.88%	5.88%	5.88%	5.88%	9.03%	5.25%	4.20%	5.88%	5.88%	5.88%	5.88%
		(e')	0.35%	0.35%	0.35%	0.35%	0.35%	0.35%	0.35%	0.35%	0.35%	0.35%	0.35%	0.35%	0.35%	0.35%	0.35%
		(e)+(e')	0.50%	0.50%	0.50%	0.50%	0.50%	0.50%	0.50%	0.50%	0.50%	0.50%	0.50%	0.50%	0.50%	0.50%	0.50%
		(c)+(c')	10.50%	10.50%	10.50%	10.50%	10.50%	10.50%	10.50%	10.50%	10.50%	10.50%	10.50%	10.50%	10.50%	10.50%	10.50%
		(b)+(c)/(b)+(c)+(c')	0.57	0.57	0.57	0.57	0.49	0.60	0.61	0.61	0.34	0.62	0.69	0.57	0.57	0.57	0.57
		(b)+(c)+(c')	13.65%	13.65%	13.65%	13.65%	11.55%	14.70%	15.12%	15.12%	13.65%	13.65%	13.65%	13.65%	13.65%	13.65%	13.65%
		SPF value/[(b)+(c)+(c')]	4.10	3.97	3.85	3.83	3.46	4.22	4.58	4.58	2.86	4.18	4.24	3.66	4.40	4.40	4.40
		(a)/(B)	0.41	0.39	1.66	2.76	0.41	0.41	0.41	0.41	0.41	0.41	0.41	0.41	0.41	0.41	0.41
		Fresh feeling	4.6	4.3	4.3	3.9	4.8	4	3.8	4	4.8	3.9	3.4	4.6	4.3	4.3	4.3
		Smoothness (friction free)	4.5	4.5	4.6	4.7	4.9	3.9	3.4	3.4	4.3	4.6	4.6	4.1	4.6	4.6	4.6
		SPF value	56	54.2	52.6	52.3	40	62.1	69.2	69.2	39	57.1	57.9	50	60.1	60.1	60.1
		Preservation stability	AA	AA	AA	AA	AA	AA	AA	AA	AA	AA	AA	AA	AA	AA	AA

[0109]

[Gel-like particles]

[illegible]

[0110]

[Table 3]

[Gel-like particles]

Component		Examples										Comparative Examples					
		25	26	27	28	29	30	31	1	2	3	4	5	6			
Water phase	a	Agar (CS-16A, manufactured by Ina Food Industry Co., Ltd.)															
		0.75%	0.75%	0.75%	0.75%	0.75%	0.75%	0.75%	0.07%	0.75%	0.75%	0.75%	0.75%	0.75%			
		0.10%	0.10%	0.10%	0.10%	0.10%	0.10%	0.10%	0.10%	0.10%	0.10%	0.10%	0.10%	0.10%			
	f	58.43%	58.43%	55.43%	55.43%	55.43%	55.43%	55.43%	56.11%	71.15%	78.15%	61.43%	56.15%	55.43%			
	b	15%	15%	15%	15%	15%	15%	15%	15%	15%	15%	15%	15%	15%			
Oil phase		17%	17%	17%	17%	17%	17%	17%	17%	17%	17%	17%	17%	17%			
	c	5%	5%	5%	5%	5%	5%	5%	5%	5%		5%	5%	5%			
				1.8%	1.8%	1.8%	1.8%	1.8%	1.8%	1.8%	1.8%		1.8%	1.8%			
	d			1.2%	1.2%	1.2%	1.2%	1.2%	1.2%	1.2%	1.2%		1.2%	1.2%			
		3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%		3.0%	3.0%			
	e	0.72%	0.72%	0.72%	0.72%	0.72%	0.72%	0.72%	0.72%			0.72%		0.72%			
		100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%			
	Total	0.91	0.91	0.85	0.85	0.85	0.85	0.85	0.85	0.79	0.71	0.98	0.86	0.85			
		[(b)+(c)]/[(b)+(c)+(d)+(e)]															
		(c)/[(d)+(e)]															
Crystal structure		Non-α gel	Non-α gel	α gel	α gel	α gel	α gel	α gel	α gel	α gel	α gel	Non-α gel	α gel	α gel			
Mean particle diameter (μm)		93	93	81	81	81	81	81	-	101	82	58	77	79			
Preservation stability		BB	BB	AA	AA	AA	BB	AA	CC	AA	AA	CC	AA	AA			

