



(51) International Patent Classification:

A61K 8/97 (2017.01)

A61Q 5/02 (2006.01)

(21) International Application Number:

PCT/CN2017/088549

(22) International Filing Date:

16 June 2017 (16.06.2017)

(25) Filing Language:

English

(26) Publication Language:

English

(71) Applicants: **BEIERSDORF DAILY CHEMICAL (WUHAN) CO., LTD.** [CN/CN]; No. 512, Dongfeng Road, Wuhan Economic and Technological Development Zone, Wuhan 430056 (CN). **BEIERSDORF AG** [DE/DE]; Unnastrasse 48, 20253 Hamburg (DE).

(72) Inventors: **JIANG, Lei**; 11-1-501 Hankouhuayuan, Hou Hu Road, Jiangnan zone, Wuhan, Hubei 430014 (CN). **DONG, Chaochun**; Room 402, Unit 3 Building 8, Yangguanglijing Residential Area, Hanyang District, Wuhan, Hubei 430056 (CN). **WANG, Yabin**; 27-503, Changqing Garden, Dongxihu Zone, Wuhan, Hubei 430056 (CN). **WANG, Tan**; 307-4, Tingtaoguanhai, Fengshuyilu, Zuankou, Wuhan, Hubei 430056 (CN). **BAO, Zhaoxia**; Room 101, Unit 2, Building 3, Beihaiwan, 701 Institute, Zhangzhidong Road 268, Wuhan, Hubei 430070 (CN). **HONG, Xiaopeng**; 19-2-102, Houhu Garden, Wuhan, Hubei 430013 (CN).

(74) Agent: **CHINA SINDA INTELLECTUAL PROPERTY LTD.**; B11th Floor, Focus Place, 19 Financial Street, Xicheng District, Beijing 100033 (CN).

(81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AO, AT, AU, AZ, BA, BB, BG, BH, BN, BR, BW, BY, BZ, CA, CH, CL, CN, CO, CR, CU, CZ, DE, DJ, DK, DM, DO, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT, HN, HR, HU, ID, IL, IN, IR, IS, JO, JP, KE, KG, KH, KN, KP, KR, KW, KZ, LA, LC, LK, LR, LS, LU, LY, MA, MD, ME, MG, MK, MN, MW, MX, MY, MZ, NA, NG, NI, NO, NZ, OM, PA, PE, PG, PH, PL, PT, QA, RO, RS, RU, RW, SA, SC, SD, SE, SG, SK, SL, SM, ST, SV, SY, TH, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, ZA, ZM, ZW.

(84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LR, LS, MW, MZ, NA, RW, SD, SL, ST, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, RU, TJ, TM), European (AL, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HR, HU, IE, IS, IT, LT, LU, LV,

(54) Title: A HAIR CLEANSING COMPOSITION CONTAINING *CYMBIDIUM GRANDIFLORUM* FLOWER EXTRACT

(57) Abstract: A hair cleansing composition and use thereof. The composition comprising at least one anionic surfactant, at least one amphoteric surfactant, at least one cationic polymer, and Cymbidium Grandiflorum flower extract. The composition leads to an improvement in the physicaloptical properties of the hair, and it is easy to wash out after application on hair. The composition leads to significantly moisturized hair being also improved in gliding, detangling and anti-roughness properties.



WO 2018/227516 A1

A Hair Cleansing Composition Containing *Cymbidium Grandiflorum* Flower Extract

Technical field

The present invention belongs to the cosmetic field, and relates to a cosmetic composition, especially a hair cleansing composition comprising *Cymbidium Grandiflorum* flower extract, at least one anionic surfactant and at least one amphoteric surfactant, and at least one cationic polymer. The cosmetic composition leads to an improvement in the physical-optical properties of hair, especially causing a moisturizing effect of hair, thus preventing dryness and roughness of hair. The composition is easy to wash out after application on hair. The invention relates also to the use of the cosmetic composition.

