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Señor

SUPERINTENDENTE DE INDUSTRIA Y COMERCIO

DIVISION DE NUEVAS CREACIONES

E. S. D.

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Re: P1.-**UNILEVER N.V.-** Solicitud de patente de Invención para **"COMPOSICIONES LIQUIDAS QUE CONTIENEN UNA EMULSION ESTABLE DE UN AGENTE DE PARTICULA PEQUEÑA, BENEFICIO PARA LA PIEL"** .-Clase **A.61**.- Expediente **00-023.951**.-

1. Me refiero a mi memorial de 31 de Agosto de 2004.

2. Por medio del presente atentamente ruego a usted, se sirva pronunciarse en relación con la solicitud arriba nombrada, ya que desde el 30 de Mayo de 2002, esto hace más de **(2) años**, que fue publicado el extracto de la presente solicitud en la Gaceta de la Propiedad Industrial No. 516, y el examen de patentabilidad correspondiente fue solicitado en su debido momento mediante memorial de 11 de Octubre de 2002, sin que haya sido adelantado ningún otro trámite.

3. Cabe anotar que esta demora en el trámite acarrea grave perjuicio para mi representado.

Señor Superintendente,

Fondo 01 D.U. 21-01-05

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(54) Shampoo composition.

(57) A shampoo composition comprises :
(a) a surfactant which is chosen from anionic, nonionic or amphoteric surfactants or mixtures thereof ;
(b) an aqueous emulsion of a solution of highly viscous silicone in volatile solvent ; and
(c) a cationic conditioning polymer which is a cationic derivative of guar gum ;
wherein the average particle size of the highly viscous silicone in the composition is less than 2 μm in diameter.

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Background of the Invention

The present invention relates to shampoo compositions, and more particularly to shampoo compositions containing highly viscous silicones which are preferably silicone resins or siloxane gums, giving body to fine, limp hair and increasing the ability of hair to hold a style.

The property of hair known as "body" is a complex one, and can be interpreted as fullness or volume of the hair. It also embraces ease of styling and ability to hold a style. Fine hair often suffers from a lack of body and is found to be limp and unmanageable.

Other types of hair can benefit from an increased ease of styling and an increased ability to hold a style. Generally, this is achieved by application of film-forming materials to the hair, usually after shampooing and/or conditioning, in the form of mousses, gels or sprays.

Silicone materials have been applied to the hair to give some conditioning benefit, see for example US 3 964 500 and US 4 364 837. However, the silicones used are generally of relatively low viscosity since low viscosity silicones are more readily incorporated into shampoo compositions.

Highly viscous silicones have the ability to modify the condition and manageability of hair. Siloxane gums improve the combability, softness and condition of the hair and reduce its susceptibility to damage due to mechanical manipulation caused for example by brushing and styling. Silicone resins give body to fine, limp hair and increase the ability of hair to hold a style.

These highly viscous silicones are extremely difficult to incorporate into a shampoo product, because they cannot be dispersed to form droplets or an emulsion. To aid dispersion, the highly viscous silicones must be first dissolved in a volatile solvent in order that the viscosity be reduced. The solution of the highly viscous silicone may then be emulsified.

In JP 61/161214 (Shiseido), setting compositions comprising silicone resin and volatile silicone are disclosed. These compositions are delivered from both leave-on and rinse-off compositions containing volatile solvents which evaporate to leave the silicone resin on the hair.

EP 240 350 (Procter & Gamble) relates to compositions comprising a rigid silicone polymer and a volatile carrier.

The droplets of silicone polymer in volatile silicone, obtained by the process used in EP 240 350 are in general greater than 5 μm in diameter on average. Such relatively large particles are more difficult to suspend in a shampoo system, and can give rise to processing difficulties with the need for hot processing and high shear mixing.

Particles having an average diameter of less than 2 μm tend to remain suspended in a shampoo composition and are therefore rinsed from the hair. We have found however that by including a cationic derivative of guar gum in the shampoo composition, small particles, ie those having an average diameter of less than 2 μm, can be effectively deposited on the hair shaft.

Accordingly the invention provides a shampoo composition comprising (a) a surfactant which is chosen from anionic, nonionic or amphoteric surfactants or mixtures thereof; (b) an aqueous emulsion of a solution of highly viscous silicone in volatile solvent; and (c) a cationic conditioning polymer which is a cationic derivative of guar gum; wherein the average particle size of the silicone resin in the composition is less than 2m in diameter.

The invention will now be described in detail.

(a) Surfactant

The composition of the invention comprises a surfactant which is chosen from anionic, nonionic or amphoteric surfactants or mixtures thereof.

Suitable anionic surfactants are the alkyl sulphates, alkyl ether sulphates, alkaryl sulphonates, alkyl succinates, alkyl sulphosuccinates, N-alkoyl sarcosinates, alkyl phosphates, alkyl ether phosphates, alkyl ether carboxylates, and alpha-olefin sulphonates, especially their sodium, magnesium, ammonium and mono-, di- and triethanolamine salts. The alkyl groups generally containing from 8 to 18 carbon atoms and may be unsaturated. The alkyl ether sulphates, alkyl ether phosphates and alkyl ether carboxylates may contain from one to 10 ethylene oxide or propylene oxide units per molecule, and preferably contain 2 to 3 ethylene oxide units per molecule.

Examples of suitable anionic surfactants include sodium oleyl succinate, ammonium lauryl sulphosuccinate, ammonium lauryl sulphate, sodium dodecylbenzene sulphonate, triethanolamine dodecylbenzene sulphonate and sodium N-lauryl sarcosinate. The most preferred anionic surfactants are sodium lauryl sulphate, triethanolamine lauryl sulphate, triethanolamine monolauryl phosphate, sodium lauryl ether sulphate 1EO, 2EO

4♦@♦L♦X♦d♦p

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The nonionic surfactants suitable for use in the composition of the invention may include condensation products of aliphatic (C_8-C_{18}) primary or secondary linear or branched chain alcohols or phenols with alkylene oxides, usually ethylene oxide and generally having from 6 to 30 ethylene oxide groups.

Other suitable nonionics include mono- or di-alkyl alkanolamides. Examples include coco mono- or di-ethanolamide and coco mono-isopropanolamide.

The amphoteric surfactants suitable for use in the composition of the invention may include alkyl amine oxides, alkyl betaines, alkyl amidopropyl betaines, alkyl sulphobetaines, alkyl glycinates, alkyl carboxyglycinates, alkyl amphopropionates, alkyl amidopropyl hydroxysultaines, acyl taurates and acyl glutamates wherein the alkyl and acyl groups have from 8 to 18 carbon atoms. Examples include lauryl amine oxide, cocodimethyl sulphopropyl betaine and preferably lauryl betaine, cocamidopropyl betaine and sodium cocamphopropionate.

The surfactants are preferably present in the shampoo composition of the invention in an amount of from 2 to 40% by weight, and most preferably from 5 to 30% by weight.

(b) Emulsion

The shampoo composition according to the invention comprises an aqueous emulsion of a solution of highly viscous silicone in volatile solvent. This emulsion is prepared by first dissolving the highly viscous silicone in the volatile solvent, adding emulsifier and water, and mixing to form an emulsion. The highly viscous silicone is preferably chosen from silicone resin or siloxane gum or mixtures thereof.

The silicone resins suitable for use in the compositions of the invention are preferably oligomerous alkylpolysiloxanes, arylpolysiloxanes or alkylarylpolysiloxanes, composed of suitable combinations of $R_3SiO_{0.5}$ units, R_2SiO units, $RSiO_{1.5}$ units and SiO_2 units. Their ratio is selected so that the resin has average formula $R_nSiO_{[(4-n)/2]}$ where R is C_{1-6} alkyl or aryl and n is from 0.7 to 1.8.

Suitable resins form films when the volatile silicone solvent removed by evaporation. These films are hard and brittle at ambient temperature but soften upon being heated. For suitable resins the temperature at which softening begins is preferably greater than 30°C.

It is preferred that the silicone resin has an average molecular weight of from 500 to 10000.

Suitable examples of silicone resins useful in the compositions of the invention are Siliconharz MK (Wacker) and MQ resin (General Electric).

Siliconharz MK is a silsesquioxane resin. Resin MQ is prepared by reaction of trimethyl chlorosilane or hexamethyl disilane with silicic or polysilicic acid in the presence of a weak acid in solvent.

Suitable siloxane gums for use in the shampoo composition of the invention include high molecular weight alkylpolysiloxane, arylpolysiloxane and alkylarylpolysiloxane, having a viscosity greater than 100,000 centistokes (cSt), preferably greater than 500,000 cSt.

Examples of suitable siloxane gums include SE30 and SE76, available from General Electric. These gums are polydimethylsiloxane gums having viscosities of greater than one million centistokes.

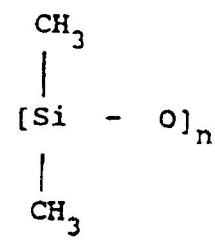
The emulsion comprises particles of a solution of highly viscous silicone having an average diameter of less than 2 μm, preferably from 0.01 to 1 μm. The average particle size may be measured for example by a laser light scattering technique using a 2600D Particle Sizer from Malvern Instruments.

The highly viscous silicones are generally present in amounts of from 0.1 to 5% preferably from 0.3 to 1.5% by weight, based on the total shampoo composition.

The highly viscous silicone is dissolved in a volatile solvent. As used herein, the term "volatile" means that the material has a measurable vapour pressure.

The preferred solvents are those having a boiling point of from 99°C to about 260°C and have a solubility in water of less than about 0.1%. Solvents are preferably chosen from volatile silicone or volatile hydrocarbon.

The most preferred solvents are volatile silicones, which may be either cyclic or linear polydimethyl siloxanes. The number of silicone atoms in the cyclic silicones is 3 to 7, most preferably 4 or 5. The general formula for cyclic silicones is:



wherein n = 3-7. Viscosities are generally less than 10 centipoise (cP) at 25°C.

Linear polydimethyl siloxanes useful in the invention generally have viscosities of about less than about 5cP at 25°C. The linear volatile silicones contain from about 3 to about 9 silicon atoms and have the general formula

$$(CH_3)_3\ Si\text{-}O\text{-}[(Si\ (CH_3)_2O]_nSi\ (CH_3)_3$$

wherein n = 1-7.

Silicones of the above described types are widely available, for example: from Dow Corning as 244, 245, 344, 345 and 200 fluids (cyclopolymethylsiloxane blends), 200/5 fluid (a very short linear polydimethylsiloxane) and 1401 fluid (a mixture of polydimethylsiloxanol gum and cyclopolymethylsiloxanes); from Union Carbide as TP503 fluid (an emulsion of polydimethylsiloxane gum in cyclopolymethylsiloxane) and Silicone 7202 and 7158; and from Stauffer Chemical as SWS-03314.

When the solvents are hydrocarbons, they may be for example, straight chain or branched chain alkyl and contain from 10 to 16 carbon atoms, preferably from 12 to 16 carbon atoms. Suitable examples are n-dodecane, permethylhydrocarbons 99A and 101A available from Presperse Inc.

The volatile solvent is generally present in an amount of from 0.1 to 10% preferably from 0.5 to 3%, by weight based on the total composition.