		[Cosmetic]															
Water phase	A	Gel-like particles		7%	28%	21%	21%	21%	21%	28%	21%	21%	21%	21%	21%	1%	
	B	Alkyl-modified carboxyvinyl polymer (PEMULEN TR-1, manufactured by The Lubrizol Corporation)		0.38%	0.38%	0.38%	0.38%	0.38%	1.05%	0.38%	0.38%	0.38%	0.38%	0.38%	0.38%	0.38%	
		2-Amino-2-methylpropanol		0.30%	0.30%	0.30%		0.30%	0.30%	0.30%	0.30%	0.30%	0.30%	0.30%	0.30%	0.30%	
		Potassium hydroxide						0.15%									
Oil phase		Purified water		83.01%	66.63%	78.32%	72.44%	72.24%	72.40%	65.96%	72.09%	72.09%	67.44%	72.09%	72.09%	87.78%	
	c'	2-Ethylhexyl p-methoxycinnamate		7.31%	3.74%		4.93%	4.93%	4.93%	3.74%	4.93%	4.93%	8.53%	4.93%	4.93%	8.67%	
		bis-Ethylhexyloxyphenol methoxyphenyl triazine		1.65%	0.60%		0.95%	0.95%	0.95%	0.60%	0.95%	0.95%	2.00%	0.95%	0.95%	1.68%	
		e'	Dextrin palmitate		0.35%	0.35%			0.35%	0.35%	0.35%	0.35%	0.35%	0.35%	0.35%	0.35%	0.49%
			Total		100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%
		(a)			0.05%	0.21%	0.16%	0.16%	0.16%	0.21%	0.01%	0.16%	0.16%	0.16%	0.16%	0.01%	
		(b)			1.05%	4.20%	3.15%	3.15%	3.15%	4.20%	3.15%	3.15%	0.00%	3.15%	3.15%	0.10%	
		(c)			1.54%	6.16%	4.62%	4.62%	4.62%	6.16%	4.62%	4.62%	0.00%	4.62%	4.62%	0.15%	
		(d)			0.21%	0.84%	1.26%	1.26%	1.26%	1.68%	1.26%	1.26%	1.26%	0.00%	1.26%	0.04%	
		(e)			0.05%	0.20%	0.15%	0.15%	0.15%	0.20%	0.15%	0.15%	0.00%	0.15%	0.00%	0.01%	
	(c')			8.96%	4.34%		5.88%	5.88%	5.88%	4.34%	5.88%	5.88%	10.53%	5.88%	5.88%	10.35%	
	(e')			0.35%	0.35%			0.35%	0.35%	0.35%	0.35%	0.35%	0.35%	0.35%	0.35%	0.49%	
	(e)+(e')			0.40%	0.55%	0.15%	0.15%	0.50%	0.50%	0.55%	0.50%	0.35%	0.35%	0.50%	0.35%	0.50%	
	(c)+(c')			10.50%	10.50%	4.62%	10.50%	10.50%	10.50%	10.50%	10.50%	10.50%	10.53%	10.50%	10.50%	10.50%	
	(b)+(c)/(b)+(c)+(c')			0.22	0.70	1.00	0.57	0.57	0.70	0.57	0.57	0.44	0.23	0.57	0.57	0.02	
	(b)+(c)+(c')			11.55%	14.70%	7.77%	13.65%	13.65%	14.70%	13.65%	13.65%	10.50%	13.68%	13.65%	13.65%	10.61%	
	SPF value/[(b)+(c)+(c')]		4.16	4.01	3.09	3.60	4.12	4.05	3.63	4.12	1.63	1.45	2.57	2.52	2.85		
	(a)/(B)			0.14	0.55	0.41	0.41	0.41	0.20	0.04	0.41	0.41	0.41	0.41	0.41	0.01	
	Fresh feeling		4.8	4.4	4.9	4.8	4.7	4.5	3.8	2.5	4.9	4.8	4.7	4.7	4.7	3.2	
	Smoothness (friction free)		3.9	2.7	3.7	4.3	4.5	4.5	4.4	2.7	-	4	1.8	3.1	4.7	4.7	
SPF value		48	59	24	49.1	56.3	29	59.5	49.5	17.1	19.9	35.1	34.4	30.2			
Preservation stability		AA	AA	AA	AA	AA	AA	AA	AA	CC	AA	AA	CC	AA	AA		

[0111]

Examples 32 to 47

Gel-like particles each having the compositions shown in Table 4 and Table 5 were produced in the same manners as those of Examples 1 to 31, and their crystal structure, mean particle diameter, and preservation stability were then evaluated. In addition, by using the obtained gel-like particles, skin cosmetics were produced, and their fresh feeling, smoothness, SPF value, and preservation stability were then evaluated. Moreover, odor stability was also evaluated. The results are shown in Table 4 and Table 5.

[0112]

(Production Method)

(1) Production of skin cosmetic of Example 32:

18 g of alkyl-modified carboxyvinyl polymer (manufactured by The Lubrizol Corporation, trade name: PEMULEN TR-1) used as a thickener of the component (B) and 3,430 g of purified water used as the component (C) were added to a 5,000-mL glass vessel, and they were then mixed with each other at 2,000 rpm for 10 minutes to prepare a thickener dispersion. Meanwhile, 45 g of bis-ethylhexyloxyphenol methoxyphenyl triazine (manufactured by BASF Japan, trade name: Tinosorb S), 17 g of dextrin fatty acid ester (manufactured by Chiba Flour Milling Co., Ltd., trade name: Rheoparl KL2), 14 g of 2-amino-2-methylpropanol (manufactured by The Dow Chemical Company, trade name: AMP-ULTRA PC1000), and 46 g of diethylamino

hydroxybenzoyl benzoic acid hexyl ester (Uvinul Aplus; manufactured by BASF) were added to 234 g of 2-ethylhexyl p-methoxycinnamate (manufactured by BASF Japan, trade name: Uvinul MC 80), and the obtained mixture was then blended at a temperature of 80°C, so as to prepare an organic UV protective agent-comprising solution. The above described thickener dispersion was mixed with the above described organic UV protective agent-comprising solution, which had been heated to 80°C, at a temperature of 80°C. Thereafter, 1,000 g of the gel-like particles, which had been obtained as the component (A) in the above (1), were added to the obtained mixture, and the thus obtained mixture was then blended at 12,000 rpm for 10 seconds with a homogenizer, so as to obtain a skin cosmetic.

[0113]

(2) Production of skin cosmetics of Examples 33 to 39:

Each skin cosmetic was produced in the same manner as that of Example 32.

[0114]

(3) Production of skin cosmetics of Examples 40 to 47:

Skin cosmetics were produced in the same manner as that of Example 1. However, the skin cosmetic of Example 40 was produced in the same manner as that of Example 1, with the exception that 14 g of a potassium hydroxide aqueous solution (manufactured by OCCIDENTAL CHEMICAL ASIA, LIMITED., 48% liquid potassium hydroxide, active component: 48% by mass) was used instead of 14 g of 2-

amino-2-methylpropanol (manufactured by The Dow Chemical Company, trade name: AMP-ULTRA PC1000).

[0115]

(Method for evaluating odor stability)

Each cosmetic was placed in a 100-mL glass bottle, was then hermetically sealed, and was then preserved under a condition at 50°C for 1 month. One month later, the strength of acrylate odor was evaluated on a scale of 1 to 5 by two professional panelists. The strength of acrylate odor was evaluated by 1, based on the following scores (score 5: completely no odor; score 1: strongly smelled), and the average score of the two panelists was then obtained.

[0116]

[Table 4]

[Gel-like particles]

		Component	Examples									
			1	32	33	34	35	36	37	38	39	
Water phase	a	Agar (CS-16A, manufactured by Ina Food Industry Co., Ltd.)	0.75%	0.75%	0.75%	0.75%	0.75%	0.75%	0.75%	0.75%	0.75%	
	f	Purified water	Balance	Balance	Balance	Balance	Balance	Balance	Balance	Balance	Balance	
		Sodium N-stearoyl-N-methyltaurate (NIKKOL SMT, manufactured by Nikko Chemicals Co., Ltd.)	0.10%	0.10%	0.10%	0.10%	0.10%	0.10%	0.10%	0.10%	0.10%	
Oil phase	b	Titanium oxide (treated with alumina stearic acid)	15.00%	15.00%	15.00%	15.00%	15.00%	15.00%	15.00%	15.00%	15.00%	
	c	2-Ethylhexyl p-methoxycinnamate	17.00%	17.00%	17.00%	17.00%	17.00%	17.00%	17.00%	17.00%	17.00%	
		bis-Ethylhexyloxyphenol methoxyphenyl triazine	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%	
		2-Amino-2-methylpropanol										
	d	Cetyl alcohol	1.80%	1.80%	1.80%	1.80%	1.80%	1.80%	1.80%	1.80%	1.80%	
		Stearyl alcohol	1.20%	1.20%	1.20%	1.20%	1.20%	1.20%	1.20%	1.20%	1.20%	
		Behenyl alcohol										
	e	Glyceryl stearate	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%	
		Dextrin palmitate	0.72%	0.72%	0.72%	0.72%	0.72%	0.72%	0.72%	0.72%	0.72%	
		Total	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	
		[(b)+(c)]/[(b)+(c)+(d)+(e)]	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85		
		(c)/[(d)+(e)]		3.27	3.27	3.27	3.27	3.27	3.27	3.27		
		Crystal structure	α gel	α gel	α gel	α gel	α gel	α gel	α gel	α gel		
		Mean particle diameter (μm)	81	78	56	111	93	80	71	123		
		Preservation stability	AA	AA	AA	AA	AA	AA	AA	AA		

