

SHAMPOO COMPOSITION CONTAINING A
WATER-SOLUBLE POLYMER AND AN ANIONIC
SURFACTANT AND/OR AN AMPHOLYTIC SURFACTANT

FIELD OF THE INVENTION

This invention relates to a shampoo composition. More particularly, it relates to a shampoo composition which imparts a smooth and creamy feel to a foam during shampooing without deteriorating detergency and gives no stickiness but rather a moist and soft touch to the hair during rinsing and after drying, thus exerting excellent conditioning effects.

BACKGROUND OF THE INVENTION

In recent years, not only the detergency but also the conditioning effects (for example, smooth combing with fingers during rinsing, an excellent touch of the shampooed hair) are regarded as important factors in evaluating the performance of a shampoo. Therefore, water-soluble polymers including cationic polymers such as cationized cellulose and ampholytic polymers, have been widely used as conditioning agents.

Such a water-soluble polymer forms a complex, together with a surfactant, which deposits on the hair during rinsing to exert excellent conditioning effects. However the complex remaining on the hair causes some problems such as it imparts an unpleasant stickiness as the hair is dried; or it solidifies and makes the hair stiff after sufficient drying. Thus, hair with an ideal touch cannot be obtained.

JP-A-62-132811 and JP-A-64-6237 each disclose a fatty acid lactic ester having a branched chain which shows

conditioning effects (the term "JP-A" as used herein means an "unexamined published Japanese patent application"). This compound improves the texture of foam and imparts a moist and smooth feel to shampooed hair. When this compound is used alone in a shampoo as a conditioning agent, however, the effects achieved are unsatisfactory, because the hair becomes sticky during rinsing and after drying, though the dried hair has a moist feel.

Accordingly, it has been required to develop a shampoo composition which gives a foam of an improved texture, imparts no stickiness but a moist and soft touch to the hair after drying and permits smooth combing with the fingers.

SUMMARY OF THE INVENTION

In light of the above circumstances, the present inventors have conducted extensive studies. As a result, they found that a shampoo composition, which gives a foam of an improved texture and imparts no stickiness but rather a moist and soft touch to the hair during rinsing and after drying, can be obtained by using a specific water-soluble polymer and an anionic surfactant and/or an ampholytic surfactant together with a specific anionic surfactant, thus completing the present invention.

Accordingly, the present invention provides a shampoo composition comprising the following Components (A), (B) and (C):

(A) a water-soluble polymer selected from among cationic polymers and ampholytic polymers;

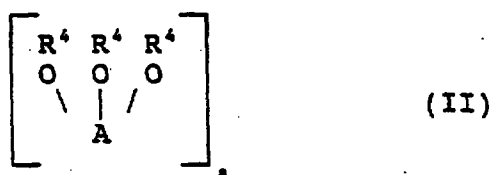
(B) an anionic surfactant having a branched acyl group, a branched alkyl group or a branched alkenyl group, which is dispersible in water (as defined herein) and has a Krafft point of 10°C or below; and

(C) a surfactant selected from among anionic surfactants other than those specified in (B) and ampholytic surfactants

DETAILED DESCRIPTION OF THE INVENTION

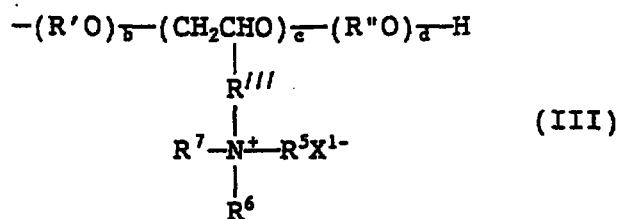
Examples of the cationic polymers used in the present invention as Component (A) include cationized cellulose derivatives, cationic starch, cationized guar gum derivatives, diallyl quaternary ammonium salt polymers, diallyl quaternary ammonium salt/acrylamide copolymers and quaternarized polyvinylpyrrolidone derivatives.