Any surfactant materials either alone or in admixture may be used as emulsifiers in the preparation of the silicone resin emulsions. Preferred emulsifiers include anionic emulsifiers such as alkylarylsulphonates e.g. sodium dodecylbenzene sulphonate, alkyl sulphates e.g. sodium lauryl sulphate, alkyl ether sulphates e.g. sodium lauryl ether sulphate nEO where n is from 1 to 20, alkylphenol ether sulphates e.g. octylphenol ether sulphate nEO where n is from 1 to 20, and sulphosuccinates e.g. sodium dioctylsulphosuccinate.

Also suitable are nonionic emulsifiers such as alkylphenol ethoxylates e.g. nonylphenol ethoxylate nEO, where n is from 1 to 50, alcohol ethoxylates e.g. lauryl alcohol nEO, where n is from 1 to 50, ester ethoxylates e.g. polyoxyethylene monostearate where the number of oxyethylene units is from 1 to 30.

The emulsion is preferably present in the shampoo composition in an amount of from 0.5 to 50% by weight, most preferably from 1 to 20% by weight.

The amount of emulsion present is an amount which is effective to give the desired quantity of silicone in the final composition.

(c) Cationic conditioning polymer

The shampoo composition of the invention also comprises a cationic conditioning polymer which is a cationic derivative of guar gum.

Suitable cationic guar gum derivatives are those given the CTFA designation guar hydroxypropyl trimonium chloride, available commercially for example as JAGUAR C13S, which has a low degree of substitution of the cationic groups and a high viscosity. Other suitable materials include that known as JAGUAR C15, having a moderate degree of substitution and a low viscosity, JAGUAR C17 (high degree of substitution, high viscosity) and JAGUAR C16 which is a hydroxypropylated cationic guar derivative containing a low level of substituent groups as well as cationic quaternary ammonium groups. Also suitable is JAGUAR 162 which is a high transparency, medium viscosity guar having a low degree of substitution. The compositions of the invention may contain from about 0.01 to about 1% by weight of cationic conditioning polymer, preferably from about 0.04 to about 0.5% by weight.

Other ingredients

The compositions of the invention may also optionally further comprise a suspending agent which can act to suspend particulate matter in the shampoo composition.

Suitable suspending agents include gums such as xanthan gum, guar gums, polymers of acrylic acid which may optionally be cross-linked (e.g. Carbopol 940 or 1342 available from Goodrich), esters of ethylene glycol or esters of polyethylene glycol.

The shampoo composition of the invention may also further comprise minor amounts of other ingredients commonly found in shampoo compositions, such as antibacterial agents, antidandruff agents such as zinc pyridinethione or Octopirox, foam boosters, pearlescers, perfumes, dyes, colouring agents, preservatives, viscosity modifiers (e.g. thickening agents such as sodium chloride or ammonium chloride), proteins, polymers, buffering agents, polyols and other moisturising agents, and herb extracts.

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		%wt
SE 30 siloxane gum		10
Permethylhydrocarbon 99A		40
Lauryl alcohol ethoxylate 2EO/21EO		4
Preservative		qs
Water	to	100

Example 5

A shampoo composition according to the invention is prepared according to the process described herein:

		%wt
Ammonium lauryl ether sulphate 3EO		14
Cocoamidopropyl betaine		4
Carbopol 940		0.3
Silicone emulsion 7		6
Jaguar C13S		0.25
Perfume, preservative		qs
Water	to	100

7 - The silicone emulsion comprises:

	%wt
SE76 siloxane gum	7
Volatile silicone DC 345	28
Lauryl alcohol ethoxylate 2EO/21EO	4
Preservative	qs
Water	to 100

Further examples of shampoo compositions according to the present invention are given in Examples 6 to 35 below. All amounts are expressed in %wt, except where otherwise stated.

Example	6	7	8	9	10	11	12
Sodium lauryl ether sulphate 2EO	16	16	16	16	16	16	16
Cocoamidopropyl betaine	2	2	2	2	2	2	2
Carbopol 940	0.4	0.4	0.4	0.4	0.4	0.4	0.4
Jaguar C13S	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Siliconharz MK	1	0.5	1.5	2.5	-	-	-
DC 344	3	3.5	2.5	4.0	0.3	0.6	3.0
SE 30 gum	-	-	-	-	0.05	0.1	0.5
Perfume, preservative				q.s.			
Sodium chloride	3	4	3	4	1.5	2.0	4.0
Water				to 100			

Example	13	14	15
Ammonium lauryl sulphate	12	12	12
Lauryl dimethyl betaine	2	2	2
Carbopol 1342	0.4	0.4	0.4
Jaguar C13S	0.5	0.5	0.5
SR 545	1.5	-	-
SE 76 gum	-	0.25	0.75
DC 345	2.5	1.5	3.0
Perfume, preservative		q.s.	
Ammonium chloride	3	2.5	4.0
Water		to 100	

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(57) Abstract

The liquid of the present invention can provide good cleansing, lather and good sensory feel and yet surprisingly provide a lipid moisturizing benefit via deposition of the lipid on the skin of the user. The liquid composition is stable and on a macro scale is homogeneous. The dual cleansing and lipid moisturizing liquid composition of this invention comprises: (1) about 5 parts to about 30 parts of a lipid skin moisturizing agent; (2) about 1 to about 15 parts of an ethylene glycol fatty acid ester; (3) from about 0.05 parts to about 3 parts of a selected water dispersible gel forming polymer; (4) from about 5 parts to about 30 parts of a lathering synthetic surfactant; and (5) water, and wherein said synthetic surfactant and any soap has a combined CMC equilibrium surface tension value of from 15 to 50, and wherein said lathering skin cleansing liquid composition has a Lipid Deposition Value (LDV) of from about 5 to about 1000 μg of lipid per sq. cm of skin.

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SHELF STABLE SKIN CLEANSING LIQUID WITH GEL FORMING POLYMER, LIPID AND CRYSTALLINE ETHYLENE GLYCOL FATTY ACID ESTER

TECHNICAL FIELD

The present invention relates to personal skin moisturizing and cleansing compositions.

BACKGROUND OF THE INVENTION

Moisturizers are usually applied directly to the skin as leave-on products. Personal cleansing products are usually applied with water as a foam or lather and rinsed off with clear water. Ideal rinse off personal cleansers should cleanse the skin gently, causing little or no irritation without defatting and or drying the skin and without leaving skin taut after frequent use. Most lathering personal cleansing products, bar soaps, liquids and syndet liquids fail in this respect.

Some current commercial personal cleansing liquids claim to "moisturize" the skin. But, most of these current cleansing liquid products do not deliver an adequate moisturizing benefit. Therefore, users typically must moisturize their skin with a separate leave-on product following cleansing.

It would be highly desirable to improve the delivery of skin moisturizers from a cleansing liquid composition over the current commercial personal cleansing liquids. If this were accomplished it would provide users with the convenience of obtaining both a cleansing and a moisturizing benefit from a single product.

Dual cleansing and lipid moisturizing liquid compositions are very difficult to formulate and process. One reason is the cleansing ingredients, in general, tend to be incompatible with the lipid moisturizing ingredients. Another problem is processing on a commercial scale. Yet another problem is getting the lipid in the liquid to deposit on the skin of the user . The deposition of lipid moisturizer from the liquid, onto the skin can be very low due to loss of the lipid in the wash and the rinse. Conversely, it can feel too sticky if deposited on the skin. Still another problem is formulating a dual liquid that lathers well. Another problem is formulating a dual liquid that is storage stable.

The actual deposition of lipid moisturizer from a lathering dual liquid composition is essential for effective lipid benefit. No known commercial prior art liquid that claims to be a cleansing and lipid moisturizing liquid, deposits *as much* 3 micrograms of lipid moisturizer per cm. sq. of washed skin.

U.S Pat. No. 3,829,563, Barry et al., issued Aug. 13, 1974, discloses an emollient cleansing composition containing 10-70% by weight petrolatum with up to 98%, preferably, 95-98%, having a diameter particle size smaller than 5 microns.

U.S. Pat. No. 5,308,526, Dias et.al., issued May 3, 1994, incorporated herein by reference, discloses liquid skin compositions with up to 5% petrolatum wherein 20-80% of said petrolatum particles have a particle size from 10-120 microns.

U.S. Pat. No. 5,312,559, Kacher et al., issued May 17, 1994, incorporated herein by reference, discloses semi-solid compositions of 60,000 to 400,00 cps containing 0.5% to 15% petrolatum having a particle size distribution in which 20% to 80% of the particles are 10 -120 microns.

It is an object of the present invention to provide an effective, yet gentle, dual skin cleansing liquid composition which actually deposit enough lipid on the skin to provide superior skin moisturizing and sensory benefits while maintaining its lathering and cleaning properties.

SUMMARY OF THE INVENTION

The liquid of the present invention can provide good cleansing, lather and good sensory feel and yet surprisingly provide a lipid moisturizing benefit via deposition of the lipid on the skin of the user. The liquid composition is stable and on a macro scale is homogeneous.

The dual cleansing and lipid moisturizing liquid composition of this invention comprises: (1) about 5 parts to about 30 parts of a lipid skin moisturizing agent; (2) about 1 to about 15 parts of an ethylene glycol fatty acid ester; (3) from about 0.05 parts to about 3 parts of a selected water dispersible gel forming polymer (4) from about 5 parts to about 30 parts of a lathering synthetic surfactant, and; (5) water, and wherein said synthetic surfactant and any soap has a combined CMC equilibrium surface tension value of from 15 to 50, and wherein said lathering skin cleansing liquid composition has a Lipid Deposition Value (LDV) of from about 5 to about 1000 μg of lipid per sq. cm of skin..

DETAILED DESCRIPTION OF THE INVENTION

The present invention can provide a dual cleansing and lipid moisturizing liquid composition: 1) which produces an abundant, stable, high quality lather, 2) which is an effective skin cleanser, 3) which is very mild to the skin and ocular mucosae, 4) which actually delivers an effective amount of a lipid moisturizing agent to the skin of the user during the wash; 5) which is non-sticky after use, and 6) which is storage stable.

The present liquid is a lathering skin cleansing liquid composition comprising by *weight parts of the following liquid composition*:

(a) from about 5 parts to about 30 parts of lipid skin moisturizing agent having a Vaughan Solubility Parameter (VSP) of between 5 and 10;

(b) from about 1 part to about 15 parts of C10-C22 ethylene glycol fatty acid esters,

(c) from about 0.05 parts to about 3 parts of a selected water dispersible gel forming

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(d) from about 5 part to about 30 parts of a synthetic surfactant;

(e) from about 0 part to about 15 part of a C8 to C14 fatty acid soap; wherein said soap has a counterion selected from the group consisting of: K, NH4, N(CH2CH2OH)3; and mixtures thereof; and

(f) water; and,

wherein said synthetic surfactant and any soap has a combined CMC equilibrium surface tension value of from 15 to 50, and wherein said lathering skin cleansing liquid composition has a Lipid Deposition Value (LDV) of from about 5 to about 1000 μg of lipid per sq. cm of skin.

GLOSSARY OF TERMS

The term **"Oil in Water Emulsion Stabilizer"** as used herein, is defined as an ingredient that helps to prevents the oil or lipid from separating in a cleanser's neat form while allowing lipid to be released to deposit on the skin wend used in bath or shower, some examples of such stabilizers are: crystalline ethylene glycol fatty acid ester, water dispersible gel forming polymer or a combination of this ester and a water dispersible gel forming polymer.

The term **"Shelf Stable Liquid Cleanser,"** as used herein, is defined as a neat lathering skin cleansing liquid composition that under ambient conditions does not phase separate for at least two weeks, preferably for at least six months, and more preferable never.