[Cosmetic]

Water phase	A	Gel-like particles	21.00%	21.00%	21.00%	21.00%	7.00%	14.00%	28.00%	28.00%	21.00%
		Alkyl-modified carboxyvinyl polymer (PEMULEN TR-1, manufactured by The Lubrizol Corporation)	0.38%	0.38%	0.38%	0.38%	0.38%	0.38%	0.38%	0.38%	0.38%
	B	(Sodium acrylate/sodium acryloyldimethyl taurate) copolymer (active component: 37.5%, manufactured by SIMULGEL EG, SEPPIC)									
		2-Amino-2-methylpropanol	0.30%	0.30%	0.30%	0.30%	0.30%	0.30%	0.30%	0.30%	0.30%
		Potassium hydroxide									
		Purified water	Balance	Balance	Balance	Balance	Balance	Balance	Balance	Balance	Balance
Oil phase	c'	2-Ethylhexyl p-methoxycinnamate	4.93%	4.93%	4.93%	4.93%	4.93%	4.93%	4.93%	4.93%	4.93%
		bis-Ethylhexyloxyphenol methoxyphenyl triazine	0.95%								
	e'	Hexyl diethylaminohydroxybenzoylbenzoate									
		Dextrin palmitate	1.00%	1.00%	1.00%	1.00%	2.00%	2.00%	2.00%	0.50%	2.00%
		Total	0.35%	0.35%	0.35%	0.35%	0.35%	0.35%	0.35%	0.35%	0.35%
			100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%
	(a)		0.16%	0.16%	0.16%	0.16%	0.05%	0.10%	0.21%	0.21%	0.16%
	(b)		3.15%	3.15%	3.15%	3.15%	1.05%	2.10%	4.20%	4.20%	0.63%
	(c)		4.62%	4.62%	4.62%	4.62%	1.54%	3.08%	6.16%	6.16%	4.62%
	(d)		1.26%	1.26%	1.26%	1.26%	0.42%	0.84%	1.68%	1.68%	1.26%
	(e)		0.15%	0.15%	0.15%	0.15%	0.05%	0.10%	0.20%	0.20%	0.15%
	(c')		5.88%	5.93%	5.93%	5.93%	6.93%	6.93%	6.93%	6.93%	6.93%
	(e')		0.35%	0.35%	0.35%	0.35%	0.35%	0.35%	0.35%	0.35%	0.35%
	(e)+(e')		0.57%	0.57%	0.57%	0.57%	0.57%	0.57%	0.57%	0.57%	0.57%
	(c)+(c')		10.50%	10.55%	10.55%	11.55%	8.47%	10.01%	13.09%	13.09%	11.55%
	(b)+(c)/(b)+(c)+(c')		0.57	0.57	0.57	0.53	0.27	0.43	0.60	0.60	0.43
	(b)+(c)+(c')		13.65%	13.70%	13.70%	14.70%	9.52%	12.11%	17.29%	17.29%	12.18%
	SPF value/[(b)+(c)+(c')]		4.10	4.12	4.12	4.10	3.36	4.16	3.88	4.25	3.06
	(a)/(B)		0.41	0.41	0.41	0.41	0.14	0.28	0.55	0.55	0.41
	Fresh feeling		4.6	4.7	4.7	4.5	4.8	4.7	3.8	4	4.7
	Smoothness (friction free)		4.5	4.5	4.5	4.6	4.9	4.8	3.9	3.8	4.8
	SPF value		56	56.5	56.5	60.3	32	50.4	67.1	73.4	37.3
	Preservation stability		AA	AA	AA	AA	AA	AA	AA	AA	AA
	Odor stability		5	5	5	5	5	5	4	5	5

[0117]

[Table 5]

[Gel-like particles]

Component			Examples									
			40	41	42	43	44	45	46	47		
Water phase	a	Agar (CS-16A, manufactured by Ina Food Industry Co., Ltd.)	0.75%	0.75%	0.75%	0.75%	0.75%	0.75%	0.75%	0.75%		
	f	Purified water	Balance	Balance	Balance	Balance	Balance	Balance	Balance	Balance		
		Sodium N-stearoyl-N-methyltaurate (NIKKOL SMT, manufactured by Nikko Chemicals Co., Ltd.)	0.10%	0.10%	0.10%	0.10%	0.10%	0.10%	0.10%	0.10%		
	b	Titanium oxide (treated with alumina stearic acid)	22.00%	15.00%	15.00%	15.00%	15.00%	15.00%	15.00%	15.00%		
	c	2-Ethylhexyl p-methoxycinnamate	17.00%	17.00%	17.00%	17.00%	17.00%	17.00%	17.00%	17.00%		
		bis-Ethylhexyloxyphenol methoxyphenyl triazine	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%		
		2-Amino-2-methylpropanol								0.20%		
Oil phase		Cetyl alcohol	1.80%	1.80%	1.80%	1.80%	3.00%	1.80%		1.80%		
	d	Stearyl alcohol	1.20%	1.20%	1.20%	1.20%				1.20%		
		Behenyl alcohol						1.20%				
		Glyceryl stearate	3.00%	3.00%	3.00%	3.00%		3.00%	3.00%	3.00%		
	e	Dextrin palmitate	0.72%	0.72%	0.72%	0.72%	0.72%	0.72%	0.72%	0.72%		
Total			100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%		
[(b)+(c)]/[(b)+(c)+(d)+(e)]			0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85		
(c)/[(d)+(e)]			3.27	3.27	3.27	3.27	3.27	3.27	3.27	3.27		
Crystal structure			α gel	α gel	α gel	α gel	Non-α gel	α gel	Non-α gel	α gel		
Mean particle diameter (μm)			84	115	59	89	99	104	119	124		
Preservation stability			AA	AA	AA	AA	BB	AA	BB	AA		