As cationized cellulose derivatives, those represented by general formula (II) are preferable:



wherein A represents a residue of an anhydrous glucose unit; n is an integer of from 50 to 20,000; and each R⁴ represents a group represented by the

following general formula (III):



wherein R' and R'' each represent an alkylene group containing 2 or 3 carbon atoms;

b is an integer of from 0 to 10;

c is an integer of from 0 to 3;

d is an integer of from 0 to 10;

R''' represents an alkylene or hydroxyalkylene group each containing from 1 to 3 carbon atoms;

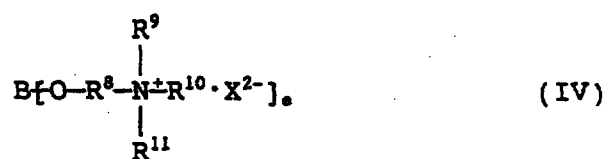
R⁵, R⁶ and R⁷ may be the same or different and each represents an alkyl group containing from 1 to 24 carbon atoms, an aryl group containing from 6 to 10 carbon atoms or an aralkyl group containing from 7 to 10 carbon atoms or R⁵, R⁶ and R⁷ may form a heterocyclic group together with the adjacent nitrogen atom; and

X¹ represents an anion (for example, an ion of chlorine, bromine, iodine, sulfuric acid, sulfonic acid, methylsulfuric acid, phosphoric acid or nitric acid).

The degree of substitution of the cation in the cationized cellulose is from 0.01 to 1. Namely, the average

of c per anhydrous glucose unit is from 0.01 to 1, preferably from 0.02 to 0.5. The average of b + d is from 1 to 3. A degree of substitution of the cation smaller than 0.01 is insufficient. Although the degree of substitution of the cation may exceed 1, it is preferably not larger than 1, in view of the reaction yield. A preferable example of the cationized cellulose derivative of general formula (II) is one wherein R⁴, R⁵ and R⁶ are all CH₃ groups or two of these groups are short chain alkyl groups such as a CH₃ group and a C₂H₅ group and the remaining one is a long chain alkyl group containing from 10 to 20 carbon atoms. The molecular weight of the cationized cellulose derivative used herein ranges from approximately 100,000 to 8,000,000 (measured in GPC method).

As the cationic starch, those represented by the following general formula (IV) are preferable:



wherein B represents a starch residue;

R⁸ represents an alkylene or a hydroxyalkylene group;

R⁹, R¹⁰ and R¹¹ may be either the same or different and each represents an alkyl group containing from 1 to 10 carbon atoms, an aryl group containing from 6 to 10 carbon atoms or an aralkyl group containing from 7

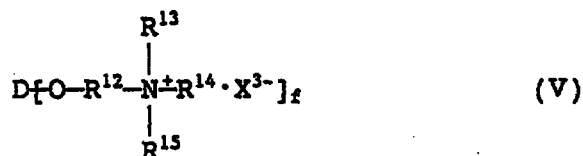
to 10 carbon atoms or R^9 , R^{10} and R^{11} may form a heterocyclic group together with the adjacent nitrogen atom;

X^2 represents an anion (for example, an ion of chlorine, bromine, iodine, sulfuric acid, sulfonic acid, methylsulfuric acid, phosphoric acid or nitric acid); and

e is a positive integer.

The degree of substitution of the cation in the cationic starch is from 0.01 to 1. Namely, those wherein 0.01 to 1, in particular 0.02 to 0.5, cation group is introduced per anhydrous glucose unit are preferable. A degree of substitution of the cation smaller than 0.01 is insufficient. Although the degree of substitution of the cation may exceed 1, it is preferably not larger than 1 by in view of the reaction yield.

As the cationized guar gum derivative, those represented by the following general formula (V) are preferable:



wherein D represents a guar gum residue;

R^{12} represents an alkylene or a hydroxyalkylene group;