The term **"Lipid Release"**, as used herein, means that a lipid in a liquid emulsion cleanser will release or separate from the emulsion upon dilution to lather concentrations. Such a liquid cleanser will provide improved lipid deposition.

The term **"Water Dispersible Gel Forming Polymer"** as used herein means that the polymer is water dispersible and forms a gel in water of the liquid cleanser at 5 to 40° C.

Vaughan Solubility Parameter (VSP) is a calculated parameter used to define a lipid's solubility. Vaughan parameters typically have a range of 5-25.

Lipid Deposition Value (LDV) is a measure of how much lipid is deposited on skin from compositions herein, the reading corresponds to the amount measured using a Sebumeter (typically the mean of four-six readings), as defined in Lipid Deposition Protocol 1, herein.

Equilibrium Surface Tension is a measure of surface tension of a surfactant as measured at the critical micelle concentration at 25°C; units are dynes/cm.

Consistency, k, is a measure of lipid viscosity, used in combination with Shear index, to define viscosity for materials whose viscosity is a function of shear. The measurements are made at 35°C and the units are poise (equal to 100 cps).

Shear index, n, is a measure of lipid viscosity, used in combination with Consistency, to define viscosity for materials whose viscosity is a function of shear. The measurements are made at 35°C and the units are dimensionless.

Elastic Modulus G' is used to define rheological properties of lipid and is a measurement of a lipids ability to store or return energy. The measurements are made at 35°C and the units are dynes/sq. cm.

Viscous Modulus G" is used to define rheological properties of lipid and is a measurement of unrecoverable energy. The measurements are made at 35°C and the units are dynes/sq. cm.

All parts, percentages and ratios used herein are by weight basis and all measurements are at 25°C, unless otherwise indicated.

THE CRYSTALLINE ETHYLENE GLYCOL FATTY ACID ESTER STABILIZER

One liquid cleanser oil inwWater emulsion stabilizer, of this invention is a crystalline ethylene glycol fatty acid ester. This stabilizer is not a surfactant. This crystalline stabilizer provides a stable liquid cleanser with larger lipid particles.

This stabilizer provides improved shelf stability but allows the lipid in water emulsion to separate upon dilution to a lather concentration and thereby provide for increased lipid deposition onto the skin.

The non-surfactant oil in water emulsification network comprises crystals of C10-C22 ethylene glycol fatty acid ester. The ethylene glycol fatty acid ester comprises from 1 part to 15 parts, preferably from 1 part to 10 parts, more preferably from 3 parts to about 8 parts of the liquid. The ester is preferably a diester, more preferably C14-C18 diester, most preferably, Ethylene Glycol Distearate.

While not being bound by theory, it is believed that the ester form an insoluble particle network, preferably platelet crystals, that prevent the coalescence of lipid particles, thus preventing phase separation of the product. This network breaks down on dilution in the lather, resulting in emulsion instability in the lather and deposition of lipid on skin.

THE WATER DISPERSIBLE GEL FORMING POLYMER

The above selected oil in water stabilizer of present invention is used in combination with another selected oil in water stabilizer of this invention. The other stabilizer is a water dispersible gel forming polymer. This polymer is preferably an anionic, nonionic, cationic or hydrophobically modified polymers, selected from the group consisting of cationic polysaccharides of the cationic guar gum class with molecular weights of 1,000 to 3,000,000, anionic, cationic and nonionic homopolymers derived from acrylic and/or methacrylic acid, anionic, cationic and nonionic cellulose resins; cationic copolymers of dimethyldialkylammonium chloride and acrylic acid; cationic homopolymers of dimethyldialkylammonium chloride; cationic polyalkylene and ethoxypolyalkylene imines polyethylene glycol of molecular weight from 100,00 to 4,000,000; and mixes thereof. Preferably, the polymer is selected form the group consisting of Sodium Polyacrylate, Hydroxy Ethyl Cellulose, Cetyl Hydroxy Ethyl Cellulose, and Polyquaternium 10.

Preferred compositions include form 1 parts to 15 parts C10-C22 ethylene glycol fatty acid esters and 0.1 parts to 3 or 5 parts, more preferably 0.3 parts to 3 parts, polymer gel former.

Some compositions have from 0.3 parts to 5 parts , more preferably 0.8 parts to 3 parts, water dispersible gel forming polymer. In the product that contains no ethylene glycol fatty acid esters, 0.3 parts to 3 parts water dispersible gel forming polymer, preferably chosen from the group consisting of Sodium Polyacrylate, Hydroxy Ethyl Cellulose, Cetyl Hydroxy Ethyl Cellulose, and Polyquaternium 10, and from 0.5 parts to 6 parts from the group consisting of C10-C18 fatty alcohol, oleyl alcohol, C10-C18 fatty acid, and oleyl acid, and mixtures thereof. Most preferably, these liquid compositions contain from 1.0 parts to 5.0 parts selected from C16, C18, and Oleyl alcohol, or myristic acid; and mixtures thereof.

The water dispersible gel forming polymer can also improve the sensory feel of the lipid on skin in addition to product stabilization. The improved sensory results from reduced tackiness and greasiness and improved smoothness. It is an especially preferred embodiment to use mixture of polymers, some of which are preferred for product stabilization, some are preferred for improved sensory. Preferred polymers to improve sensory are selected from the following group consisting: of polyethylene glycol, hydroxypropyl guar, guar hydroxypropyltrimonium chloride, polyquaternary 3, 5, 6, 7, 10, 11 and 24 and mixes thereof.

Polymers that do not form gels with water are optional and are not used by themselves or to stabilize the liquid composition of this invention.

Lipid Release Test

The following test is used to determine whether or not some lipid in a lipid in water liquid cleanser product will be "released" or separate as a lipid phase.

A twenty percent (20%) solution of the neat liquid cleanser is made by weighing 5 grams of neat liquid product into a 100 ml beaker and adding 20 grams of 75-78 F (22-24 C) tap water of hardness 7-8. It is stirred for 3 minutes on a magnetic stirplate with a 1 1/2" (3.75 cm.) stir bar at a medium setting with a good vortex.

The stirred sample is poured into a graduated cylinder (preferably 10 ml) and observed for 1 Hour at room temperature. Preferred compositions show phase separation during this time period, with a clear layer at or near the bottom, indicative of the lighter lipid phase separating to the top. Less preferred compositions take longer to separate.

No known commercially available prior art liquid cleanser that contains a lipid has a measurable separation during the 1 hour period, when subjected to the above test. While not being bound to any theory, the probable reason for this is that those prior art liquids are over emulsified with surfactant and/or non-crystalline emulsifiers.

The lipid skin moisturizing agent in the liquid composition provides the skin of the user with a moisturization benefit via deposition of the lipid on skin during use. In this invention the lipid skin moisturizing agent is defined with scrutiny. The lipid type and its physical properties in this present invention hold the key to the overall product effectiveness, and is restricted to a hydrophobic material with the following defined physical and rheological properties.

Vaughan Solubility Parameter Value (VSP)

The lipid in this present invention is further defined by its solubility parameter, as defined by Vaughan in Cosmetics and Toiletries, *Vol. 103, p47-69, Oct. 1988.* A lipid having a Vaughan Solubility Parameter Value (VSP) of from 5 to 10, preferably 5.5 to 9 , more preferably where at least 70% of said lipid has a VSP of 6.5 to 7.75 for use in the liquid compositions herein.

VAUGHAN SOLUBILITY PARAMETER TABLE*

Cyclomethicone	5.92
Squalene	6.03
Mineral Oil	7.09
Petrolatum	7.33
Isopropyl Palmitate	7.78
Isopropyl Myristate	8.02
Castor Oil	8.90
Cholesterol	9.55

* As reported in Solubility, Effects in Product, Package, Penetration and Preservation, C. D. Vaughan, Cosmetics and Toiletries, Vol. 103, October 1988.

Fatty acids, fatty acid soaps and water soluble polyols are specifically excluded from our definition of a lipid. Thus stearic acid, glycerine and propylene glycol are excluded from our definition of a lipid.

SOME PREFERRED LIPIDS

Notwithstanding the rheological and solubility requirements, a wide variety of lipid type materials and mixtures of materials are suitable for use in the compositions of the present invention. Preferably, the lipid is selected from the group consisting of hydrocarbons oils and waxes, silicones, fatty acid derivatives, cholesterol, cholesterol derivatives, di and tri-glycerides, vegetable oils, vegetable oil derivatives, and acetoglyceride esters, alkyl esters, alkenyl esters, lanolin and its derivatives, milk -tri-glycerides, wax esters, beeswax derivatives, sterols and phospholipids mixtures thereof.

Hydrocarbon oils and waxes: Some examples are petrolatum, mineral oil micro-crystalline

Silicone Oils: Some examples are dimethicone copolyol, dimethylpolysiloxane, diethylpolysiloxane, high molecular weight dimethicone, mixed C1-C30 alkyl polysiloxane, phenyl dimethicone, dimethiconol, and mixtures thereof. More preferred are non-volatile silicones selected from dimethicone, dimethiconol, mixed C1-C30 alkyl polysiloxane, and mixtures thereof. Nonlimiting examples of silicones useful herein are described in U.S. Patent No. 5,011,681, to Ciotti et al., issued April 30, 1991, which is incorporated by reference.

Di and tri-glycerides: Some examples are castor oil, soy bean oil, derivatized soybean oils such as maleated soy bean oil, safflower oil, cotton seed oil, corn oil, walnut oil, peanut oil, olive oil, cod liver oil, almond oil, avocado oil, palm oil and sesame oil, vegetable oils and vegetable oil derivatives; coconut oil and derivatized coconut oil, cottonseed oil and derivatized cottonseed oil, jojoba oil, cocoa butter, and the like.

Acetoglyceride esters are used and an example is acetylated monoglycerides.

Lanolin and its derivatives are preferred and some examples are lanolin, lanolin oil, lanolin wax, lanolin alcohols, lanolin fatty acids, isopropyl lanolate, acetylated lanolin, acetylated lanolin alcohols, lanolin alcohol linoleate, lanolin alcohol riconoleate.

Milk glycerides are useful and an example is hydroxylated milk glyceride.

Polyol fatty acid polyesters are also useful.

Wax esters, such as beeswax and beeswax derivatives, spermaceti, myristyl myristate, stearyl stearate are also useful. Vegetable waxes are useful and some examples are carnauba and candelilla waxes. Sterols are useful and some examples are cholesterol, cholesterol fatty acid esters. Phospholipids, such as lecithin and derivatives, Sphingo lipids, ceramides, glycosphingo lipids are also useful.

It is more preferred when at least 70 % of the lipid is selected from the group consisting: petrolatum, mineral oil micro-crystalline waxes, paraffins, ozokerite, polyethylene, hydrogenated polybutene, polydecene and perhydrosqualene. dimethicones, cyclomethicones, alkyl siloxanes, polymethylsiloxanes and methylphenylpolysiloxanes, and mixture thereof.

It is most preferred when at least 75 % of lipid is composed of lipids selected from the group consisting: petrolatum, mineral oil, hydrogenated polybutene, and polydecene, and mixtures thereof, and wherein the ratio of petrolatum to the other selected lipids (hydrogenated polybutene or polydecene or mineral oil) is from about 10:1 to about 1:3, more preferably from about 5:1 to about 1:1.

The lipid is preferably in the liquid as an emulsion having droplets ranging from about 0.1 microns to 100 microns, excluding anomalous very small or a few very large particles. Preferably [illegible] of the lipid particles are from 5 microns to 120 microns and more preferably at

containing lipids to actual deposition levels in μg/sq. cm. Lipid deposition values of from 15 to 200 ug/sq. cm., more preferably from 30 to 150 ug/sq. cm. are preferred.