[Cosmetic]

	A	Gel-like particles	21.00%	21.00%	21.00%	21.00%	21.00%	21.00%	21.00%	21.00%	21.00%	21.00%
Water phase		Alkyl-modified carboxyvinyl polymer (PEMULEN TR-1, manufactured by The Lubrizol Corporation)	0.38%	0.38%	0.38%	0.38%	0.38%	0.38%	0.38%	0.38%	0.38%	0.38%
	B	(Sodium acrylate/sodium acryloyldimethyl taurate) copolymer (active component: 37.5%, manufactured by SIMULGEL EG, SEPPIC)					1.50%					
		2-Amino-2-methylpropanol	0.30%	0.30%				0.30%	0.30%			0.30%
		Potassium hydroxide			0.15%							
Oil phase		Purified water	Balance	Balance	Balance	Balance	Balance	Balance	Balance	Balance	Balance	Balance
		2-Ethylhexyl p-methoxycinnamate	4.93%	4.93%	4.93%	4.93%	4.93%	4.93%	4.93%	4.93%	4.93%	4.93%
	c'	bis-Ethylhexyloxyphenol methoxyphenyl triazine										
	e'	Hexyl diethylaminohydroxybenzoylbenzoate	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%
		Dextrin palmitate	0.35%	0.35%	0.35%	0.35%	0.35%	0.35%	0.35%	0.35%	0.35%	0.35%
		Total	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%
		(a)	0.16%	0.16%	0.16%	0.16%	0.16%	0.16%	0.16%	0.16%	0.16%	0.16%
		(b)	4.62%	3.15%	3.15%	3.15%	3.15%	3.15%	3.15%	3.15%	3.15%	3.15%
		(c)	4.62%	4.62%	4.62%	4.62%	4.62%	4.62%	4.62%	4.62%	4.62%	4.62%
		(d)	1.26%	1.26%	1.26%	1.26%	1.26%	1.26%	1.26%	1.26%	1.26%	1.26%
		(e)	0.15%	0.15%	0.15%	0.15%	0.15%	0.15%	0.15%	0.15%	0.15%	0.15%
		(c')	6.93%	6.93%	6.93%	6.93%	6.93%	6.93%	6.93%	6.93%	6.93%	6.93%
		(e')	0.35%	0.35%	0.35%	0.35%	0.35%	0.35%	0.35%	0.35%	0.35%	0.35%
		(e)+(e')	0.57%	0.22%	0.57%	0.57%	0.57%	0.57%	0.57%	0.57%	0.57%	0.57%
		(c)+(c')	11.55%	11.55%	11.55%	11.55%	11.55%	11.55%	11.55%	11.55%	11.55%	11.55%
		(b)+(c)/(b)+(c)+(c')	0.57	0.53	0.53	0.53	0.53	0.53	0.53	0.53	0.53	0.53
		(b)+(c)+(c')	16.17%	14.70%	14.70%	14.70%	14.70%	14.70%	14.70%	14.70%	14.70%	14.70%
		SPF value/[(b)+(c)+(c')]	4.17	2.96	3.77	3.83	2.96	3.76	3.08	3.08	4.58	4.58
		(a)/(B)	0.41	0.41	0.41	0.29	0.41	0.41	0.41	0.41	0.41	0.41
		Fresh feeling	3.6	4.6	4.5	4.6	4.8	4.5	4.7	4.7	4.6	4.6
		Smoothness (friction free)	3.3	4	4.6	4.6	3.4	4.5	3.5	3.5	4.6	4.6
		SPF value	67.4	43.5	55.4	56.3	43.5	55.2	45.3	45.3	67.3	67.3
		Preservation stability	AA	AA	AA	AA	AA	AA	AA	AA	AA	AA
		Odor stability	4	5	5	5	5	5	5	5	5	5

[0118]

Comparative Examples 7 and 8

Skin cosmetics each having the compositions shown in Table 6 were produced, and their fresh feeling, smoothness, SPF value, and preservation stability were then evaluated in the same manner as that of Example 1. The results are shown in Table 6.

[0119]

(Method for producing skin cosmetic of Comparative Example 7)

7.6 g of alkyl-modified carboxyvinyl polymer (manufactured by The Lubrizol Corporation, trade name: PEMULEN TR-1) used as a thickener of the component (B), 0.42 g of sodium N-stearoyl-N-methyltaurate (manufactured by Nikko Chemicals Co., Ltd., trade name: NIKKOL SMT), 6 g of 2-amino-2-methylpropanol (manufactured by The Dow Chemical Company, trade name: AMP-ULTRA PC1000), and 1,684 g of ion exchange water were added to a 2,000-mL plastic beaker, and the obtained mixture was then blended at a temperature of 80°C at 2,000 rpm for 10 minutes, so as to prepare a mixed solution I.

Meanwhile, 40 g of bis-ethylhexyloxyphenol methoxyphenyl triazine (manufactured by BASF Japan, trade name: Tinosorb S); 7.56 g of cetyl alcohol (manufactured by Kao Corporation, trade name: KALCOL 6098), 5.04 g of stearyl alcohol (manufactured by Kao Corporation, trade name: KALCOL 8098) and 12.6 g of glyceryl stearate (manufactured by MIYOSHI OIL & FAT CO., LTD., trade name:

Montex A), which were used as amphipathic solid fats of the component (d); and 10 g of dextrin fatty acid ester (manufactured by Chiba Flour Milling Co., Ltd., trade name: Rheoparl KL2) used as the component (e), were mixed with 170 g of 2-ethylhexyl p-methoxycinnamate (manufactured by BASF Japan, trade name: Uvinul MC 80) used the component (C) and dissolved in one another under heating at 80°C, to obtain a solution. While the obtained solution was stirred, 150 g of titanium oxide (manufactured by TAYCA Corporation, trade name: MT-100TV, mean particle diameter: 15 nm) used as an inorganic scattering agent of the component (b) was added to the solution. The mixed solution was stirred at 2,000 rpm for 10 minutes, with a homomixer (manufactured by PRIMIX Corporation, trade name: T. K. ROBOMIX), so as to prepare a mixed solution II.

The mixed solution I and the mixed solution II were added to a 3,000-mL plastic beaker manufactured by Kartell, and the mixture was then stirred at a rotation number of 4,000 rpm for 5 minutes, with a homomixer (manufactured by PRIMIX Corporation, trade name: T. K. ROBOMIX), so as to obtain a skin cosmetic.