Background art

The entire human body, with the exception of the lips, the palms of the hands and the soles of the feet, is covered with hair, albeit for a large part barely visible. Because of the many nerve endings at the hair root, hair reacts sensitively to external influences such as wind or touch and is therefore a part of the sense of touch that should not be underestimated. However, nowadays, the most important function of human head hair lies in helping to create the appearance of the person in a characteristic manner. Similarly to the skin, it fulfils a social function because it contributes considerably to interpersonal relations and to the self-esteem of an individual via its outward appearance.

Hair consists of a hair shaft and a hair root. The hair shaft protrudes freely from the skin, and is a keratinized (dead) section of the hair. The hair shaft represents the actual visible part of the hair, which is continually renewed. The hair root sticks in the skin and is the living part of the hair. The hair shaft is composed of three layers: the central part, which is called hair marrow (medulla), is regressed in humans, often completely missing; then there is the marrow,

also called cortex; and cuticle as the outermost layer, comprising up to ten horny layers.

Human hair in its freshly grown condition is virtually impossible to improve. The part of the hair in the vicinity of the scalp accordingly has a virtually closed horny layer. In particular, the horny layer, being the external sheath of the hair, and also the inner region below the cuticle are subjected to particular stress by environmental influences.

Cymbidium Grandiflorum is also called *Cymbidium hookerianum* belonging to the botanical family of Orchidaceae. Orchids are well known for their moisturizing properties in relation to skin, as well as having activities of scavenging free radicals and influencing skin immunity. Some species, like the pink orchid, are rich in minerals, especially those which are important for the skin. In addition, polysaccharides and sugars are present, helping in regulating the moisture of the skin. Flower extracts can be obtained from the *Cymbidium hookerianum* Rchb.f. species. After an extraction and separation process the resulting extract is rich in saponins. These saponins can inhibit hyaluronidase activity, thus increasing the content of hyaluronic acid in the skin. The increase in hyaluronic acid leads to a moisturizing effect, too.

Moisturizing hair is connected with the idea of delivering water and/or natural oils to hair. The outmost structure of hair is the cuticula, which is arranged in form of shingles. If the cuticula is intact and compact, for example water and natural moisturizing factors cannot escape from the cortex of hair. The hair looks healthy and resembles hair in a freshly grown condition. If the cuticula is not intact for various reasons, water and natural moisturizing factors can escape from the cortex causing a dry condition of hair. In order to moisturize hair water binding components and natural oils can be delivered to hair helping to restore the cuticula and provide the cortex with water binding

components. If the cuticula is restored, water and natural moisturizing factors can be inclosed again.

The use of *Cymbidium Grandiflorum* flower extracts in skin care is described in prior art.

WO 2009/117626 A2 describes color cosmetics using naturally derived materials. A finishing powder contains a *Cymbidium Grandiflorum* flower extract. However the document is silent on specific effects related to the extract. No detailed effects of the extract are disclosed.

FR 3016126 A1 describes the use of an extract of *Artemia Salina* to protect the skin against the influence and damage of cold temperatures. A creme composition for men contains *Cymbidium Grandiflorum* flower extract. No effects of the *Cymbidium Grandiflorum* flower extract are disclosed.

WO 2006/044193 A2 describes the synthesis of rheology modifiers/hair styling resins for hair care compositions. An example of a conditioning shampoo discloses the use of a *Cymbidium Grandiflorum* flower extract. As the main issue of WO 2006/044193 A2 is directed to polymers, no effect of the *Cymbidium Grandiflorum* flower extract is mentioned.

In general, one aim of hair care is to retain the natural state of freshly grown hair over a prolonged period of time and, in the case of loss of the natural state, to restore it. Generally, natural healthy hair has a silky shine, low porosity and a pleasant, smooth feel.

Sunlight, mechanical stress by intensive combing or brushing, hair treatments, such as hair colorations, bleaching and permanent waving, and also hair shaping using a hair dryer or other tools can cause damage to hair.