The Sebumeter has the following limitations:

1. The Sebumeter tape also detects natural skin lipids. A criterion of this test was that subjects baseline value measured on the Sebumeter, prior to washing, be less than or equal to 1 or 2 μg/sq. cm of forearm skin.

2. The Sebumeter like other surface extraction measurements may not measure all the deposited lipid, if the skin topography is undulating it is possible that deposited lipid may not be extracted by the Sebumeter tape.

3. The Sebumeter tape becomes saturated at a LDV of above about 300 μg/sq. cm; so it is understood that for deposition values above 300 μg/sq. cm, Protocol 2 is used.

4. Different lipid systems will have different conversion factors. For testing non-petrolatum lipids, a new calibration curve is required.

LIPID DEPOSITION PROTOCOL 2

The second protocol uses a solvent extraction method similar in type to that described in the Journal Society of Cosmetic Chemists of Great Britain *Vol. 21 (p 521-532), 1970.* An extraction cup is firmly attached to the forearm and heptane poured in to the cup, such that it is in contact with the forearm. The solvent extract containing the extracted lipid is analyzed by standard gas chromatographic methods.

THE LATHERING SYNTHETIC SURFACTANT

The liquid composition comprises a lathering synthetic surfactant selected from the group consisting of anionic surfactants; nonionic surfactants, cationic surfactants, amphoteric surfactants, and mixtures thereof.

The lathering synthetic surfactant is defined herein as a synthetic surfactant or mixes thereof that when combined have an equilibrium surface tension of between 15 and 50 dynes/cm, more preferably between 25 and 40 dynes/cm as measured at the CMC (critical micelle concentration) at 25°C. Some surfactant mixes can have a surface tension lower than those of its individual components.

TABLE OF SOME SYNTHETIC SURFACTANTS SURFACE TENSION*

Surfactant	Surface tension at CMC (dynes/cm)
Anionics	
Sodium Dodecane Sulfonate	43
Potassium Dodecane Sulfonate	38
Sodium Dodecyl Sulfate	40

159
154

Sodium hexadecyl Sulfate	37
Sodium Dodeceth-2 Sulfate	42
Sodium Decyl Benzene Sulfonate	48
Sodium Dodecyl Benzene Sulfonate	47
Sodium Hexadecyl Benzene Sulfonate	45
Cationics	
Tetradecyl Trimethyl Ammonium Bromide	41
Dodecyl Trimethyl Ammonium Methane Sulfonate	39
Zwitterionics	
Dodecyl Betaine	33
Hexadecyl Betaine	35
Dodecyl Benzyl methyl Ampho Acetate	33
Nonionics	
1,2 Dodecyldiol	23
1,3 Pentadecyldiol	27
Hexeth-6	32
Deceth-6	30
Dodeceth-3	28
Dodeceth-12	40
Hexadeceth-6	32
Hexadeceth-21	45
Nonoxynol-10	31
Nonoxynol-30	41
Dimethicone copolyol	21-22

* As calculated from Surfactants and Interfacial Phenomena by Rosen, Wiley, 1988)

TABLE OF SOME PREFERRED SURFACTANTS SURFACE TENSION**

Surfactant	Surface tension (dynes/cm)
C12-C14 Glycerylether sulfonate	47
Sodium Lauryl Isethionate	42
Sodium Coco Isethionate	42
Sodium Stearyl Isethionate	72
Sodium Ether (3) Sulphate	47

Sodium Lauryl Sarcosinate	42

**Measured on Kruss BP-10 Dynamic surface tensiometer, these measurements were not equilibrium, nor at the CMC. Equilibrium measurements are typically lower than Dynamic. .

The combined personal cleansing and moisturizing liquid composition herein comprises at least from about 5 part to about 30 parts, preferably from about 5 parts to about 25 parts, and most preferably from about 10 parts to about 25 parts of a lathering synthetic surfactant.

Anionic surfactants useful herein include: acyl isethionates, acyl sarcosinates, alkylglycerylether sulfonates, acyl lactylate, methylacyl taurates, paraffin sulfonates, linear alkyl benzene sulfonates, N-acyl glutamates, alkyl sulfosuccinates, alpha sulfo fatty acid esters, alkyl ether carboxylates, alkyl phosphate esters, ethoxylated alkyl phosphate esters., alpha olefin sulphates, the alkyl ether sulfates (with 1 to 12 ethoxy groups), and mixtures thereof, wherein said surfactants contain C8 to C22 alkyl chains and wherein the counterion is selected from the group consisting of: Na, K, NH_4, $N(CH_2CH_2OH)_3$. The anionic surfactant is more preferred when selected from the group consisting of acyl isethionate, acyl sarcosinates, acyl lactylates, alkyl sulfosuccinates, alkylglycerylether sulfonates, methylacyl taurates, alkyl ether sulfates, alkyl sulfates, alkyl phosphate esters and mixtures thereof, wherein said surfactants contain has C8 to C14 alkyl chains and is present at a level of from about 8 to about 15 parts;

Amphoteric synthetic surfactants cannot serve as the sole surfactant in this product, but are preferred as a co-surfactant at a lower level of from about 1 part to about 10 parts, by weight and the more preferred types are selected from alkyl-ampho mono- and di-acetates, alkyl betaines, alkyl dimethyl amine oxides, alkyl sultaines, alkyl amidopropyl betaines, alkyl amidopropyl hydroxysultaines, and mixtures thereof, wherein said surfactants contain C8 to C22 alkyl chains.

Nonionic synthetic surfactant cannot serve as the sole surfactant in this product, but can be used as a co-surfactant at a lower level of from about 1 parts to about 15 parts , by weight. The more preferred types selected from the group consisting: alkyl glucose amides, alkyl glucose esters, polyoxyethylene amides, fatty alkane amides, alkyl amine oxides, alkyl polyglucosides, polyoxy ethylene alkyl phenols, polyoxyethylene esters of fatty acids, EO/PO block co-polymers such as polyoxamines and poloxamers, sorbitan esters and alcohol esters, and mixtures thereof.

A preferred embodiment is liquid compositions containing from 0.5 parts to 8 parts C8-C14 soap; where the soap has a counterion selected from the group consisting of K and N(CH2CH2OH)3, and mixtures thereof, in addition to the synthetic lathering surfactant.

Cationic synthetic surfactant cannot serve as the sole surfactant in this product, but are preferred as a co-surfactant at a lower level of from about 0.5 parts to about 6 parts, by weight. The more preferred types of cationic surfactants are selected from the group consisting: alkyl trimonium

chloride and methyl sulphate and mixtures thereof. These surfactants contain C12 to C24 carbon atoms per alkyl chain. The most preferred cationic is selected from the group consisting of stearalkonium chloride, stearyltrimonium chloride, Di-stearyl-dimonium chloride, and mixtures thereof. Cationic surfactants may also act as a lipid deposition aid.

WATER AND THE AQUEOUS PHASE

The moisturizing and cleansing liquid compositions of the present invention comprise water as an essential component. The water is present at a level of from about 30 parts to about 80 parts, preferably from about 40 parts to about 75 parts, and most preferably from about 40 to about 65 parts. A substantial percentage of the water forms the key part of an aqueous phase, which may also contain other water soluble components. Polyols and surfactants are water soluble.

While not being bound to any theory, the presence of a lipid in water emulsion is believed to be important to lipid deposition on the skin. The level of water is key to forming a lipid in water emulsion. Thus, an effective amount of water is required to form an aqueous phase to support the lipid in water emulsion. The level of aqueous phase to lipid is preferably greater than 2:1, more preferably greater than 3:1.

The upper range of water is adjusted to provide a desired liquid viscosity and liquid composition stability. Also enough water is required to properly process the liquid, so the lower amount of water is restricted by an ability to dispense the composition.

Optional Ingredients

A highly preferred optional component of the present compositions are one or more humectants and solutes. A variety of humectants and solutes can be employed and can be present at a level of from about 0.5 % to about 25%, more preferably from about 3.0 % to about 20 %, of a non-volatile, organic material having a solubility of a least 5 parts in 10 parts water. A preferred water soluble, organic material is selected from the group consisting of a polyol of the structure:

$$R1 - O(CH_2 - CR2HO)_nH$$

where R1 = H, C1-C4 alkyl; R2 = H, CH_3 and n = 1 - 200; C2-C10 alkane diols; guanidine; glycolic acid and glycolate salts (e.g. ammonium and quaternary alkyl ammonium); lactic acid and lactate salts (e.g. ammonium and quaternary alkyl ammonium); polyhydroxy alcohols such as sorbitol, glycerol, hexanetriol, propylene glycol, hexylene glycol and the like; polyethylene glycol; sugars and starches; sugar and starch derivatives (e.g. alkoxylated glucose); panthenol (including D-, L-, and the D,L- forms); pyrrolidone carboxylic acid; hyaluronic acid; lactamide monoethanolamine; acetamide monoethanolamine; urea; and ethanol amines of the general structure

dioxide), lakes, colorings, and the like (e.g., clove oil, menthol, camphor, eucalyptus oil,

the resultant lipid deposition decreases.

8 The perfume is added and the batch is adjusted for water loss by weighing and back adding

THREE VESSEL PROCESS

1. A portion of the available surfactants (25-50%) is added to a portion of the available water (20% - 50%), heated to 160° F (71° C), and agitated for about 20 minutes or until the surfactants are dissolved. Various (or multiples) types of surfactants (amphoteric, nonionic, cationic and anionic) are used in order to create a mixed surfactant system that maximizes Ethylene Glycol Distearate (EGDS) solubilization. The surfactant concentration is also important for this reason low water levels are used. However, high surfactant concentration negatively affects the crystallization of EGDS. Therefore a balance needs to be found between solubility and crystallization of EGDS. It is preferred to add surfactant in an order of addition according to the following: amphoteric, nonionic, anionic and cationic.

2. EGDS is added to the heated surfactant blend and allowed to dissolve and mix for about 20 to 30 minutes. Optical microscopy techniques are used to determine the time when maximum EGDS solubilization (approximately 60%) is achieved.

3. The EGDS dispersion is fast cooled using a plate and frame heat exchanger to a temperature of about 110° F to 80° F (43° C to 27° C) to form elongated EGDS crystals. The optimum freeze-out temperature is determined from the cooling curve of a DSC spectrum. Prior to passing through the heat exchanger, the temperature is maintained at 145-160° F (63-71° C) to reduce the formation of EGDS agglomerates that affect the quality of the EGDS crystals and reduce the stability of the final product.

4. In a separate vessel, the remaining water is used to dissolve and hydrate cationic polymers such as Polyquaternium 10, Merquat 550, or Jaguar. The polymer is added to cold water at medium to low agitation.

5. The solvent or any other water soluble organics such as Glycerine is added to the polymer solution to further dilute and thin the polymer solution.

6. Fatty acid flakes and Tetra Sodium EDTA are added and mixed for about 10 minutes and then heated to 160 to 170° F (71 to 77° C).

7. A caustic solution (45% active Potassium Hydroxide) is added and the mixture is agitated at a medium to high speed for 10-15 minutes until mixture is homogenous.

Alternatively, a lather grade is assigned to the amount and character of lather, based on a set of standards.