[0120]

(Method for producing skin cosmetic of Comparative Example 8)

The skin cosmetic of Comparative Example 8 was produced in the same manner as that of Comparative Example 7, with the exception that 40 g of diethylamino

hydroxybenzoyl benzoic acid hexyl ester (Uvinul Aplus; manufactured by BASF) was used instead of 40 g of bis-ethylhexyloxyphenol methoxyphenyl triazine (manufactured by BASF Japan, trade name: Tinosorb S) in the production method of Comparative Example 7.

[0121]

[Table 6]

[Cosmetic]

		Component (% by mass)	Comparative Example 7	Comparative Example 8
Water phase	a	Agar (CS-16A, manufactured by Ina Food Industry Co., Ltd.)	0.00%	0.00%
		Sodium N-stearoyl-N-methyltaurate)	0.02%	0.02%
	B	Alkyl-modified carboxyvinyl polymer (PEMULEN TR-1, manufactured by The Lubrizol Corporation)	0.38%	0.38%
		2-Amino-2-methylpropanol	0.3%	0.3%
	C	Purified water	83.89%	83.89%
Oil phase	b	Titanium oxide (treated with alumina stearic acid)	3.15%	3.15%
	c	2-Ethylhexyl p-methoxycinnamate	8.5%	8.5%
		bis-Ethylhexyloxyphenol methoxyphenyl triazine	2.0%	
		Hexyl diethylaminohydroxybenzoylbenzoate		2.0%
	d	Cetyl alcohol	0.38%	0.38%
		Stearyl alcohol	0.25%	0.25%
		Glyceryl stearate	0.63%	0.63%
	e	Dextrin palmitate	0.50%	0.50%
Total			100.00%	100.00%
SPF value/(b)+(c)			2.56	3.00
Fresh feeling			2	2
Smoothness (friction free)			4.5	4.5
SPF value			35	35
Preservation stability			CC	CC

[0122]

Examples 48 to 50

(1) Production of gel-like particles (production method involving preparation of slurry)

To prepare a water phase component solution, 7.5 g of agar (manufactured by Ina Food Industry Co., Ltd., trade name: CS-16A) used as the component (a) was mixed

with 644.3 g of purified water used as the component (f), and then, the obtained mixture was heated to a temperature of 90°C or higher to fully dissolve the agar in the water, so as to prepare a mixed solution I as a water phase component solution.

Subsequently, an oil phase component solution was prepared. At that time, 65 g of 2-ethylhexyl p-methoxycinnamate (manufactured by BASF Japan, trade name: Uvinul MC 80) used as the component (c), 50 g of titanium oxide (manufactured by TAYCA Corporation, trade name: MT-100TV, mean particle diameter: 15 nm) used as the component (b), and 10 g of polyhydroxystearic acid (manufactured by The Nisshin Oil Group, Ltd., trade name: SALACOS HS-6C) or dipentaerythrityl tripolyhydroxystearate (manufactured by The Nisshin Oil Group, Ltd., trade name: SALACOS WO-6) had previously been dispersed to prepare a slurry. Thereafter, 100.5 g of 2-ethylhexyl p-methoxycinnamate (manufactured by BASF Japan, trade name: Uvinul MC 80) and 50 g of bis-ethylhexyloxyphenol methoxyphenyl triazine (manufactured by BASF Japan, trade name: Tinosorb S), which were used as the component (c); 18 g of cetyl alcohol (manufactured by Kao Corporation, trade name: KALCOL 6098), 12 g of stearyl alcohol (manufactured by Kao Corporation, trade name: KALCOL 8098) and 30 g of glyceryl stearate (manufactured by MIYOSHI OIL & FAT CO., LTD., trade name: Montex A), which were used as the component (d); and 7.2 g of dextrin fatty acid ester

(manufactured by Chiba Flour Milling Co., Ltd., trade name: Rheopearl KL2) used as the component (e), were mixed with and dissolved in the above prepared slurry under heating at 80°C, to obtain a solution. While the obtained solution was stirred, a mixed solution II was prepared. The mixed solution I and the mixed solution II were added to a 2,000-mL plastic beaker manufactured by Kartell, and the mixture was then stirred at a rotation number of 8,000 rpm for 1 minute, with a homomixer (manufactured by PRIMIX Corporation, trade name: T. K. ROBOMIX), so as to prepare an oil-in-water dispersion. The temperature of the oil-in-water dispersion was kept at 80°C, and with a spray nozzle (manufactured by H. IKEUCHI Co., Ltd., EMPTY CONE-SHAPED NOZZLE K-010), the oil-in-water dispersion was sprayed from a height of 3.4 m into a gas phase at 25°C in a tank at a flow rate of 12 kg/hr. Thereafter, 1,000 g of gel-like particles, which were obtained by cooling and solidifying the droplets of the oil-in-water dispersion formed by the spraying, were recovered from the bottom portion of the tank.

[0123]

(1) Production of skin cosmetics

Each skin cosmetic was produced in the same manner as that of Example 1.

[0124]

The results obtained by evaluating the skin cosmetics in the same manner as that of Example 1 are shown in Table 7.

[0125]

[Table 7]

[Hydrogel particles]

Component		Component name	Example 1	Example 48	Example 49	Example 50
			% by weight	% by weight	% by weight	% by weight
Water phase	a	Agar	0.75%	0.75%	0.75%	0.75%
		NIKKOL SMT	0.10%	0.10%	0.10%	0.10%
	f	Ion exchange water	55.43%	64.43%	58.43%	49.93%
	b	Inorganic scattering agent	15%	0%	0%	0%
Oil phase	c	Organic absorber	17%	10.5%	4.0%	0%
		Particulate titanium oxide (treated with alumina stearic acid)	5%	5%	5%	5%
		bis-Ethylhexyloxyphenol methoxyphenyl triazine				
	★	Particulate titanium oxide (treated with alumina stearic acid)		5.0%	10.0%	15.0%
		2-Ethylhexyl p-methoxycinnamate		6.5%	13.0%	19.5%
		Polyhydroxystearic acid			2.0%	3.0%
		Dipentaerythrityl tripolyhydroxystearate		1.0%		
		Aminomethylpropanol				
		Cetyl alcohol	1.8%	1.8%	1.8%	1.8%
	d	Amphipathic solid fat	1.2%	1.2%	1.2%	1.2%
	Behenyl alcohol					
e	Glyceryl stearate	3.0%	3.0%	3.0%	3.0%	
	Dextrin palmitate	0.72%	0.72%	0.72%	0.72%	
[(b)+(c)]/[(b)+(c)+(d)+(e)]		(Amount of UV protective agent added to oil phase) from viewpoint of ultraviolet light-shielding effect	0.85	0.45	0.22	0.10
(c)/(d)+(e)		(Amount of rheology modifier added to oily component) from viewpoint of improving ultraviolet light-shielding effect	3.27	3.27	3.27	3.27
Crystal structure			α gel	α gel	α gel	α gel
Preservation stability(50°C/1M)			AA	AA	AA	AA
Hydrogel particles(μm)			81	90	90	90