Due to the above mentioned hair treatments there is a need to restore natural healthy hair, at least partially. The aim of the present invention is to make available hair cleansing compositions, which at the same time also provide a caring effect to hair. Furthermore, at least partially the components contributing to the caring of hair should be of natural origin or nature based ingredients. Said compositions should cleanse hair thoroughly and carefully. Further, said compositions should help to restore the natural condition of hair thus providing healthy looking hair which is no longer dry or rough. In addition, compositions comprising a *Cymbidium Grandiflorum* flower extract should help to improve the nourishing of the scalp thereby influencing the condition of the scalp but also the condition of the freshly grown hair in positive manner.

Summary of the invention

Inventors of the present invention found out that a hair cleansing composition containing *Cymbidium Grandiflorum* flower extract in a concentration of 0.01 to 10.0% by weight, calculated to the total weight of the composition, is able to improve the physical-optical properties of hair and scalp.

In a first aspect, the present invention provides a hair cleansing composition, comprising

- at least one anionic surfactant and at least one amphoteric surfactant,
- at least one cationic polymer,
- *Cymbidium Grandiflorum* flower extract in an amount of 0.01 to 10.0 % by weight, calculated to the total weight of the composition.

In a further aspect, the composition comprises preferably 0.05 to 7.5 % by weight, more preferably 0.1 to 5.0 % by weight, calculated to the total weight of the composition, of *Cymbidium Grandiflorum* flower extract.

Furthermore, the composition can optionally comprise the auxiliary components as listed in the part of "detailed description of the invention", such as thickening agent, nonionic surfactant, cationic surfactant, silicone, anti-dandruff agent, preservative, pearlescent agent, and colorant.

In addition to the above components and the auxiliary components, the composition comprises a balance amount of water, so that all the components amount to 100% by weight.

In another aspect the composition of the present invention is free from specific fatty acid dialkylamides and fatty dialkanolamides, namely cocamide mea and cocamide dea, free from specific alkanolamines, namely mea, dea and tea, and free from monoalkylamines and trialkylamines and salts thereof. These substances might be regarded as substances leading to nitrosamines. Nitrosamines are known to be involved in causing cancer. In the sense of the present invention "free from" means less than 0.1%, preferably less than 0.01%, and more preferably 0% by weight of the total composition.

In another aspect, the present invention relates to use of the composition of the present invention for cleansing hair thereby performing a conditioning and moisturizing effect of hair. The conditioning and moisturizing effect of hair results in an improved gliding, softness and combability of hair in the wet and dry condition. Another aspect of the present invention is the use of the composition of the present invention for providing shiny hair.

In another aspect, the present invention relates to use of *Cymbidium Grandiflorum* flower extract in preparation of a hair cleansing composition.

By using the composition of the present invention, the possible damages of hair treatments as intense combing or brushing, colorations, bleaching and

permanent waving, and also hair shaping using a hair dryer or other tools are reduced.

Detailed description of the invention

Cymbidium Grandiflorum flower extracts are obtained from the flowers of orchids by extraction and separation processes. *Cymbidium Grandiflorum* flower extracts are also commercially available. *Cymbidium Grandiflorum* flower extract can, for example, be purchased from Kunming Chin-herb Bio-tec.

The use of *Cymbidium Grandiflorum* flower extract is essential for the present invention.

Anionic surfactants suitable for the present invention comprise, but are not limited to sulfate, sulfonate, sarcosinate and sarcosine derivatives.

Preferred anionic surfactants are alkali- and/or ammonium salts of alkylsulfate and/or alkylethersulfate. It is preferred that the alkylsulfates and/or alkylethersulfates have alkyl substituents containing 8 to 16 carbon atoms, more preferred are alkylsulfates and/or alkylethersulfates with alkyl substituents containing 10 to 14 carbon atoms. Even more preferred are alkylsulfates and/or alkylethersulfates where the alkyl substituent essentially contains a lauryl group. Furthermore it is preferred that the alkylsulfates and/or alkylethersulfates are in the form of ammonium or sodium salts. Advantageously sodium laureth sulfate is used.

The anionic surfactants are preferably used in an amount of 1 to 30 % by weight, more preferably 5 to 25 % by weight, still more preferably 10 to 20 % by weight, relative to the total weight of the composition. The values are referring to the active content of the anionic surfactants.