THE EXAMPLES

Examples of Formulations Stabilized with Varying EGDS Levels

Ingredients	A	B	C
Potassium Myristate	7.69	4.51	4.35
Myristic Acid	0.30	0.30	0.50
Sodium C12-14 Alkyl Glycerol Ether Sulfonate	7.55	4.42	4.27
CocoBetaine	3.48	2.86	1.97
TEA Lauroyl Sarcosinate	4.88	2.04	2.76
Ethylene Glycol Distearate	2.00	4.15	7.50
Polyquaternium 10	0.50	0.52	0.18
Petrolatum	11.60	12.02	9.36
Mineral Oil	2.90	3.01	5.13
Glycerine	6.24	6.47	6.24
Perfume	0.50	0.52	0.20
Sodium Chloride	0.84	0.64	0.47
MISC From Raw Materials	1.30	0.79	0.74
Water	50.22	57.75	56.33
Deposition	50	50	84.5
Lather			
Ultimate Volume Soil grade	6.0	5.0	5.0
Particle Size Distribution (% of Particles)			
< 5 micron	–	–	29
5-10 micron	–	–	25
10-15 micron	–	–	40
>15 micron			6

Examples A,B, C demonstrate the combination of deposition lather and product stability with 2% to 7.5% EGDS, varying the petrolatum:mineral oil ratio from 4:1 for A and B to 2:1 for C, with a total lipid level of 14.5% to 15%. Examples A, B, and C are all shelf stable. Example C demonstrates a large particle size range with over 70% of the particles over 5 microns

Preferred Examples of Products stabilized with EGDS With Varying Lipid Type, Level, and Ratios

Ingredients	D	E	F	G
Potassium Myristate	5.31	5.28	5.28	5.28
Myristic Acid	0.30	0.30	0.30	0.30
Sodium C12/14 Alkyl Ether Glycerol Sulfonate	4.45	4.4	4.4	4.4
TEA Lauroyl Sarcosinate	2.06	2.0	2.0	2.0
CocoBetaine	2.88	2.9	2.9	2.9
Ethylene Glycol Distearate	4.18	4.1	4.2	4.1

Mineral Oil	2.09	5.0	--	4.0
Polybutene	--	--	3.0	--
Glycerine	6.52	6.5	6.5	6.5
perfume	0.80	0.8	0.8	0.8
Tetrasodium EDTA	0.1	0.1	0.1	0.1
DMDM Hydantoin	0.2	0.2	0.2	0.2
Sodium Chloride	0.65	0.64	0.64	0.64
Misc.	0.79	0.79	0.79	0.79
Water	61.05	56.7	56.5	51.7
Lather (Ultimate Soil Grade)	3.5	3.5	4.5	3.5
Deposition	17	28	63	173
Lipid in Water Emulsion Dilution Stability Test	26%	34%	28%	46%
Clear Layer Separation (% of total sample) in 1 hour				
Particle Size Distribution (% of Particles)				
< 5 micron	53	48	--	35
5-10 micorn	34	43	--	35
10-15 micron	10	9	--	23
> 15 micron	3	0	--	6

Examples D, E, F, and G are preferred examples demonstrating a wide range of deposition and different ratios of petrolatum/mineral oil and petrolatum/polybutene. These formulas also have different sensory profiles. They result in a wide range of sensory attributes, from heavy to light moisturization, appealing to different set of consumers. Examples D, E, F and G are all shelf stable and have at least 40% of particles larger than 5 micron, and are not stable on dilution, bases on the Lipid in Water Emulsion Stability Test. In contrast, a currently marketed product which contains a mixture of lipids, Oil of Olay Shower Gel, does not separate on dilution in one hour.

Preferred Examples of Products Stabilized with EGDS and with Varying Lipid Types

Ingredients	**H**	**I**	**J**
Potassium Myristate	**6.0**	**6.0**	6.0
Myristic Acid	**0.3**	**0.3**	0.3
Sodium C12/14 Alkyl Ether Glycerol Sulfonate	**5.8**	**5.8**	5.8
TEA Lauroyl Sarcosinate	**2.7**	**2.7**	2.7
CocoBetaine	**3.8**	**3.8**	3.8
Ethylene Glysol Distearate	**4.2**	**4.2**	4.2
Polyquaternium 10	**0.25**	**0.25**	0.25
Petrolatum	**13.6**	**13.6**	13.6
Mineral Oil	**3.4**	--	--
Hydrogenated Polybutene	--	**3.4**	3.4
Dimethicone Fluid (MW=100,000)	--	--	3.0
Glycerine	**8.6**	**8.6**	8.6
perfume	**0.8**	**0.8**	0.8
Tetrasodium EDTA	**0.15**	**0.15**	0.15
DMDM Hydantoin	**0.4**	**0.4**	0.4
Water	**49.9**	**49.9**	46.9

Lipid in Water Emulsion Dilution Stability Test	8%	20%	
Clear Layer Separation (% of total sample) in 1 hour			
Deposition	25.9	60.6	–

Examples H, I, and J have high levels of depositon with different lipid mixtures. Example H has a 4:1 Petroltum/Mineral oil ratio, Example I has a 4:1 Petrolatum/Polybutene ratio, and Example J has a 4:1:0.9 Petrolatum/Polybutene/Dimethicone ratio. Examples H & I appear to be the best liquid compositions of this invention.

Examples of Products Stabilized with EGDS and Various Polymeric Skin Feel Agents

Ingredients	K	L	M	N
Potassium Myristate	4.35	4.35	4.35	4.35
Myristic Acid	0.50	0.50	0.50	0.50
Sodium C12/14 Alkyl Ether Glycerol Sulfonate	4.27	4.27	4.27	4.27
TEA Lauroyl Sarcosinate	2.76	2.76	2.76	2.76
CocoBetaine	1.97	1.97	1.97	1.97
Ethylene Glysol Distearate	7.50	7.5	7.50	7.50
Polyquaternium 7	0.4	0.4	–	–
Polethylene Glycol (MW 400,000)	–	–	0.05	–
Isobutlyene/ Maleic Anhydride Copolymer	–	–	–	0.1
Petrolatum	11.60	11.6	11.60	11.60
Mineral Oil	2.90	2.9	2.90	2.90
Glycerine	6.24	6.24	6.24	6.24
perfume	0.50	0.50	0.50	0.5
Sodium Chloride	0.47	0.47	0.47	0.47
NaSO4	0.0	2.0	0.0	0.0
MISC From Raw Materials	0.74	0.74	0.74	0.74
Water	55.8	53.8	56.15	54.10
Lather (Ultimate Soil Grade)	4.5	3.5	5.0	2.0
Deposition	40	20	40	–
Stability	Stable	Stable	Stable	Stable
Viscosity	2300	3000	1500	4000

Examples K, L, M, and N are all shelf stable, have good deposition, and have good lather, while providing different skin feel because of different skin feel polymers. Examples K and L contain Polyquaternium 7 and examples M and N contain Polyethylene Glycol (MW 400,000). Sodium Sulfate is added to L and Isobutylene/Maleic Anhydride Copolymer is added to N to thicken the products.

WHAT IS CLAIMED IS:

1. A lathering skin cleansing liquid composition characterized in that it comprises by *weight parts of the liquid composition*:

(a) from 5 parts to 30 parts of lipid skin moisturizing agent having a Vaughan Solubility Parameter (VSP) of between 5 and 10;

(b) from 1 part to 15 parts of C10-C22 ethylene glycol fatty acid esters;

(c) from 5 part to 30 parts of a synthetic surfactant;

(d) from 0.05 parts to 3 parts of a gel forming water dispersible anionic, nonionic, cationic or hydrophobically modified polymer selected from the group consisting of cationic polysaccharides of the cationic guar gum class with molecular weights of 1,000 to 3,000,000, anionic, cationic and nonionic homopolymers derived from acrylic and/or methacrylic acid, anionic, cationic and nonionic cellulose resins; cationic copolymers of dimethyldialkylammonium chloride and acrylic acid; cationic homopolymers of dimethyldialkylammonium chloride; cationic polyalkylene and ethoxypolyalkylene imines polyethylene glycol of molecular weight from 100,00 to 4,000,000; and mixes thereof;

(e) from 0 part to 15 part of a C8 to C14 fatty acid soap; wherein said soap has a counterion selected from the group consisting of: K, NH4, N(CH2CH2OH)3; and mixtures thereof;

(f) water; and,

wherein said synthetic surfactant and said soap has a combined CMC equilibrium surface tension value of from 15 to 50, and wherein said lathering skin cleansing liquid composition has a Lipid Deposition Value (LDV) of from 5 to 1000 μg of lipid per sq. cm of skin.

2. The lathering skin cleansing liquid composition according to Claim 1 wherein said lipid is from 10 to 25 parts by *weight of the composition; and*, wherein said lipid is selected from the group consisting of: hydrocarbon oils and waxes, silicone oils, di-glyceride oils; tri-glyceride oils, acetoglyceride esters, polyol fatty acid polyesters, lanolin and lanolin derivatives, wax esters, beeswax derivatives, vegetable waxes, sterols and phospholipids; and ; wherein said lipid has a Vaughan Solubility Parameter (VSP) of from 5 to 9 and a viscosity consistency k value of 5 poise to 5,000 poise at 35 C; and wherein said lipid has a shear index at 35°C in the range 0.1 to 0.8; and wherein said liquid composition has an LDV (Lipid Deposition Value) of 10 to 400; and

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(54) Title: CONCENTRATED DISPERSIONS CONTAINING A WATER SOLUBLE CATIONIC POLYSACCHARIDE, METHOD FOR THEIR PREPARATION AND THEIR USE IN COSMETIC COMPOSITIONS

(54) Titre: DISPERSIONS CONCENTREES COMPRENANT UN POLYSACCHARIDE CATIONIQUE HYDROSOLUBLE, LEUR PROCEDE DE PREPARATION ET LEUR UTILISATION DANS DES COMPOSITIONS COSMETIQUES

(57) Abstract

The invention discloses stable concentrated aqueous dispersions of a system constituted by at least one cationic polysaccharide soluble or dispersible in water and at least one surfactant, comprising: 0.5 to 30 wt.%, preferably 10 to 30 wt.%, of cationic polysaccharide particles soluble or dispersible in water (Pcat); 20 to 50 wt.%, expressed as dry matter, of a surfactant (TA); a hydrocarbon compound (OH) comprising at least one hydroxyl grouping, with a molar weight of less than 1000, in an amount corresponding to 0.1 to 10 parts by weight per part of polymer (Pcat); 0 to 10 wt.% of a water soluble inorganic salt (Sinorg); 0 to 1 wt.% of a stabilising agent (Stab); 5 to 50 wt.% of water (W). The invention also discloses a method for their preparation, comprising the addition of a premix (A) free from water and consisting of a cationic polysaccharide (Pcat) in powder form and of a hydrocarbon compound (OH) in liquid form, to a premix (B) with a viscosity less than 50000 mPa.s., consisting of water, of a surfactant (TA), optionally of a water soluble inorganic salt (Sinorg), optionally of a stabilising agent (Stab) and optionally of a hydrocarbon compound (OH). The invention also concerns their use in the preparation of cosmetic compositions, and cosmetic compositions containing them.