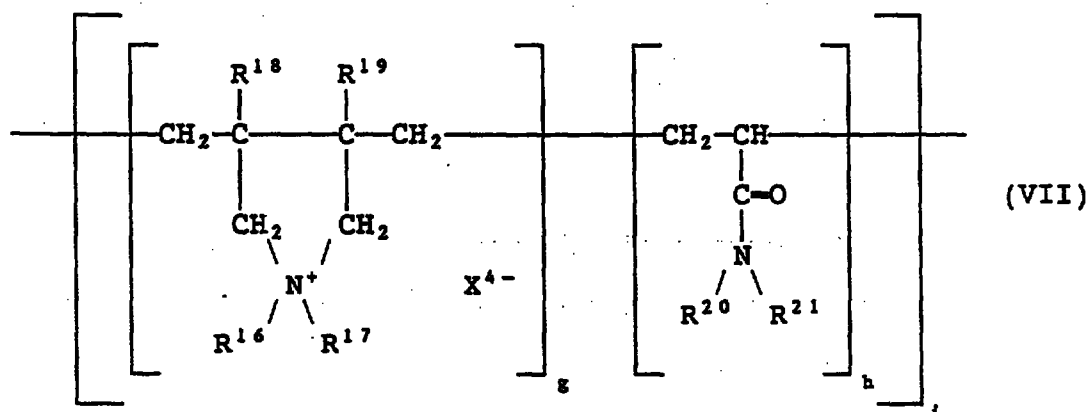
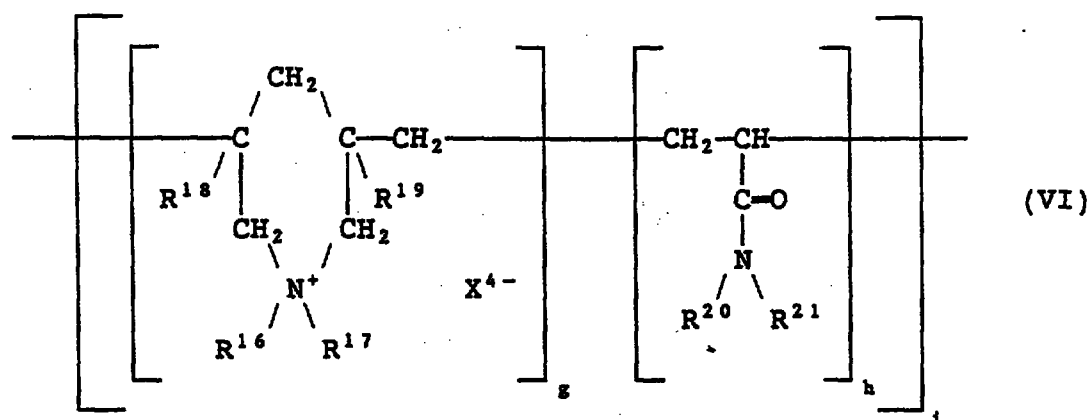
R^{13} , R^{14} and R^{15} may be either the same or different and each represents an alkyl group containing from 1 to 10 carbon atoms, an aryl group containing from 6 to 10 carbon atoms or an aralkyl group containing from 7 to 10 carbon atoms or R^{13} , R^{14} and R^{15} may form a heterocyclic group together with the adjacent nitrogen atom;

X^3 represents an anion (for example, an ion of chlorine, bromine, iodine, sulfuric acid, sulfonic acid, methylsulfuric acid, phosphoric acid or nitric acid); and

f is a positive integer.

The degree of substitution of the cation in the cationized guar gum derivative is from 0.01 to 1. Namely, those wherein 0.01 to 1, in particular 0.02 to 0.5, cation group is introduced per sugar unit are preferable. Cationic polymers of this type are described, for example, in JP-B-58-35640, JP-B-60-46158 and JP-A-58-53996 (the term "JP-B" as used herein means an "examined Japanese patent publication") and marketed, for example, from Cellanese Stein-Hohl Co. under the trade name, JAGUAR.

As the diallyl quaternary ammonium salt polymer or diallyl quaternary ammonium salt/acrylamide copolymer, those represented by the following general formula (VI) or (VII) are preferable:



wherein R^{16} and R^{17} may be the same or different and each represents a hydrogen atom, an alkyl group having 1 to 18 carbon atoms, an aryl group, a hydroxyalkyl group, an amidoalkyl group, a cyanoalkyl group, an alkoxyalkyl group or a carboalkoxyalkyl group;

R^{18} , R^{19} , R^{20} and R^{21} may be either the same or different and each represents a hydrogen atom, a

a hydroxyalkyl group, an amidoalkyl group, a cyanoalkyl group, an alkoxyalkyl group or a carboalkoxyalkyl group, each containing from 1 to 4 carbon atoms;

Y represents an oxygen atom or an NH group in an amide bond;

X^s represents an anion (for example, an ion of chlorine, bromine, iodine, sulfuric acid, sulfonic acid, an alkylsulfuric acid containing from 1 to 4 carbon atoms, phosphoric acid or nitric acid);

l is an integer of from 1 to 10; and

j + k is an integer of from 20 to 8,000.