The amphoteric surfactants suitable for the present invention are the substances commonly known in the art to be used in hair care or personal care cleansing composition, such as those described in CN 101164520A and DE 202015002188U1. According to the invention, the amphoteric surfactants are preferably alkyl- and/or alkylamidopropylbetaines. It is preferred that the alkyl- and/or alkylamidopropylbetaines have alkyl substituents containing 8 to 16 carbon atoms. Even more preferred are alkyl- and/or alkylamidopropylbetaines with alkyl substituents containing 10 to 14 carbon atoms. Most preferred are alkyl- and/or alkylamidopropylbetaines where the alkyl substituent is a lauryl group. Advantageously lauramidopropyl betaine is used.

The amphoteric surfactants are preferably contained in an amount of 0.5 to 15 % by weight, more preferably 1.0 to 15 % by weight, still more preferably 1.0 to 12.5 % by weight, most preferably 1.5 to 10 % by weight, relative to the total weight of the composition. The values are referring to the active content of the amphoteric surfactants.

The composition of the present invention contains at least one cationic polymer, which contributes to the conditioning effect of hair. Generally, both cationic polymers of natural origin or synthetic origin may be used. Preferably, the cationic polymers are chosen from the group cationic polysaccharides, vinyl monomer containing copolymers, vinylpyrrolidone containing copolymers and cationic proteins.

Advantageously cationic polymers of natural origin are guar molecules modified in such a way that the cationic substituents are introduced or substituents are introduced which are cationic at specific pH values, specifically at those pH values of the hair conditioning compositions. It is preferred if the modified guar molecule is guar hydroxypropyltrimonium chloride.

Another class of cationic polymers which can also be used in the present invention are cationic cellulose polymers. Similar to the guar polymer, the substituents introduced into cellulose molecules lead to cellulose molecules having cationic qualities. A typical example is polyquaternium 10 (e.g. JR 30M® obtained from Amerchol company), which is also called cellulose 2-(2-hydroxy-3-(trimethylammonio)propoxy)ethyl ether chloride.

One or more cationic polymers of natural origin can be used according to the present invention. However, it is preferred to use a combination of cationic polymers of natural origin. Even more preferable is a combination of guar hydroxypropyltrimonium chloride and polyquaternium-10.

In the present invention it is also possible to use synthetic cationic polymers. A preferred example of such a synthetic cationic polymer is polyquaternium 74. Polyquaternium 74 is an acrylic / methacrylamide propyldimethylammonium chloride / hydroxypropyltrimethylammonium copolymer.

The total content of one or more cationic polymer(s) ranges from 0.01 to 1.5 % by weight, preferably 0.05% to 1 % by weight, relative to the total weight of the composition. The values are referring to the active content of the cationic polymers.

According to the present invention the cleansing compositions contain components influencing the consistency of the composition. By the addition of these components the viscosity of the composition can be adjusted. These components will be called thickening agents. They function by enlarging the micelles of the surfactants or by swelling the aqueous phase. The thickening agents belong to chemically very different substances, for example electrolytes

or ethers, ester or diesters with high ethoxylation, as well as polymeric thickening agents.

According to the present invention the thickening of the compositions is achieved by electrolytes, especially sodium chloride. The compositions may be further thickened by the addition of diesters, which are highly ethoxylated. In the sense of the present invention highly ethoxylated means 50 to 300 ethoxy units (EO), preferably 100 to 200 EO units. An example which can be advantageously used is PEG-150 distearate.

The electrolyte(s) with thickening function, especially sodium chloride, is/are used in an amount of 0.01 to 2.0 % by weight, more preferably 0.1 to 1.0 % by weight, still more preferably 0.3 to 0.8 % by weight, relative to the total weight of the composition.

The one or more diester(s) with high ethoxylation is/are used in an amount of 0.01 to 1.0 % by weight, more preferably 0.05 to 0.8 % by weight, still more preferably 0.08 to 0.5 % by weight, relative to the total weight of the composition.

However, according to the present invention it is preferred to use a combination of sodium chloride and diesters with high ethoxylation, especially PEG-150 distearate, to thicken the composition.