(57) Abrégé

Dispersions aqueuses concentrées stables d'un système constitué d'au moins un polysaccharide cationique hydrosoluble ou hydrodispersable et d'au moins un agent tensio-actif, comprenant: de 0,5 à 30 % en poids, de préférence de 10 à 30 % en poids, de particules de polysaccharide cationique hydrosoluble ou hydrodisperable (Pcat); de 20 à 50 % en poids, exprimé en matière sèche, d'agent tensio-actif (TA); un composé hydrocarboné (OH) comportant au moins un groupement hydroxyle, de masse moléculaire inférieure à 1000, en quantité correspondant à 0,1 à 10 parties en poids par partie de polymère (Pcat); de 0 à 10 % en poids d'un sel inorganique hydrosoluble (Sinorg); de 0 à 1 % en poids d'un agent stabilisant (Stab); de 5 à 50 % d'eau (W). Leur procédé de préparation par addition d'un prémélange (A) exempt d'eau et constitué de polysaccharide cationique (Pcat) sous la forme d'une poudre et de composé hydrocarboné (OH) sous forme liquide, à un prémélange (B) présentant une viscosité inférieure à 50 000 mPa.s., constitué d'eau, d'agent tensio-actif (TA), éventuellement de sel inorganique hydrosoluble (Sinorg), éventuellement d'agent stabilisant (Stab) et éventuellement de composé hydrocarboné (OH). Leur utilisation pour la préparation de compositions cosmétiques et compositions cosmétiques les contenant.

. les amides d'acides gras en C_8-C_{20};

. les acides gras éthoxylés ;

. les amides gras éthoxylés ;

. les amines éthoxylées ;

. les amidoamines éthoxylées, en particulier celles dérivées des N-hydroxyéthyl N'-alkylamide éthylène diamines.

- les agents tensioactifs cationiques comme les halogénures d'alkyltriméthylammonium, les halogénures de dialkyldiméthylammonium, les halogénures d'alkyldiméthyl-benzylammonium, les halogénures d'alkyldiméthyléthylammonium ...

- les agents tensioactifs amphotères et zwitterioniques comme

. les alkylbétaïnes, les alkyldiméthylbétaïnes, les alkylamidopropylbétaines, les alkylamidopropyldiméthylbétaïnes, les alkyltriméthyl-sulfobétaïnes, les dérivés d'imidazoline tels que les alkylamphoacétates, alkylamphodiacétates, alkylampho-propionates, alkylamphodipropionates, les alkylsultaïnes ou les alkylamidopropyl-hydroxysultaïnes, les produits de condensation d'acides gras et d'hydrolysats de protéines, les dérivés amphotères d'alkylpolyamines comme l'AMPHOLIC XL commercialisé par RHONE-POULENC, les AMPHOLAC 7T/X et AMPHOLAC 7C/X commercialisés par BEROL NOBEL.

D'une manière préférentielle les agents tensio-actifs (TA) sont choisis parmi ceux de type anionique comme les alkylsulfates et/ou alkyléther sulfates et/ou alkyltaurates, de préférence associés à au moins un tensio-actif de type amphotère comme les alkylbétaines et/ou alkylamidopropylbétaines et/ou alkylamphoacétates ou diacétates.

Parmi les composés organiques (OH) à groupement hydroxyle, on peut mentionner

- les mono ou polyalcools, tels que les monoalcools aliphatiques contenant de 1 à 12 atomes de carbone comme l'éthanol, le propanol, l'hexanol, les diols aliphatiques contenant de 1 à 6 atomes de carbone comme l'éthylèneglycol, le propylène glycol, l'hexylène glycol, les polyols aliphatiques comme le glycérol, le sorbitol, le pentaerythritol, les polyalkylènes glycols de masse moléculaire inférieure à 1000

- les sucres tels que les hexoses ou pentoses comme le glucose, le galactose, le mannose, les disaccharides comme le saccharose, le lactose ou leurs mélanges.

D'un manière préférentielle, ledit composé organique (OH) est choisi parmi les polyols aliphatiques, et tout particulièrement le propylène glycol, l'héxylène glycol, le glycérol.

Parmi les sels inorganiques hydrosolubles (Sinorg), on peut mentionner le chlorure de sodium, le sulfate de sodium, le sulfate d'ammonium.

Parmi les agents stabilisants (Stab) éventuels, on peut mentionner tout particulièrement la gomme xanthane, le succinoglycane ...

hydroxypropyl-guars. On peut aussi ajouter alternativement ou en association des polymères synthétiques comme les polyacrylates ou des polymères cationiques synthétiques, connus sous le nom générique CTFA de "Polyquaternium", par exemple les polymères MIRAPOL A15 ou MIRAPOL 550 de la société RHONE-POULENC. On peut également ajouter des dérivés de silicone, en particulier des polydialkylsiloxanes de haute masse moléculaire, ces produits étant présents sous forme de dispersions.

D'autres agents humectants ou hydratants peuvent être constitués par certains carbohydrates (glycerol, sorbitol par exemple), des polyethylènes glycols ou polypropylène glycols, des dérivés alcoxylés des sucres ou de leurs dérivés (méthyl glucose par exemple), l'urée, la gélatine, l'aloe vera, l'acide hyaluronique ...

Les performances des compositions cosmétiques faisant l'objet de l'invention peuvent aussi être améliorées par l'emploi d'agents plastifiants. L'agent plastifiant pourra constituer entre 0,1 à 20% de la formulation, de préférence de 1 à 15%. Parmi les agents plastifiants particulièrement utiles, on peut citer les adipates, les phtalates, les isophtalates, les azélates, les esters méthyliques et/ou éthyliques d'acides en C_4-C_8, les stéarates, les copolyols silicones, les glycols, l'huile de ricin, ou leurs mélanges.

Ces compositions cosmétiques peuvent aussi contenir des agents tensioactifs en supplément de celui ou ceux présent(s) dans la dispersion (D.S.C.Pcat) ; ceux-ci servent à disperser, émulsionner, solubiliser, stabiliser divers composés utilisés pour leurs propriétés émollientes ou humectantes. Les agents tensioactifs sont utilisés dans ces compositions à des concentrations variant de 0,05 à 50 % en poids de la préparation. Ces tensioactifs anioniques, non-ioniques, cationiques, zwitterioniques ou amphotères ou des mélanges de ces tensioactifs peuvent être de même nature que ceux déjà mentionnés ci-dessus comme agents tensio-actifs (TA) présents dans la dispersion (D.S.C.Pcat).

Les agents tensio-actifs amphotères et zwitterioniques peuvent être utilisés pour diminuer l'irritation provoquée par les autres agents tensioactifs, principalement les agents tensioactifs anioniques.

On peut aussi avantageusement ajouter à ces compositions des agents séquestrants des métaux, plus particulièrement ceux séquestrants du calcium comme les ions citrates.

Peuvent aussi être présents des agents émollients comme les silicones ou des huiles ou corps gras utilisés à ce propos dans l'industrie cosmétique.

Les émollients sont généralement choisis parmi les alkylmonoglycérides, les alkyldiglycérides, les triglycérides comme les huiles extraites des plantes et des végétaux (huiles de palme, de coprah, de graine de coton, de soja, de tournesol, d'olive, de pépin de raisin, de sésame, d'arachide, de ricin...) ou les huiles d'origine animale (suif, huiles de poisson....), des dérivés de ces huiles comme les huiles hydrogénées

les dérivés de la lanoline, les huiles minérales ou les huiles paraffiniques, le perhydrosqualane, le squalène, les diols comme le 1-2-propanediol, le 1-3-butanediol, l'alcool cétylique, l'alcool stéarylique, l'alcool oléique, les polyéthylèneglycols ou polypropylèneglycols, les esters gras comme le palmitate d'isopropyle, le cocoate d'éthyl-2-hexyle, le myristyl myristate, les esters de l'acide lactique, l'acide stéarique, l'acide béhennique, l'acide isostéarique, les huiles silicones regroupant les polydiméthylsiloxanes cycliques, les polydiméthylsiloxanes α-ω hydroxylées, les polydiméthylsiloxanes α-ω triméthylsilylés, les polyorganosiloxanes comme les polyalkylméthylsiloxanes, les polyméthylphénylsiloxanes, les polydiphénylsiloxanes, les dérivés aminés des silicones, les cires silicones, les silicones copolyéthers (comme l'huile SILBIONE 70646 commercialisée par la société RHONE-POULENC ou la DC 190 commercialisée par DOW CORNING) ou les dérivés mixtes de silicones incluant différents types de dérivatisation (comme les copolymères mixtes polyalkylméthylsiloxanes-silicones copolyéthers).

Pour protéger la peau ou les cheveux des agressions du soleil et des rayons UV, on peut ajouter à ces formulations des filtres solaires qui sont soit des composés chimiques absorbant fortement le rayonnement UV comme les composés autorisés dans la directive Européenne N° 76/768/CEE, ses annexes et les modifications ultérieures de cette directive soit le dioxyde de titane ou les oxydes de cérium sous forme de poudre ou de particules colloïdales. Ces poudres peuvent éventuellement être traitées en surface pour augmenter l'efficacité de leur action anti-UV ou pour faciliter leur incorporation dans les formulations cosmétiques ou pour inhiber la photoréactivité de surface.

A ces composés, on peut ajouter en association des poudres ou des particules minérales comme du carbonate de calcium, des oxydes minéraux sous forme de poudre ou sous forme colloidale (particules de taille inférieure ou de l'ordre de un micromètre, parfois de quelque dizaines de nanomètres) comme du dioxyde de titane, de la silice, des sels d'aluminium utilisés généralement comme antitranspirants, du kaolin, du talc, des argiles et leurs dérivés ...

On peut aussi incorporer dans la composition des agents bactéricides ou fongicides afin d'améliorer la désinfection de la peau, comme par exemple le triclosan.

Des agents conservateurs comme les méthyl, éthyl, propyl et butyl esters de l'acide p-hydroxybenzoïque, le benzoate de sodium, le GERMABEN (nom de marque) ou tout agent chimique évitant la prolifération bactérienne ou des moisissures et utilisé traditionnellement dans les compositions cosmétiques sont généralement introduits dans ces compositions à hauteur de 0,01 à 3 % en poids. La quantité de ces produits est généralement ajustée pour éviter toute prolifération de bactéries, moisissures ou levures dans les compositions cosmétiques.

Exemple 4

Mise en oeuvre de la dispersion concentrée comprenant du guar cationique (D.C.S.Pcat) de l'exemple 3 dans une préformulation de shampoing.

Une formulation shampoing est préparée par addition sous agitation à l'aide d'une pale cadre, à température ambiante de 330g la dispersion (D.C.S.Pcat) de l'exemple 3 à 670g d'eau désionisée. Après 5 minutes d'agitation, le pH du mélange est ajusté à 6 avec de l'acide citrique.

On obtient une solution fluide dont la viscosité (Brookfield, sp4, 10tours/minutes) est la suivante

temps	viscosité mPa.s.
5 heures	1620
24 heures	2730

Une formulation shampoing comparative de composition suivante est préparée de façon conventionnelle.

La poudre de JAGUAR C14S est introduite lentement dans l'eau (saupoudrage) sous forte agitation (pale défloculeuse) ; 5 minutes après la fin de l'introduction de poudre de JAGUAR C14S, on ajoute sous agitation 3 gouttes d'acide citrique (solution à 30%) afin d'hydrater le JAGUAR C14S. Le milieu est laissé sous agitation pendant 20 minutes. On ajoute ensuite l'agent tensioactif, puis l'hexylène glycol et le sel. Le pH est ensuite réajusté à 6.

ingrédients	g/100g
JAGUAR C14S	0,9
EMPICOL ESB 70	17,6
hexylène glycol	3
chlorure de sodium	2,9
eau désionisée	qsp 100
temps	**viscosité mPa.s.**
5 heures	2340
24 heures	2900

On constate que la formulation shampoing obtenue à l'aide de la dispersion (D.C.S.Pcat) de l'exemple 3 ne présente pas de différence significative par rapport à la formulation shampoing obtenue de façon conventionnelle.