[Cosmetic]		Hydrogel particle dispersion			
		Hydrogel particles			
B	Acrylic acid thickener	Acrylate/alkyl acrylate (C10-30) cross polymer	30%	30%	30%
	AMP		21%	21%	21%
	KOH		0.38%	0.38%	0.38%
C			0.30%	0.30%	0.30%
	Purified water				
			72.09%	72.09%	72.62%
c'	Organic absorber	2-Ethylhexyl p-methoxycinnamate	4.93%	4.93%	4.40%
		bis-Ethylhexyloxyphenol methoxyphenyl triazine	0.95%	0.95%	0.95%
e'	Dextrin fatty acid ester	Dextrin palmitate	0.35%	0.35%	0.35%
		(a)	0.16%	0.16%	0.16%
		(b)	3.15%	0.00%	0.00%
		(c)	4.62%	4.62%	5.15%
		(d)	1.26%	1.26%	1.26%
		(e)	0.15%	0.15%	0.15%
		(c')	5.88%	5.88%	5.35%
		(e')	0.35%	0.35%	0.35%
		(e)+(e')	0.50%	0.50%	0.50%
		(c)+(c')	10.50%	10.50%	10.50%
		(b)+(c)/(b)+(c)+(c')	0.57	0.44	0.49
		(b)+(c)+(c')	13.65%	10.50%	10.50%
		SPF value/(b)+(c)+(c')	4.10	4.00	5.81
		(a)/(B)	0.41	0.41	0.41
		Fresh feeling	4.6	4.5	4.3
		Smoothness (friction free)	4.5	4.7	4.3
		SPF value	56	42	61
		Preservation stability at 50°C at 1 M	AA	AA	AA

[0126]

Examples 51 to 54

Skin cosmetics each having the compositions shown in Table 8 to Table 11 (oil-in-water sunscreens) were produced in the same manner as that of Example 1.

All of the obtained skin cosmetics have a high ultraviolet light-shielding effect, fresh feeling, smooth feeling, a good sense of use, and excellent preservation stability.

[0127]

[Table 8]

Example 51 (Oil-in-water sunscreen)

Component	(% by mass)
Gel-like particles of Example 1	7
Alkyl-modified carboxyvinyl polymer (PEMULEN TR-1, manufactured by The Lubrizol Corporation)	0.2
2-Ethylhexyl p-methoxycinnamate (Uvinul MC 80, manufactured by BASF Japan)	10
2-(4-(Diethylamino)-2-hydroxybenzoyl)benzoic acid hexyl ester (Uvinul Aplus, manufactured by BASF Japan)	2
2,4-bis-[[4-(2-Ethylhexyloxy)-2-hydroxy]-phenyl]-6-(4-methoxyphenyl)-1,3,5-triazine (Tinosorb S, manufactured by BASF Japan)	1
2,4,6-tris[4-(2-Ethylhexyloxycarbonyl)anilino]-1,3,5-triazine (Uvinul T-150, manufactured by BASF Japan)	1
48% Potassium hydroxide aqueous solution	0.3
Methylpolysiloxane (Silicone KF-96A-10CS, manufactured by Shin-Etsu Chemical Co., Ltd., viscosity: 10 mPa·s)	2
Alkyl (C12-C15) benzoate (FINSOLV TN, manufactured by Innospec Active Chemicals LLC)	3
Neopentyl glycol di2-ethylhexanoate (COSMOL 525, manufactured by The Nisshin OilliO Group, Ltd.)	3
Glycerin	2
Polyoxyethylene methyl glucoside (Macbiobride MG-10E, manufactured by NOF Corporation)	0.1
1,3-Butylene glycol	3
1,3-Propanediol	0.5
Phenoxyethanol	0.3
Edetate disodium	0.1
Sodium dehydroacetate	0.01
Sunflower oil (SUNFLOWER OIL, manufactured by Yokozeki Oil & Fat Industries, Co., Ltd.)	0.1
Yuzu (<i>Citrus junos</i>) extract (Yuzu Extract, manufactured by Maruzen Pharmaceuticals Co., Ltd.)	0.1
Water-soluble ginger extract (K) (Ginger Extract (K), manufactured by Koei Kogyo Co., Ltd.)	0.1
Hamamelis extract (Hamamelis Liquid, manufactured by Ichimaru Pharcos Co., Ltd.)	0.1
Grapefruit extract-BG mixed solution (Grapefruit Extract, manufactured by Esperis S. p. A.)	0.1
Dolabrata extract (Dolabrata Liquid K, manufactured by Ichimaru Pharcos Co., Ltd.)	0.1
Orange extract-water mixed solution (Pharcolex Orange, manufactured by Ichimaru Pharcos Co., Ltd.)	0.1
Chamomilla ET (Chamomile KSQ, manufactured by Maruzen Pharmaceuticals Co., Ltd.)	0.1
Eucalyptus extract (Eucalyptus Extract, manufactured by Koei Kogyo Co., Ltd.)	0.1
Platycodon root extract (Platycodon Root Extract, manufactured by Koei Kogyo Co., Ltd.)	0.1
Sodium hyaluronate-ethanol aqueous solution (Hyaluronate Liquid HA-LQ1E, manufactured by Eikodo & Co., Ltd.)	0.1
Lemon extract (Lemon Extract Liquid-K, manufactured by Ichimaru Pharcos Co., Ltd.)	0.1
Rosemary extract (Pharcolex Rosemary E, manufactured by Ichimaru Pharcos Co., Ltd.)	0.1
Flavor	q.s.
Purified water	Balance
Total	100

[0128]

[Table 9]

Example 52 (Oil-in-water sunscreen)