Polymeric thickening agents may also be used according to the present invention. For example these polymeric thickeners are those which contain monomers selected from acrylic acid, methacrylic acid and derivatives of acrylic acid or methacrylic acid. Preferably the polymeric thickeners are in form of Carbopols, like those of the Lubrizol company, for instance Carbopol 980, 981, 1382, 5984, ETD 2001, ETD 2020, ETD 2050, Ultrez-10, Pemulen TR1 & TR2,

Acrylates Copolymer (trade name Carbopol Aqua SF-1) or Acrylates Crosspolymer-4 (trade name Carbopol Aqua SF-2).

Furthermore, the composition of the present invention may contain cationic surfactants. The cationic surfactants are preferably those which provide the hair with an additional conditioning effect. More preferably, the cationic surfactants are quaternary ammonium salts. Still more preferably, the cationic surfactants are of the fatty acid aminopropyl PG-dimonium chloride phosphate type.

If cationic surfactants are contained, they are preferably present in an amount of 0.001 to 1.0 % by weight, more preferably 0.01 to 0.5 % by weight, relative to the total weight of the composition. The values are referring to the active content of the cationic surfactants.

According to the invention, nonionic surfactants, can also be contained in the compositions of the invention. If nonionic surfactants are used, said surfactants are advantageously alkylglycosides.

The nonionic surfactants are preferably used in an amount of 0.05 to 3.0 % by weight, more preferably 0.1 to 2.0 % by weight, relative to the total weight of the composition. The values are referring to the active content of the nonionic surfactants.

Silicones, especially dimethicones and/or amodimethicones can be used according to the present invention. Dimethicones and/or amodimethicones are especially useful in contributing to a conditioning effect of hair. Silicone fluids can be characterized by their viscosity. Commercial products have a viscosity of between 1 centistokes (cst) and 1,000,000 cst. The lower viscosity products are miscible for example with mineral oil and isopropyl myristate and are useful for

aerosol applications. The products having 100 - 500 cst are the traditional silicones used as additives in skin care formulations and products characterized by higher viscosities used in barrier products or in hair products.

According to the invention, the silicones are preferably dimethicones available as Baysilone M Dimethicone (5,000 - 2,000,000 cst) or CB-50M (-500,000 cst at 25°C), both supplied by Momentive; further preferred are Dimethyl Silicone Fluids supplied by Dow Corning like PMX-200 Silicone Fluid (60,000 - 500,000 cst) or CB 6634 Fluid (250,000 -650,000 cst); further preferred amodimethicones are 8500 Conditioning Agent, 2-8566 Amino Fluid or AP-8087 Fluid supplied by Guangzhou Dongxiong.

The total content of one or more dimethicone(s) and/or amodimethicone(s) preferably ranges from 0.1 to 5 % by weight, more preferably 0.5% to 3 % by weight, relative to the total weight of the composition. The values are referring to the active content of the silicones.

The hair cleansing composition of the present invention can optionally contain anti-dandruff agents. The anti-dandruff agents suitable for the present invention comprise any anti-dandruff agents known by one skilled in the art for treatment and prevention of dandruff formation. In particular, a considerable number of antifungal components are known from prior art that can be used as anti-dandruff agents in cosmetic compositions. Examples of anti-dandruff agents are climbazole, ketoconazole, ciclopirox, piroctone olamine, zinc pyrithione, and selen disulfide. Zinc pyrithione is preferred in the present invention.

Anti-dandruff agents are preferably used in an amount of 0.1 to 2.0 % by weight, more preferably 0.2 to 1.0 % by weight, relative to the total weight of the composition. The values are referring to the active content of the antidandruff.

The hair cleansing composition of the present invention can comprise preservatives, which are allowed and suitable for cosmetic preparations. However, it is preferred to use of Benzyl Alcohol, Methylisothiazolinone, Methylchloroisothiazolinone, Ethylparaben, Methylparaben, Phenoxyethanol, and mixtures thereof.