The molecular weight of the quaternarized polyvinylpyrrolidone derivative may range from approximately 10,000 to 2,000,000, preferably from 50,000 to 1,500,000. The content of the cationic nitrogen originating from the cationic polymer in the above-mentioned vinyl polymer may range from 0.004 to 0.2 %, preferably from 0.01 to 0.15 %, based on the vinyl polymer. When the content is less than 0.004 %, sufficient effects cannot be achieved. When it exceeds 0.2 %, on the other hand, the vinyl polymer might be colored and an economic disadvantage might be caused thereby, though the obtained shampoo composition shows good performance.

Among these cationic polymers, the cationized cellulose, diallylammonium salt polymers and diallylammonium salt/acrylamide copolymers are particularly preferable.

Examples of the ampholytic polymer include copolymers comprising a (meth)acrylate and a betaine ampholytic compound of a (meth)acrylate, methacrylate polymers and acrylate polymers. More particularly, ampholytic compound as disclosed, for example, in JP-A-55-104209, which can be obtained by copolymerizing monomers selected from among the following groups (i) to (iii):

(i) dimethylaminoethyl methacrylate, diethylaminoethyl methacrylate, dimethylaminoethyl acrylate, N,N-dimethylethyl methacrylamide, 4-vinylpyridine etc.;

(ii) stearyl (meth)acrylate, lauryl (meth)acrylate, butyl (meth)acrylate, cyclohexyl (meth)acrylate, allyl (meth)acrylate, ethyl (meth)acrylate, 2-ethylhexyl acrylate etc.; and

(iii) acrylonitrile, diacetone, acrylamide, styrene, chlorostyrene, vinyl toluene, vinyl acetate, hydroxyalkyl (meth)acrylate, polyethylene glycol or polypropylene glycol (meth)acrylate, N-vinylpyrrolidone etc.;

and then treating the copolymer with halogenated acetic acid, may be used.

Among these ampholytic polymers, methacrylate polymers are preferable.

Each of these cationic polymers and ampholytic polymers may be used alone as Component (A). Alternately,

two or more polymers selected from among them may be used in combination thereof. The content of Component (A) may preferably range from 0.05 to 2 % by weight, more preferably from 0.1 to 1.0 % by weight, based on the total weight of the composition.

As the anionic surfactant of Component (B), those which have a branched acyl group, a branched alkyl group or a branched alkenyl group, which are dispersible in water and which have a Krafft point of 10°C or below, preferably 0°C or below, may be used. The expression "dispersible in water" used herein means that when 1 % by weight of Component (B) is added to ion-exchanged water at 25°C, it is not dissolved and remains opaque to the naked eye. When an anionic surfactant, which is soluble in water at 25°C or has a Krafft point exceeding 10°C, is used as Component (B), the obtained shampoo composition cannot impart any moist or soft feel to the hair after drying.

The anionic surfactant used as Component (B) may be selected from among carboxylate type, phosphate surfactants, sulfate surfactants and sulfonate surfactants. Examples of the counter ion therefor include a hydrogen atom, alkali metal ions, alkaline earth metal ions, an ammonium ion, alkanolamine ions having 1 to 3 alkanol groups containing from 2 or 3 carbon atoms, lower alkylammonium ions containing from 1 to 5 carbon atoms and ions of a basic amino acid. Examples of the alkali metals include sodium and potassium

while those of the alkaline earth metals include calcium and magnesium. Examples of the alkanolamines include monoethanolamine, diethanolamine and triethanolamine, while examples of the lower alkylammoniums include trimethylammonium and triethylammonium. Further, examples of the basic amino acids include arginine and lysine.

Examples of the carboxylate surfactants include branched fatty acids; fatty acid lactic esters and fatty acid glycolic esters each obtained from branched fatty acids; acylated amino acids; and alkyl ether carboxylates obtained from branched higher alcohols. Examples of the acylated amino acids include acylated sarcosine, acylated glutamic acid, acylated methylalanine and acylated alanine.

Examples of the phosphate surfactants include monoalkyl phosphates, monoalkyl ether phosphates, dialkyl phosphates and dialkyl ether phosphates, each obtained from branched higher alcohols or alkylene oxide adducts thereof.

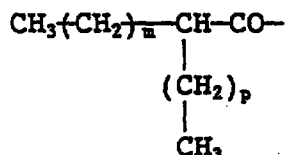
Examples of the sulfate surfactants include sulfuric esters obtained from branched higher alcohols or alkylene oxide adducts thereof, sulfuric esters of alkanolamides obtained from branched fatty acids or alkylene oxide adducts thereof; and monoglyceride sulfuric esters obtained from branched fatty acids.