Component	(% by mass)
Gel-like particles of Example 16	21
Alkyl-modified carboxyvinyl polymer (PEMULEN TR-1, manufactured by The Lubrizol Corporation)	0.3
2-Ethylhexyl p-methoxycinnamate (Uvinul MC 80, manufactured by BASF Japan)	10
2-(4-(Diethylamino)-2-hydroxybenzoyl)benzoic acid hexyl ester (Uvinul Aplus, manufactured by BASF Japan)	1
2,4-bis-[4-(2-Ethylhexyloxy)-2-hydroxy]-phenyl]-6-(4-methoxyphenyl)-1,3,5-triazine (Tinosorb S, manufactured by BASF Japan)	2
2,4,6-tris[4-(2-Ethylhexyloxycarbonyl)anilino]-1,3,5-triazine (Uvinul T-150, manufactured by BASF Japan)	0.5
Dextrin palmitate (Rheoparl KL2, manufactured by Chiba Flour Milling Co., Ltd.)	0.5
Ethanol	5
Alkyl (C12-C15) benzoate (FINSOLV TN, manufactured by Innospec Active Chemicals LLC)	3
Glycerin	1
Polyethylene glycol 20000 (PEG#20000, manufactured by NOF Corporation)	0.3
Polyoxyethylene methyl glucoside (Macbiobride MG-10E, manufactured by NOF Corporation)	0.1
1,3-Butylene glycol	3
Xylit (Xylit, manufactured by Mitsubishi Shoji Foodtech Co., Ltd.)	0.5
1,3-Propanediol	0.5
Phenoxyethanol (Hisorb EPH, manufactured by Toho Chemical Industry Co., Ltd.)	0.3
Edetate disodium (Clewat, manufactured by Nagase ChemteX Corporation)	0.05
Sodium dehydroacetate (New Side S-01, manufactured by The Nippon Synthetic Chemical Industry Co., Ltd.)	0.01
2-Amino-2-methyl-1-propanol (AMP-ULTRA PC1000, manufactured by The Dow Chemical Company)	0.3
Sunflower oil (SUNFLOWER OIL, manufactured by Yokozeki Oil & Fat Industries, Co., Ltd.)	0.1
Yuzu (<i>Citrus junos</i>) extract (Yuzu Extract, manufactured by Maruzen Pharmaceuticals Co., Ltd.)	0.1
Water-soluble ginger extract (K) (Ginger Extract (K), manufactured by Koei Kogyo Co., Ltd.)	0.1
Hamamelis extract (Hamamelis Liquid, manufactured by Ichimaru Pharcos Co., Ltd.)	0.1
Grapefruit extract-BG mixed solution (Grapefruit Extract, manufactured by Esperis S. p. A.)	0.1
Dolabrata extract (Dolabrata Liquid K, manufactured by Ichimaru Pharcos Co., Ltd.)	0.1
Orange extract-water mixed solution (Pharcolex Orange, manufactured by Ichimaru Pharcos Co., Ltd.)	0.1
Chamomile flower extract (Chamomile KSQ, manufactured by Maruzen Pharmaceuticals Co., Ltd.)	0.1
Eucalyptus extract (Eucalyptus Extract, manufactured by Koei Kogyo Co., Ltd.)	0.1
Platycodon root extract (Platycodon Root Extract, manufactured by Koei Kogyo Co., Ltd.)	0.1
Sodium hyaluronate-ethanol aqueous solution (Hyaluronate Liquid HA-LQ1E, manufactured by Eikodo & Co., Ltd.)	0.1
Lemon extract (Lemon Extract Liquid-K, manufactured by Ichimaru Pharcos Co., Ltd.)	0.1
Rosemary extract (Pharcolex Rosemary E, manufactured by Ichimaru Pharcos Co., Ltd.)	0.1
Flavor	q.s.
Purified water	Balance
Total	100

[0129]

[Table 10]

Example 53 (Oil-in-water sunscreen)

Component	(% by mass)
Gel-like particles of Example 16	21
(Sodium acrylate/sodium acryloyldimethyl taurate) copolymer (SIMULGEL EG (active component: 37.5%), manufactured by SEPPIC)	0.7
2-Ethylhexyl p-methoxycinnamate (Uvinul MC 80, manufactured by BASF Japan)	5
2-(4-(Diethylamino)-2-hydroxybenzoyl)benzoic acid hexyl ester (Uvinul Aplus, manufactured by BASF Japan)	1
2,4-bis-[(4-(2-Ethylhexyloxy)-2-hydroxy)-phenyl]-6-(4-methoxyphenyl)-1,3,5-triazine (Tinosorb S, manufactured by BASF Japan)	1
2,4,6-tris[4-(2-Ethylhexyloxycarbonyl)anilino]-1,3,5-triazine (Uvinul T-150, manufactured by BASF Japan)	0.5
Dextrin palmitate (Rheoparl KL2, manufactured by Chiba Flour Milling Co., Ltd.)	0.2
Particulate zinc oxide (MICRO ZINC OXIDE MZ-504R3M, manufactured by TAYCA Corporation)	8
Alkyl (C12-C15) benzoate (FINSOLV TN, manufactured by Innospec Active Chemicals LLC)	1.5
Polyethylene glycol 20000 (PEG#20000, manufactured by NOF Corporation)	0.1
Methylpolysiloxane (Silicone KF-96A-10CS, manufactured by Shin-Etsu Chemical Co., Ltd., viscosity: 10 mPa·s)	1
N-(Hexadecyloxyhydroxypropyl)-N-hydroxyethylhexadecanamide (Sphingolipid E, manufactured by Kao Corporation)	0.3
Glycerin fatty acid ester (Montex A, manufactured by MIYOSHI OIL & FAT CO., LTD.)	0.8
Cetanol (KALCOL 6098, manufactured by Kao Corporation)	1.2
Sorbitan distearate (SunSoft No. 63C-C, manufactured by Taiyo Kagaku Co., Ltd.)	0.3
N-Stearoyl-L-glutamic acid (AMISOFT HA-P, manufactured by AJINOMOTO CO., INC.)	0.5
1,3-Propanediol	3
Glycerin	10
L-arginine	0.3
Methyl paraoxybenzoate	0.2
Xylit (Xylit, manufactured by Mitsubishi Shoji Foodtech Co., Ltd.)	0.5
Flavor	q.s.
Purified water	Balance
Total	100

[0130]

[Table 11]

Example 54 (Oil-in-water sunscreen)