The preferred preservatives can be used alone or in combination. The total amount of preservative, referring as well to one single preservative as to a combination of preservatives, is from 0.0001 to 5.0 % by weight, preferably 0.0005 to 2.5 % by weight, relative to the total weight of the composition. The values are referring to the active content of the preservatives.

The hair cleansing compositions of the present invention can optionally comprise pearlescent agents. Examples for pearlescent agents are ethylene glycol mono-stearate, ethylene glycol distearate, polyethylene glycol distearate and mixtures thereof.

It is preferred that the compositions of the present invention comprise glycol distearate and/or PEG-3 distearate as pearlescent agents.

Pearlescent agents are used preferably in an amount of 0.1 to 3 % by weight, more preferably 0.2 to 2 % by weight, relative to the total weight of the composition.

The hair cleansing compositions of the present invention can comprise colorants which have to be water soluble. Examples for suitable water soluble colorants are CI 19140, CI 42090, CI 14700. A preferred colorant for the present invention is CI 19140.

Preparation method

The composition of the present invention can be prepared by any technique known or effective to prepare a hair cleansing composition. The process to prepare the composition of the present invention comprises conventional formulating and mixing techniques. For example, the methods as disclosed in DE 202015002188U1 and CN 101164520A can be used.

Specifically, compositions of the present invention and a comparative composition are preferably produced with the following procedure (Table 1 shows the detailed composition of the Examples, and Table 3 shows the corresponding trade name and INCI of the compounds):

For manufacturing a batch of one of the compositions mentioned in the present invention, an IKA RW20 digital or IKA Eurostar stir equipment and a stirrer, e.g. a paddle stirrer is used.

- Heat phase A to 75 ~ 78 °C in a beaker until all components are dissolved.
- Mix phase B in a beaker, stir 5 minutes constantly.
- Add phase B to phase A while slowly stirring, stir at 150 - 250rpm until 40 - 45°C.
- Add phases C and D while slowly stirring, until all components are dissolved and homogeneous.
- Finally add phase E while slowly stirring, stir until the composition is cooled down to room temperature.

Test method

In order to show that the addition of *Cymbidium Grandiflorum* flower extract to the inventive compositions has an effect and contributes to the solution of the above-mentioned problem, a half head test is conducted. The test is carried out using the following procedure:

Compositions comprising *Cymbidium Grandiflorum* flower extract at different concentrations ranging from 0.1 to 5.0 % by weight (Examples 1 to 6) are prepared as samples of the present invention, and a blank shampoo is used as the comparative sample, which does not comprise *Cymbidium Grandiflorum* flower extract at all. Respective test samples are filled in syringes, not revealing any details of the composition therein. Depending on the length of the hair, the amount of sample will be 3-5 ml.

A trained hairdresser starts with an initial assessment of the subject's hair to be treated by evaluating and recording the condition of the subject's hair.

Separate the hair of a subject from the middle of head, and clip up one side of the hair when the other side is treated. Wet the hair.

Put each sample in one hand, evaluate consistency of each sample. Spread each sample on hair, evaluate spreadability, foaming properties like richness, slippery and amount of foam.

Use the comparative sample to wash one side of the hair, and use one of the samples of the present invention to wash the other side. Stroke each side of head hair for 45s, and rinse the hair for 60s. The condition of the hair is not assessed during the washing procedure.

After rinsing for 3s - 5s, assess the detangling and gliding properties (3s - 5s). After rinsing for 30s, assess the gliding properties (30s) and easiness to rinse out. Then wet both sides of the hair again, and cover the hair up with towels.

Towel the hair to remove the spare water. Comb the hair with wide tooth comb, and assess wet detangling properties. After this, comb the hair with fine tooth comb, and assess wet combability.

Assess the wet gliding, anti-roughness at the tips of the hair.

After leaving hair at room temperature for 5 minutes, assess the moisture property and give general comments on both sides.

Blow-dry the hair, and assess easiness to manage the hair in dry condition.

Comb the hair with wide tooth comb, assess the dry detangling properties. After this, comb the hair with fine tooth comb, and assess the dry combability.

Finally assess dry gliding, anti-roughness and shininess of the hair. Give general comment to both sides.