Examples of the sulfonate surfactants include dialkyl sulfosuccinic esters and monoalkyl sulfosuccinic esters each obtained from branched higher alcohols or alkylene oxide

adducts thereof; sulfonates of branched fatty acid esters obtained from branched fatty acids; acylated methyltaurine; and acylated isethionic acid.

The branched fatty acids and branched higher alcohols as described above include those branched at the α -position, those branched at the β -position and multi-branched ones, each containing saturated or unsaturated hydrocarbon groups. Examples of the branched fatty acids include methyl-branched ones obtained as a by-product in the formation of a dimer acid or synthesized by an oxo reaction or a Koch reaction; and long chain alkyl-branched ones synthesized by oxidizing Guerbet alcohols or aldols. Examples of the branched higher alcohols include those synthesized by oxo reactions.

The acyl group in a branched fatty acid preferably contains from 8 to 36 carbon atoms. Thus 2-ethylhexanoyl, 2-butylnonadecanoyl, 2-hexyldecanoyl, 2-ethylhexadecanoyl, 2-octyldodecanoyl, 2-ethyloctadecanoyl, 2-butylnonadecanoyl, 2-decyltetradecanoyl, 2-dodecylhexadecanoyl and monomethyl branched isostearoyl groups may be given as examples thereof. Among these groups, those containing from 14 to 32 carbon atoms are particularly preferable and those having the following structure are more preferable:

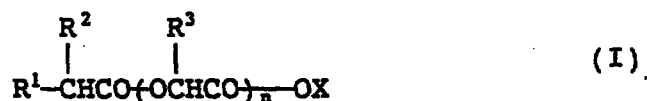


wherein m is a number of from 5 to 15; and

p is a number of from 3 to 14.

As the alkyl groups in the branched higher alcohols, those obtained by reducing the carbonyl group of the aforesaid acyl groups may be used.

As the anionic surfactant used as Component (B), the carboxylate surfactants and phosphate surfactants are preferable. In particular, fatty acid lactic esters or fatty acid glycolic esters represented by the following general formula (I):



wherein R^1 and R^2 may be the same or different and each represent an alkyl group containing from 4 to 18 carbon atoms;

R^3 represents a methyl group or a hydrogen atom;

X represents a hydrogen atom, an alkali metal, an alkaline earth metal, an ammonium group, an alkanolammonium group or a lower alkyl ammonium group; and

n is a number of from 1 to 5 on the average, are useful.

In the above general formula (I), n represents the average number of lactate or glycolate residues and ranges from 1 to 5, preferably from 1 to 3, on the average.

The anionic surfactant of Component (B) may be preferably be present in an amount of from 0.1 to 5 % by weight, more preferably from 0.1 to 3.0 % by weight, based on the total weight of the composition.

The surfactant, other than Component (B), used as Component (C) in the present invention include anionic surfactants and ampholytic surfactants as shown below.

Anionic surfactants:

(1) Straight-chain or branched alkyl benzene-sulfonates having an alkyl group containing from 10 to 16 carbon atoms on the average.

(2) Alkyl or alkenyl ether sulfates having a straight-chain or branched alkyl or alkenyl group each containing from 10 to 20 carbon atoms on the average, and to which 0.5 to 8 moles on the average of one or more of ethylene oxide, propylene oxide, butylene oxide and ethylene oxide and propylene oxide are added per molecule in a mole ratio of from 0.1/9.9 to 9.9/0.1, or 0.5 to 8 moles on the average of ethylene oxide and butylene oxide are added per molecule in a mole ratio of from 0.1/9.9 to 9.9/0.1.

(3) Alkyl or alkenyl sulfates having an alkyl or alkenyl group each containing from 10 to 20 carbon atoms on the average.

(4) Olefin sulfonates containing from 10 to 20 carbon atoms on the average per molecule.

(5) Alkane sulfonates containing from 10 to 20 carbon atoms on the average per molecule.

(6) Saturated or unsaturated fatty acid salts containing from 10 to 24 carbon atoms on the average per molecule.

(7) Alkyl or alkenyl ether carboxylates having an alkyl or alkenyl group containing from 10 to 20 carbon atoms on the average, and to which 0.5 to 8 moles on the average of one or more of ethylene oxide, propylene oxide, butylene oxide and ethylene oxide and propylene oxide are added per molecule in a mole ratio of from 0.1/9.9 to 9.9/0.1, or 0.5 to 8 moles on the average of ethylene oxide and butylene oxide are added per molecule in a mole ratio of from 0.1/9.9 to 9.9/0.1.