REVENDICATIONS

1) Dispersions aqueuses concentrées (D.C.S.Pcat) stables d'un système constitué d'au moins un polysaccharide cationique hydrosoluble ou hydrodispersable et d'au moins un agent tensio-actif, caractérisées en ce qu'elles comprennent

- de l'ordre de 0,5 à 30% en poids, de préférence de l'ordre de 10 à 30% en poids, de particules d'au moins un polysaccharide cationique hydrosoluble ou hydrodispersable (Pcat)
- de l'ordre de 20 à 50% en poids, exprimé en matière sèche d'au moins un agent tensio-actif (TA)
- au moins un composé hydrocarboné (OH) comportant au moins un groupement hydroxyle, de masse moléculaire inférieure à 1000, en quantité correspondant à environ 0,1 à 10, de préférence environ 0,5 à 5 parties en poids par partie de polymère (Pcat)
- de l'ordre de 0 à 10%, de préférence de l'ordre de 2 à 6% en poids d'un sel inorganique hydrosoluble (Sinorg)
- de 0 à environ 1%, de préférence de l'ordre de 0,25 à 0,75% en poids d'un agent stabilisant (Stab)
- de l'ordre de 5 à 50% d'eau (W).

2) Dispersions aqueuses concentrées (D.C.S.Pcat) selon la revendication 1), caractérisées en ce que le polysaccharide cationique hydrosoluble ou hydrodispersable (Pcat) est un dérivé cationique hydrosoluble ou hydrodispersable d'un polysaccharide naturel d'origine animale ou végétale ou hémisynthétique.

3) Dispersions aqueuses concentrées (D.C.S.Pcat) selon la revendication 1) ou 2), caractérisées en ce que le polysaccharide cationique hydrosoluble ou hydrodispersable (Pcat) présente une masse moléculaire d'au moins 20 000, de préférence de l'ordre de de 200 000 à 3 000 000.

4) Dispersions aqueuses concentrées (D.C.S.Pcat) selon l'une quelconque des revendication 1) à 3), caractérisées en ce que le polysaccharide cationique hydrosoluble ou hydrodispersable (Pcat) est un dérivé cationique du guar.

5) Dispersions aqueuses concentrées (D.C.S.Pcat) selon l'une quelconque des revendication 1) à 4), caractérisées en ce que le polysaccharide cationique hydrosoluble ou hydrodispersable (Pcat) est du chlorure d'hydroxypropyltrimonium guar ou du chlorure d'hydroxypropyltrimonium hydroxypropyl guar.

6) Dispersions aqueuses concentrées (D.C.S.Pcat) selon l'une quelconque des revendication 1) à 5), caractérisées en ce que le ou les agent(s) tensio-actif(s) (TA) est (sont) choisi(s) parmi les agents tensio-actifs anioniques, non-ioniques, cationiques, amphotères ou zwitterioniques.

7) Dispersions aqueuses concentrées (D.C.S.Pcat) selon l'une quelconque des revendication 1) à 6), caractérisées en ce que le ou les agent(s) tensio-actif(s) (TA) est (sont) choisi(s) parmi les agents tensio-actifs anioniques, éventuellement associé(s) à au moins un agent tensio-actif amphotère.

8) Dispersions aqueuses concentrées (D.C.S.Pcat) selon l'une quelconque des revendication 1) à 7), caractérisées en ce que le ou les agent(s) tensio-actif(s) (TA) est (sont) choisi(s) parmi les alkylsulfates et/ou alkyléther sulfates et/ou alkyltaurates, éventuellement associé(s) à au moins une alkylbétaine et/ou une alkylamidopropylbétaine et/ou un alkylamphoacétate ou diacétate.

9) Dispersions aqueuses concentrées (D.C.S.Pcat) selon l'une quelconque des revendication 1) à 8), caractérisées en ce que le composé organique (OH) à groupement hydroxyle, est un monoalcool, un polyalcool ou un sucre, de masse moléculaire inférieure à 1000.

10) Dispersions aqueuses concentrées (D.C.S.Pcat) selon l'une quelconque des revendication 1) à 9), caractérisées en ce que le composé organique (OH) à groupement hydroxyle, est un monoalcool aliphatique contenant de 1 à 12 atomes de carbone, un diol aliphatique contenant de 1 à 6 atomes de carbone, un polyol aliphatique ou un polyalkylène glycol de masse moléculaire inférieure à 1000.

11) Dispersions aqueuses concentrées (D.C.S.Pcat) selon l'une quelconque des revendication 1) à 10), caractérisées en ce que le composé organique (OH) à groupement hydroxyle, est du propylène glycol, de l'héxylène glycol, du glycérol.

12) Dispersions aqueuses concentrées (D.C.S.Pcat) selon l'une quelconque des revendication 1) à 11), caractérisées en ce que le sel inorganique hydrosoluble (Sinorg), est du chlorure de sodium, du sulfate de sodium, du sulfate d'ammonium.

13) Dispersions aqueuses concentrées (D.C.S.Pcat) selon l'une quelconque des revendication 1) à 12), caractérisées en ce que l'agent stabilisant (Stab) éventuel est de la gomme xanthane ou du succinoglycane

14) Procédé de préparation de dispersions aqueuses concentrées stables (D.C.S.Pcat) d'un système constitué d'au moins un polysaccharide cationique hydrosoluble ou hydrodispersable et d'au moins un agent tensio-actif, caractérisé par l'addition d'un prémélange (A) à un prémélange (B),

- ledit prémélange (A) étant exempt d'eau et constitué d'au moins un polysaccharide cationique (Pcat) hydrosoluble ou hydrodispersable mis en oeuvre sous la forme d'une poudre et d'au moins un composé hydrocarboné (OH) sous forme liquide de masse moléculaire inférieure à 1000 comportant au moins un groupement hydroxyle,
- ledit prémélange (B) présentant une viscosité inférieure à 50 000 mPa.s., et étant constitué d'eau, d'au moins un agent tensio-actif (TA), éventuellement d'un sel inorganique hydrosoluble (Sinorg), éventuellement d'au moins un agent stabilisant (Stab) et éventuellement d'un composé hydrocarboné (OH) sous forme liquide de masse moléculaire inférieure à 1000 comportant au moins un groupement hydroxyle, ledit prémélange (B) présentant un pH tel qu'il ne soit pas susceptible d'hydrater le polysaccharide cationique (Pcat),

les quantités relatives des différents constituants des prémélanges (A) et (B) étant, pour 100 parties en poids de l'ensemble des constituants,

- de l'ordre de 0,5 à 30 parties en poids, de préférence de l'ordre de 10 à 30 parties en poids, d'au moins un polysaccharide cationique hydrosoluble ou hydrodispersable (Pcat)
- de l'ordre de 20 à 50 parties en poids, exprimées en matière sèche d'au moins un agent tensio-actif (TA)
- de l'ordre de 0 à 10 parties, de préférence de l'ordre de 2 à 6 parties en poids d'un sel inorganique hydrosoluble (Inorg)
- de 0 à environ 1 partie, de préférence de l'ordre de 0,25 à 0,75 partie en poids d'un agent stabilisant (Stab)
- de l'ordre de 5 à 50 parties en poids d'eau (W)

la quantité de composé hydrocarboné (OH) de masse moléculaire inférieure à 1000 comportant au moins un groupement hydroxyle correspondant à environ 0,1 à 10, de préférence de l'ordre de 0,5 à 5 parties en poids par partie de polysaccharide cationique (Pcat), au moins 0,5 partie en poids par partie de polysaccharide cationique (Pcat) dudit composé hydrocarboné (OH) étant présent dans le prémélange (A).

15) Procédé selon la revendication 14), caractérisé en ce que le polysaccharide cationique hydrosoluble ou hydrodispersable (Pcat) est un dérivé cationique hydrosoluble ou hydrodispersable d'un polysaccharide naturel d'origine animale ou végétale ou hémisynthétique.

16) Procédé selon la revendication 14) ou 15), caractérisé en ce que le polysaccharide cationique hydrosoluble ou hydrodispersable (Pcat) présente une masse moléculaire d'au moins 20 000, de préférence de l'ordre de de 200 000 à 3 000 000.

17) Procédé selon l'une quelconque des revendication 14) à 16), caractérisé en ce que le polysaccharide cationique hydrosoluble ou hydrodispersable (Pcat) est un dérivé cationique du guar.

18) Procédé selon l'une quelconque des revendication 14) à 17), caractérisé en ce que le polysaccharide cationique hydrosoluble ou hydrodispersable (Pcat) est du chlorure d'hydroxypropyltrimonium guar ou du chlorure d'hydroxypropyltrimonium hydroxypropyl guar.

19) Procédé selon l'une quelconque des revendication 14) à 18), caractérisé en ce que le ou les agent(s) tensio-actif(s) (TA) est (sont) choisi(s) parmi les agents tensio-actifs anioniques, non-ioniques, cationiques, amphotères ou zwitterioniques.

20) Procédé selon l'une quelconque des revendication 14) à 19), caractérisé en ce que le ou les agent(s) tensio-actif(s) (TA) est (sont) choisi(s) parmi les agents tensio-actifs anioniques, éventuellement associé(s) à un au moins un agent tensio-actif amphotère.

21) Procédé selon l'une quelconque des revendication 14) à 20), caractérisé en ce que le ou les agent(s) tensio-actif(s) (TA) est (sont) choisi(s) parmi les alkylsulfates et/ou alkyléther sulfates et/ou alkyltaurates, éventuellement associé(s) à un au moins une alkylbétaine et/ou une alkylamidopropylbétaine et/ou un alkylamphoacétate ou diacétate.

22) Procédé selon l'une quelconque des revendication 14) à 21), caractérisé en ce que le composé organique (OH) à groupement hydroxyle, est un monoalcool, un polyalcool ou un sucre, de masse moléculaire inférieure à 1000.

23) Procédé selon l'une quelconque des revendication 14) à 22), caractérisé en ce que le composé organique (OH) à groupement hydroxyle, est un monoalcool aliphatique contenant de 1 à 12 atomes de carbone, un diol aliphatique contenant de 1 à 6 atomes de carbone ou un polyol aliphatique, un polyalkylène glycol de masse moléculaire inférieure à 1000

24) Procédé selon l'une quelconque des revendication 14) à 23), caractérisé en ce que le composé organique (OH) à groupement hydroxyle, est du propylène glycol, de l'héxylène glycol, du glycérol.

25) Procédé selon l'une quelconque des revendication 14) à 24), caractérisé en ce que le sel inorganique hydrosoluble (Sinorg), est du chlorure de sodium, du sulfate de sodium, du sulfate d'ammonium.

26) Procédé selon l'une quelconque des revendication 14) à 25), caractérisé en ce que l'agent stabilisant (Stab) éventuel est de la gomme xanthane ou du succinoglycane.

27) Utilisation des dispersions aqueuses concentrées (D.C.S.Pcat) faisant l'objet de l'une quelconque des revendication 1) à 13) ou susceptibles d'être obtenues selon le procédé faisant l'objet de l'une quelconque des revendications 14) à 26), pour la préparation de compositions cosmétiques liquides ou solides, en quantité de l'ordre de 0,1 à 3 parties en poids de polysaccharide cationique (Pcat) pour 100 parties en poids de composition cosmétique.