Component	(% by mass)
Gel-like particles of Example 15	21
(Sodium acrylate/sodium acryloyldimethyl taurate) copolymer (SIMULGEL EG (active component: 37.5%), manufactured by SEPPIC)	0.7
2-Ethylhexyl p-methoxycinnamate (Uvinul MC 80, manufactured by BASF Japan)	5
2-(4-(Diethylamino)-2-hydroxybenzoyl)benzoic acid hexyl ester (Uvinul Aplus, manufactured by BASF Japan)	1
2,4-bis-[4-(2-Ethylhexyloxy)-2-hydroxy]-phenyl]-6-(4-methoxyphenyl)-1,3,5-triazine (Tinosorb S, manufactured by BASF Japan)	1
2,4,6-tris[4-(2-Ethylhexyloxy)carbonyl]anilino]-1,3,5-triazine (Uvinul T-150, manufactured by BASF Japan)	0.5
Dextrin palmitate (Rheoppearl KL2, manufactured by Chiba Flour Milling Co., Ltd.)	0.2
Alkyl (C12-C15) benzoate (FINSOLV TN, manufactured by Innospec Active Chemicals LLC)	1.5
Neopentyl glycol dicaprate (Estemol N-01, manufactured by The Nisshin OilliO Group, Ltd.)	0.5
Methylcyclopolysiloxane (Silicone TSF405A, manufactured by Momentive Performance Materials Inc.)	2
Methylpolysiloxane (Silicone KF-96A-2CS, manufactured by Shin-Etsu Chemical Co., Ltd., viscosity: 2 mPa·s)	1
Stearyl alcohol (KALCOL 8098, Kao Corporation)	0.3
Polyoxyethylene sorbitan monostearate (Leodole TW-S120V, manufactured by Kao Corporation)	1
Sorbitan monostearate (Leodole SP-S10V, manufactured by Kao Corporation)	0.7
Phenoxyethanol (Hisorb EPH, manufactured by Toho Chemical Industry Co., Ltd.)	0.3
Ethanol	8
Grapefruit extract-BG mixed solution (Grapefruit Extract, manufactured by Esperis S. p. A.)	0.1
Orange extract-water mixed solution (Pharcolex Orange, manufactured by Ichimaru Pharcos Co., Ltd.)	0.1
Sodium hyaluronate-ethanol aqueous solution (Hyaluronate Liquid HA-LQ1E, manufactured by Eikodo & Co., Ltd.)	0.1
Lemon extract (Lemon Extract Liquid-K, manufactured by Ichimaru Pharcos Co., Ltd.)	0.1
Royal jelly extract (Royal Jelly Extract, manufactured by Ichimaru Pharcos Co., Ltd.)	0.1
Flavor	q.s.
Purified water	Balance
Total	100

Claims

[Claim 1]

A skin cosmetic comprising the following components

(A), (B) and (C):

(A) from 3% to 50% by mass of gel-like particles,

(B) from 0.05% to 3% by mass of a thickener, and

(C) from 30% to 95% by mass of water, wherein

the component (A) is gel-like particles comprising the following (a) to (f):

(a) from 0.1% to 10% by mass of at least one gelling agent selected from the group consisting of agar, carrageenan and gelatin,

(b) from 1% to 30% by mass of an inorganic ultraviolet scattering agent,

(c) from 1% to 40% by mass of an organic ultraviolet absorber,

(d) from 0.1% to 24% by mass of an amphipathic solid fat,

(e) from 0.05% to 5% by mass of a dextrin fatty acid ester, and

(f) from 30% to 80% by mass of water.

[Claim 2]

The skin cosmetic according to claim 1, wherein the component (d) is one or more selected from the group consisting of an alcohol having 14 to 22 carbon atoms, a monofatty acid glycerin ester having 14 to 22 carbon atoms, a monoalkyl glyceryl ether having 14 to 22 carbon

atoms, and a sorbitan monofatty acid ester having 14 to 22 carbon atoms.

[Claim 3]

The skin cosmetic according to claim 1 or 2, wherein a mass ratio of the component (a) to (B), $((a)/(B))$, is from 0.1 to 4.

[Claim 4]

The skin cosmetic according to any one of claims 1 to 3, further comprising an organic ultraviolet absorber (c') in the skin cosmetic but other than in the gel-like particles.

[Claim 5]

The skin cosmetic according to claim 4, wherein the ratio of a total mass of the components (b) and (c) to a total mass of the components (b), (c) and (c'), $[(b)+(c)]/[(b)+(c)+(c')]$, is from 0.15 to 1.1.

[Claim 6]

The skin cosmetic according to any one of claims 1 to 5, wherein the inorganic ultraviolet scattering agent comprised as the component (b) in the component (A) is a metal oxide selected from the group consisting of titanium oxide, zinc oxide and cerium oxide.

[Claim 7]

The skin cosmetic according to any one of claims 1 to 6, wherein the thickener (B) is one or more acrylic acid polymers selected from the group consisting of a carboxyvinyl polymer, an alkyl-modified carboxyvinyl polymer, polyacrylamide, a (sodium acrylate/sodium

acryloyldimethyl taurate) copolymer, a (hydroxyethyl acrylate/sodium acryloyldimethyl taurate) copolymer, an (acrylamide/ammonium acrylate) copolymer, and polyacrylate-13.

[Claim 8]

The skin cosmetic according to any one of claims 1 to 7, wherein, in the gel-like particles used as the component (A), a mass ratio of a total of the components (b) and (c) to a total of the components (b), (c), (d) and (e), $[(b)+(c)]/[(b)+(c)+(d)+(e)]$, is 0.5 or more and 2 or less.

[Claim 9]

The skin cosmetic according to any one of claims 1 to 8, wherein, in the gel-like particles used as the component (A), a mass ratio of the component (c) to a total of the components (d) and (e), $[(c)/[(d)+(e)]]$, is 1 or more and 7 or less.

[Claim 10]

The skin cosmetic according to any one of claims 4 to 9, wherein the organic ultraviolet absorber (c') is a combination of diethylamino hydroxybenzoyl benzoic acid hexyl ester which is an organic ultraviolet absorber having an ultraviolet absorption region in the UVA region (320 to 400 nm), with one or more selected from the group consisting of 2-ethylhexyl p-methoxycinnamate and bis-ethylhexyloxyphenol methoxyphenyl triazine which are organic ultraviolet absorbers having an ultraviolet absorption region in the UVB region (280 to 320 nm).

[Claim 11]

The skin cosmetic according to any one of claims 1 to 10, wherein, in the gel-like particles used as the component (A), when the component (b) comprises titanium oxide, the content of diethylamino hydroxybenzoyl benzoic acid hexyl ester in the organic ultraviolet absorber used as the component (c) is 0.5% by mass or less.

[Claim 12]

A method of using a skin cosmetic, comprising applying the skin cosmetic according to any one of claims 1 to 11 to the skin.

[Claim 13]

A method of improving fresh feeling or smoothness of the skin by applying the skin cosmetic according to any one of claims 1 to 11 to the skin.