(8) α -Sulfone fatty acid salts or esters having an alkyl or alkenyl group containing from 10 to 20 carbon atoms on the average.

(9) N-Acyl amino acid surfactants having an acyl group containing from 8 to 24 carbon atoms and a free carboxylic acid residue.

(10) Phosphoric mono- or diester surfactants having an alkyl or alkenyl group containing from 8 to 24 carbon atoms.

(11) Sulfosuccinic esters of higher alcohols containing from 8 to 22 carbon atoms or an ethoxylate or

propoxylate thereof or sulfosuccinic esters of higher fatty acid amide derivatives.

Ampholytic surfactants:

(12) Imidazoline ampholytic surfactants of the α -position addition type, secondary amide type or tertiary amide type, each having an alkyl, alkenyl or acyl group containing from 8 to 24 carbon atoms,

(13) Carboxybetaine, amidobetaine, sulfobetaine, hydroxysulfobetaine or amidosulfobetaine ampholytic surfactants each having an alkyl, alkenyl or acyl group containing from 8 to 24 carbon atoms.

Examples of the counter ion for the anionic residues of these surfactants include alkali metal ions (for example, sodium, potassium), alkaline earth metal ions (for example, calcium, magnesium), ammonium ion and alkanolamine ions having 1 to 3 alkanol groups containing 2 or 3 carbon atoms (for example, monoethanolamine, diethanolamine, triethanolamine, triisopropanolamine). As the counter ion for the cationic residues, halogen ions (for example, chlorine, bromine, iodine), methosulfate and saccharinate ions may be cited.

Among these surfactants, those falling within (2) alkyl ether sulfates; (3) alkyl sulfates; (6) saturated or unsaturated fatty acid salts; (9) acylated amino acids; (10) phosphoric monoester type surfactants; (11) sulfosuccinic esters; and (12) secondary amide type imidazoline ampholytic

surfactants, in particular, amide amino acid type ampholytic surfactants as disclosed, for example, in JP-A-63-128100, which have been desalted so as to improve the solubility of the polymers; are preferable as a major surfactant (Component (C)). Suitable examples thereof include polyoxyethylene lauryl ether sodium sulfates (average mole number of added ethylene oxide (E.O.): 2 to 3), triethanolamine lauryl sulfate, sodium salt of coconut oil fatty acids, lauroyl-N-methyltaurine, lauroyl-N-methyl- β -alanine, polyoxyethylene lauryl disodium sulfosuccinates (3 to 7 E.O.), lauryl phosphate, N-lauroyl-N'-carboxymethyl-N'-(2-hydroxyethyl)ethylenediamine triethanolamine salt and N-lauroyl-N-(2-hydroxyethyl)-N',N'-bis(carboxymethyl)ethylenediamine sodium salt. Such a surfactant would form a complex together with the water soluble polymer of Component (A). When the shampooed hair is rinsed, a large amount of this complex deposits on the hair and thus remains on the hair.

Either one of these surfactants or a combination thereof may be used as Component (C). The content of Component (C) may range from 5 to 50 % by weight, preferably 10 to 40 % by weight, based on the total weight of the composition.

In addition to the aforesaid essential components, the shampoo composition of the present invention may further contain various additives commonly employed in shampoos, for example, additives for accelerating foaming such as nonionic

surfactants, alkylamine oxides and fatty acid alkanolamides; those for improving the hair touch such as squalene, lanolin, silicone derivatives and cationic surfactants; humectants such as propylene glycol, glycerol, diethylene glycol monoethyl ether and sorbitol; viscosity controlling agents such as methylcellulose, carboxyvinyl polymer, hydroxyethylcellulose, polyoxyethylene glycol distearate and ethanol; pearling agents; perfumes; colorants; UV absorbers; antioxidants; bactericides such as triclosan and trichlorocarbane; antiinflammatory agents such as potassium glycyrrhetinate and tocopherol acetate; anti-dandruff agents such as zinc pyrithione and octopirox; and preservatives such as methylparaben and butylparaben, so long as the effects of the present invention are not deteriorated thereby.

The shampoo composition of the present invention can be formulated into an aqueous composition. In this case, the content of water may range from 40 to 90 % by weight based on the total weight of the composition.