28) Utilisation selon la revendication 27) pour la préparation de compositions cosmétiques liquides ou solides dans le domaine capillaire, de l'hygiène corporelle ou de l'hygiène buccale.

29) Compositions cosmétiques, notamment dans le domaine capillaire, de l'hygiène corporelle ou de l'hygiène buccale, comprenant les dispersions aqueuses concentrées (D.C.S.Pcat) faisant l'objet de l'une quelconque des revendication 1) à 13) ou susceptibles d'être obtenues selon le procédé faisant l'objet de l'une quelconque des revendications 14) à 26), en quantité de l'ordre de 0,1 à 3 parties en poids de polysaccharide cationique (Pcat) pour 100 parties en poids de composition cosmétique.

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SUPERINTENDENCIA DE INDUSTRIA Y COMERCIO

DIVISION DE NUEVAS CREACIONES

375.
2005/03/03

2020
Bogotá, D.C., Febrero 22 de 2005

Doctora
ALICIA LLOREDA

ASUNTO	Radicación No.	00 023 951
	Trámite	002
	Evento	001 12259
	Actuación	430
	Oficio No.	
	Folios	0

Como resultado del examen de patentabilidad de la solicitud de patente de invención, realizado según lo establece el artículo 45 de la Decisión 486 de la Comisión de la Comunidad Andina, se notifica el siguiente concepto técnico:

1. Documentos estudiados

Para el presente estudio se tuvieron en cuenta el capítulo descriptivo comprendido en los folios 6 a 31 y el nuevo capítulo reivindicatorio de los folios 108 a 110 de la solicitud en estudio.

2. Objeto de la Invención

El objeto de la presente solicitud de patente de invención consiste en:

Las reivindicaciones 1 a 12 se refieren a una composición que contiene (a) un tensioactivo (aniónico, anfótero, no iónico ó mezclas); (b) un polímero catiónico; (c) un agente benéfico para la piel y (d) un agente benéfico para la piel soluble en agua (glicerol, sorbitol, polialquilenglicol).

La reivindicación 13 se refiere a un proceso para aumentar la deposición de gotas de aceite que consiste en combinarlas con un polímero catiónico.

El problema planteado en esta solicitud es la necesidad de proporcionar composiciones líquidas acuosas en las cuales los agentes benéficos son pequeñas partículas que están establemente suspendidas y luego depositadas sobre la piel, después de la dilución con agua.

Para resolver este problema técnico la solicitud en estudio proporciona una composición que contiene (a) un tensioactivo (aniónico, anfótero, no iónico ó mezclas); (b) un polímero catiónico; (c) un agente benéfico para la piel y (d) un agente benéfico para la piel soluble en agua (glicerol, sorbitol, polialquilenglicol).

El objeto de la invención definido anteriormente se clasificó de acuerdo con la IPC: A 61 K 7/48.

También se reivindica prioridad de la Solicitud de Patente de los Estados Unidos No. 09 286 041 del 5 de abril de 1999, con respecto a la cual la fecha de presentación de la actual solicitud cumple el plazo máximo permitido.

3. Determinación del Estado de la Técnica

El artículo 16 de la decisión 486 de la comisión de la Comunidad Andina que establece que "*El estado de la técnica comprenderá todo lo que haya sido accesible al publico por una descripción escrita u oral, utilización, comercialización o cualquier otro medio antes de la fecha de presentación de la solicitud de patente o, en su caso, de la prioridad reconocida.*

Solo para el efecto de la determinación de la novedad, también se considerará dentro del estado de la técnica, el contenido de una solicitud de patente en trámite ante la oficina nacional competente, cuya fecha de presentación o de prioridad fuese anterior a la fecha de presentación o de prioridad de la solicitud de patente que se estuviese examinando, siempre que dicho contenido esté incluido en la solicitud de fecha anterior cuando ella se publique o hubiese transcurrido el plazo previsto en el articulo 40".

Considerando que la fecha de presentación de la primera solicitud de patente de la cual se reivindica prioridad es 5 de abril de 1999, se consultaron las bases de datos y los archivos con que cuenta la entidad con fecha de publicación anterior y se encontraron los siguientes documentos que anticipan el objeto de esta solicitud:

No.	Documento	Título	Fecha de Publicación
D1	EP 0 468 721	Composición de Shampoo	Ene 29, 1992
D2	WO 96 17592	Limpiador de la piel autoestable con polímero formador de gel, lípido y éster de ácido graso de etilenglicol cristalino	Jun 13, 1996
D3	WO 97 49376	Dispersiones concentradas que contienen un polisacárido catiónico soluble en agua, método para su preparación y su uso en composiciones cosméticas	Dic 31 de 1997

4. Evaluación de los requisitos de Patentabilidad

El artículo 14 de la Decisión 486 de la Comisión de la Comunidad Andina establece que "*Los Países Miembros otorgarán patentes para las invenciones, sean de producto o de procedimiento, en todos los campos de la tecnología, siempre que sean nuevas, tengan nivel inventivo y sean susceptibles de aplicación industrial".*

En cumplimiento del artículo 14 de la Decisión 486, se procedió a evaluar el cumplimiento de los requisitos de novedad, nivel inventivo y aplicación industrial, con el fin de establecer la patentabilidad de la invención reivindicada en la solicitud en estudio.

Evaluación del Nivel Inventivo

El artículo 18 de la Decisión 486 de la Comisión de la Comunidad Andina establece que *Se considerará que una invención tiene nivel inventivo, si para una persona del oficio normalmente versada en la materia técnica correspondiente, esa invención no hubiese resultado obvia ni se hubiese derivado de manera evidente del estado de la técnica*.

Las reivindicaciones 1 a 12 se refieren a una composición que contiene (a) un tensioactivo (aniónico, anfótero, no iónico ó mezclas); (b) un polímero catiónico; (c) un agente benéfico para la piel y (d) un agente benéfico para la piel soluble en agua (glicerol, sorbitol, polialquilenglicol).

La reivindicación 13 se refiere a un proceso para aumentar la deposición de gotas de aceite que consiste en combinarlas con un polímero catiónico.

D1 enseña una composición que contiene (a) un tensioactivo (aniónico, anfótero, no iónico ó mezclas); (b) un polímero catiónico; (c) un agente benéfico para la piel y (d) un agente benéfico para la piel soluble en agua (polioles).

D2 enseña una composición estable que contiene (a) un tensioactivo (aniónico, anfótero, no iónico ó mezclas); (b) un polímero catiónico; (c) un agente benéfico para la piel y opcionalmente (d) un agente benéfico para la piel soluble en agua (polioles).

D3 enseña una composición que contiene (a) un tensioactivo (aniónico, anfótero, no iónico ó mezclas); (b) un polímero catiónico; (c) un agente benéfico para la piel y (d) un agente benéfico para la piel soluble en agua (polioles).

Comparando el objeto de la solicitud: una composición que contiene (a) un tensioactivo (aniónico, anfótero, no iónico ó mezclas); (b) un polímero catiónico; (c) un agente benéfico para la piel y (d) un agente benéfico para la piel soluble en agua (glicerol, sorbitol, polialquilenglicol); con el estado de la técnica: D1 que enseña una composición que contiene (a) un tensioactivo (aniónico, anfótero, no iónico ó mezclas); (b) un polímero catiónico; (c) un agente benéfico para la piel y (d) un agente benéfico para la piel soluble en agua (polioles); D2 que enseña una composición que contiene (a) un tensioactivo (aniónico, anfótero, no iónico ó mezclas); (b) un polímero catiónico; (c) un agente benéfico para la piel y (d) un agente benéfico para la piel soluble en agua (polioles); D3 que enseña una composición que contiene (a) un tensioactivo (aniónico, anfótero, no iónico ó mezclas); (b) un polímero catiónico; (c) un agente benéfico para la piel y (d) un agente benéfico para la piel soluble en agua (polioles); se observa que las reivindicaciones de esta solicitud no mencionan una característica que conceda un efecto diferente o especial a las composiciones, así que estas son obvias y evidentes para una persona versada en la materia.

Se observa que la combinación de tan solo dos de estas anterioridades, como p. ej. D1 y D2, ó D1 y D3 ó D2 y D3 sugiere la composición que contiene (a) un tensioactivo (aniónico, anfótero, no iónico ó mezclas); (b) un polímero catiónico; (c) un agente benéfico para la piel y (d) un agente benéfico para la piel soluble en agua (glicerol, sorbitol, polialquilenglicol). Las reivindicaciones no mencionan una característica que conceda un efecto diferente o especial a la composición, así que esta es obvia y evidente para una persona versada en

la materia. Entonces debido a que: (a) la conformación de la composición de esta solicitud, a partir de las anterioridades, es evidente para una persona conocedora de la materia; porque las anterioridades sugieren una composición que contiene (1) un tensioactivo; (2) un polímero catiónico; (3) un agente benéfico para la piel y (4) un agente benéfico para la piel (poliol), para una persona conocedora de la materia era evidente el elaborar la composición de esta solicitud de manera similar; (b) las reivindicaciones de esta solicitud no mencionan una característica que conceda un efecto diferente o especial a las composiciones, que pueda considerarse como un aporte a la técnica, porque las anterioridades ya enseñaban una composición que contiene (1) un tensioactivo; (2) un polímero catiónico; (3) un agente benéfico para la piel y (4) un agente benéfico para la piel (poliol), así que estas son obvias para una persona versada en la materia y (c) el problema planteado en esta solicitud era la necesidad de proporcionar composiciones líquidas acuosas en las cuales los agentes benéficos son pequeñas partículas que están establemente suspendidas y luego depositadas sobre la piel, después de la dilución con agua; y puesto que para resolver este problema técnico la solicitud proporciona (a) un tensioactivo (aniónico, anfótero, no iónico ó mezclas); (b) un polímero catiónico; (c) un agente benéfico para la piel y (d) un agente benéfico para la piel soluble en agua (glicerol, sorbitol, polialquilenglicol) de la misma manera que enseñaban las anterioridades D1 a D3; esta solicitud no tiene **nivel inventivo**.

Con referencia al proceso para aumentar la deposición de gotas de aceite, de la reivindicación 13, se observa que puesto que las anterioridades ya enseñaban la combinación de estas con un polímero catiónico, es obvio que el resultado obtenido, es decir el aumento de la deposición de gotas de aceite, ya se había verificado previamente. De manera que el "proceso" reivindicado no tiene **nivel inventivo**.

5. Conclusión

En conclusión, los requisitos de patentabilidad de la presente solicitud están afectados así:

Item	Documento	Reivindicaciones afectadas	Requisito que afecta
D1	EP 0 468 721	1 a 13	Nivel inventivo
D2	WO 96 17592	1 a 13	Nivel inventivo
D3	WO 97 49376	1 a 13	Nivel inventivo

En cumplimiento del artículo 45 de la Decisión 486 de la Comisión de la Comunidad Andina, se le indica que debe dar respuesta dentro del término de sesenta días contados a partir de la fecha de la notificación de la presente comunicación. En caso de no dar respuesta al presente requerimiento o si a pesar de la respuesta subsistieran los impedimentos para la concesión, se denegará la patente.

Notifíquese el presente oficio conforme a lo dispuesto en el numeral 5.2, literal e), del capítulo quinto del título primero de la Circular Unica No. 10 de 2001.

ALIX CARMENZA CÉSPEDES DE VERGEL
Jefe de la División de Nuevas Creaciones.

El anterior requerimiento fue notificado por fijación en lista, de fecha 03 MAR. 2005

CONCEPTO TÉCNICO No. 299	EXAMINADOR TÉCNICO Código 202007