The shampoo composition of the present invention may be produced in a conventional manner.

The shampoo composition of the present invention exerts excellent conditioning effects. Namely, it gives a foam of a good touch and imparts no stickiness but rather a moist and soft feel to the hair during rinsing and after drying. These characteristics of the shampoo composition of the present invention make it highly useful as a daily

shampoo for those who shampoo the hair every day and as a shampoo for damaged hair or naturally frizzy hair which can hardly be styled.

To further illustrate the present invention, the following Examples will be given.

EXAMPLE 1

Shampoo compositions as specified in Table 1 were produced in a conventional manner. Then each shampoo composition thus obtained was evaluated with respect to foaming at shampooing and the touch of the hair during rinsing and after drying. Table 1 summarizes the results. (Evaluation method)

1 g of a shampoo was applied onto 20 g (15 cm) of the hair obtained from a normal Japanese female subject. After foaming for 1 minute, the feel of the foam, the smoothness in combing with the fingers and softness at rinsing, the moist feel, softness, stickiness and combing properties of the hair after drying with a dryer were evaluated by 5 experienced panelists in accordance with the following criteria.

Feel of foam at shampooing

- A: Rich foaming and creamy texture
- B: Moderate foaming and moderate texture
- C: Poor foaming and watery texture
- D: Poor foaming

Smoothness in combing with the fingers at rinsing

- A: No grazing and highly smooth feel when combed with the fingers
- B: Less grazing and smooth feel when combed with the fingers
- C: Somewhat serious grazing and rough feel when combed with the fingers
- D: Serious grazing and rough feel when combed with the fingers

Softness at rinsing and after drying

- A: Very soft and flexible
- B: Soft
- C: Somewhat stiff
- D: Stiff

Moist feel after drying

- A: Very moist and smooth
- B: Moist
- C: Somewhat dry
- D: Dry

Stickiness after drying

- A: No stickiness and oil-free
- B: Somewhat sticky
- C: Sticky

Combing properties after drying

- A: Good combing properties and smooth
- B: Somewhat poor combing properties (tangling)
- C: Poor combing properties (serious tangling)

TABLE 1 (cont'd)

	Comparative Product				Product of the Invention							
	1	2	3	4	1	2	3	4	5	6	7	8
Feel of foam at shampooing	B	B	C	C	A	A	A	A	A	A	A	A
Smoothness in combing with fingers at rinsing	B	B	B	B	A	A	A	A	A	A	B	B
Softness at rinsing	B	B	B	B	A	A	A	A	A	A	A	A
Moist feel after drying	C	C	C	C	B	B	B	B	A	A	B	B
Softness after drying	D	D	C	C	B	B	B	B	A	A	B	B
Stickiness after drying	B	B	C	C	A	A	A	A	A	A	A	A
Combing properties after drying	B	B	B	B	A	A	A	A	A	A	A	A

Notes; *1: All percents are by weight based on the total weight of the composition.

*2: Polymer JR-400, trade name, a product manufactured by Union Carbide Co.

*3: Merquat 550, trade name, a product manufactured by Merck Co. & Inc.

*4: Yukaformer AM75, trade name, a product manufactured by Mitsubishi Petrochemical Co.

As Table 1 shows, the shampoo compositions of the present invention are each excellent in the texture of foam at shampooing and the moist feel, softness, stickiness and smooth combing properties of the dried hair.

EXAMPLES 2 to 7

Each of the following shampoo compositions gave a good touch during shampooing and rinsing and showed excellent conditioning effects on the finished hair.

EXAMPLE 2

	(% by weight)
Triethanolamine lauryl phosphate	18
Lauric acid	1
Lauric acid monoethanolamide (Amisol CME, trade name, a product manufactured by Kawaken Fine Chemical)	1.5
Cationic polymer (JR-400, trade name, a product manufactured by Union Carbide Co.)	0.8
Sodium 2-butyloctanoyllactate (Krafft point: 0°C or below)	1.0
Preservative	0.1
Colorant, perfume and pH adjuster	appropriate amount
Water	balance
Total	100

EXAMPLE 3

(% by weight)

Polyoxyethylene lauryl ether triethanolamine sulfate (3 E.O.)	8
Lauroyl-N-methyl- β -alanine sodium salt (Alanone ALE, trade name, a product manufactured by Kawaken Fine Chemical)	8
Lauric acid diethanolamide (Amisol CDE, trade name, a product manufactured by Kawaken Fine Chemical)	5
Cationic polymer (Gafquat*775, a product manufactured by GUF Co.)	1.0
Sodium 2-octyldecanoyllactate (Krafft point: 0°C or below)	2.5
Preservative	0.1
Colorant, perfume and pH adjuster	appropriate amount
Water	balance
Total	100
(* Registered Trade Mark)	

EXAMPLE 4

(% by weight)

Lauryl disodium polyoxyethylene sulfosuccinate (7 E.O.)	10
Betaine lauryldimethylaminoacetate	5
Cationic polymer (Merquat 100, trade name, a product manufactured by Merck Co. & Inc.)	0.3
Stearyltrimethylammonium chloride	0.3
Sodium 2-decyloctadecanoyllactate (Krafft point: 0°C or below)	0.5

Preservative	0.1
Colorant, perfume and pH adjuster	appropriate amount
Purified water	balance
Total	100

EXAMPLE 5

(% by weight)

Triethanolamine lauryl sulfate	13
Lauryl disodium polyoxyethylene sulfosuccinate (3 E.O.)	3
Lauric acid diethanolamide	5
Zinc pyrithione (Z-pt)	0.5
Ampholytic polymer (Plasize L-401, trade name, a product manufactured by Goo Kagaku)	0.8
Sodium 2-decyldodecanoyllactate (Krafft point: 0°C or below)	0.2
Preservative	0.1
Colorant, perfume and pH adjuster	appropriate amount
Purified water	balance
Total	100

EXAMPLE 6

(% by weight)

Triethanolamine lauryl phosphate	18
Lauric acid	1

Lauric acid monoethanolamide (Amisol CME, trade name, a product manufactured by Kawaken Fine Chemical)	1.5
Cationic polymer (JR-400, trade name, a product manufactured by Union Carbide Co.)	0.8
Sodium 2-butylhexadecanoylglycolate (Krafft point: 0°C or below)	0.5
Preservative	0.1
Colorant, perfume and pH adjuster	appropriate amount
Water	balance
Total	100

EXAMPLE 7

(% by weight)

Polyoxyethylene lauryl ether triethanolamine sulfate (3 E.O.)	8
Lauroyl-N-methyl-β-alanine sodium salt (Alanone ALE, trade name, a product manufactured by Kawaken Fine Chemical)	8
Diethanolamide laurate (Amisol CDE, trade name, a product manufactured by Kawaken Fine Chemical)	5
Cationic polymer (Gufquat 755, trade name, a product manufactured by GUF Co.)	1.0
Arginine mono-2-hexyldecylphosphate (Krafft point: 0°C or below)	2.0
Preservative	0.1
Colorant, perfume and pH adjuster	appropriate amount

Water

balance

Total

100

While the invention has been described in detail and with reference to specific examples thereof, it will be apparent to one skilled in the art that various changes and modifications can be made therein without departing from the spirit and scope thereof.



CLAIMS:

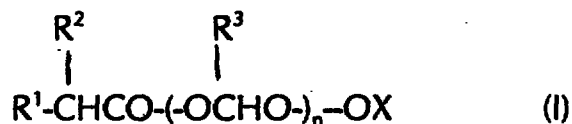
1. A shampoo composition comprising the following components (A), (B) and (C):

(A) a water-soluble polymer selected from among cationic polymers and ampholytic polymers;

(B) an anionic surfactant having a branched acyl group, a branched alkyl group or a branched alkenyl group, which is dispersible in water (as defined herein) and which has a Krafft point of 10°C or below; and

(C) a surfactant selected from among anionic surfactants other than those specified in (B) and ampholytic surfactants.

2. A shampoo composition of Claim 1, wherein said component (B) is a fatty acid lactic ester or a fatty acid glycolic ester represented by the following general formula (I):



wherein R¹ and R² may be the same or different and each represents an alkyl group having 4 to 18 carbon atoms; R³ represents a methyl group or a hydrogen atom; X represents a hydrogen atom, an alkali metal, an alkaline earth metal, an ammonium group, an



alkanolammonium group or a lower alkyl ammonium group;
and

n is a number of from 1 to 5 on the average.

3. A shampoo composition of claim 1, wherein
Component (A) amounts from 0.05 to 2 % by weight, Component (B)
amounts from 0.1 to 5 % by weight and Component (C) amount from
5 to 50 % by weight.