8 different people for each sample are evaluated by the trained hairdresser.

The evaluation is based on a 10-point system, "1 point" corresponds to "bad", and "10 points" corresponds to "good". A value of 5 points is a medium value, corresponding to sufficient qualities. The values of 9 to 6 points give descending values, making it possible to differentiate stepwise between good and sufficient. Correspondingly, the values of 4 to 2 points give descending values, making it possible to differentiate stepwise between sufficient and bad.

The test and evaluation results are shown in Table 3, wherein the average score based on the 8 evaluation scores is recorded for each sample.

Table 1: Composition of Examples 1 to 6 and Comparative Example:

The amounts given refer to raw materials, the raw materials used are disclosed in table 3.

Phase	Ingredients	Comparative Example	Example 1	Example 2	Example 3	Example 4	Example 5	Example 6
A	Water	60	60	60	60	60	60	60
	Sodium Laureth Sulfate	20	20	20	20	20	20	20
	Lauramidopropyl Betaine	8.8	8.8	8.8	8.8	8.8	8.8	8.8
	Sodium Chloride	0.8	0.8	0.8	0.8	0.8	0.8	0.8
	PEG-150 Distearate	0.2	0.2	0.2	0.2	0.2	0.2	0.2
B	PPG-14 Butyl Ether	1	1	1	1	1	1	1
	Polyquaternium-10	0.3	0.3	0.3	0.3	0.3	0.3	0.3
	Guar Hydroxypropyltrimonium Chloride	0.1	0.1	0.1	0.1	0.1	0.1	0.1
C	Water	1	1	1	1	1	1	1
	Fragrance	0.5	0.5	0.5	0.5	0.5	0.5	0.5
	PEG-40 Hydrogenated Castor Oil	0.1	0.1	0.1	0.1	0.1	0.1	0.1
D	DMDM Hydantoin	0.2	0.2	0.2	0.2	0.2	0.2	0.2
	Methylchloroisothiazolinone + Methylisothiazolinone	0.05	0.05	0.05	0.05	0.05	0.05	0.05
	Citric Acid	0.06	0.06	0.06	0.06	0.06	0.06	0.06
E	Sodium Hydroxide	0.01	0.01	0.01	0.01	0.01	0.01	0.01
	<i>Cymbidium Grandiflorum</i> Flower Extract	0	0.1	0.5	1.0	1.5	2.5	5.0
	Water	To 100	To 100	To 100	To 100	To 100	To 100	To 100

Table 2: Results of half side tests in hair salon:

Evaluation	Comparative Example	Example 1	Example 2	Example 3	Example 4	Example 5	Example 6
Wet Hair: Combability	7.80	8.01	8.13	8.13	8.41	8.47	8.33
Wet Hair: Gliding	7.29	7.50	7.74	7.71	7.60	7.61	7.69
Wet Hair: Softness	7.30	7.38	7.31	7.55	7.36	7.45	7.47
Dry Hair: Combability	7.52	8.05	8.32	8.35	8.24	8.55	8.42
Dry Hair: Gliding	8.28	9.01	9.17	8.88	8.58	8.56	8.76
Dry Hair: Softness	8.02	8.41	8.58	8.55	8.46	8.53	8.87
Dry Hair: Flowing	7.52	8.12	9.01	8.88	8.78	8.90	8.58
Dry Hair: Heaviness	1.57	0.97	0.83	0.86	0.85	0.94	0.70
Dry Hair: Anti-Roughness	6.56	7.24	8.12	8.25	8.56	8.56	8.79
Moisture	7.52	8.10	9.07	9.17	9.05	9.21	9.27
Shine	7.14	7.60	8.90	8.94	8.91	8.88	8.81

Table 3: Trade name and INCI names of the compounds:

Trade name	中文 INCI	英文 INCI
LAB-30K (30%)	月桂酰胺丙基甜菜碱	Lauramidopropyl Betaine
Polyquta 125KC	聚季铵盐-10	Polyquaternium-10
JAGUAR C-13S	瓜儿胶羟丙基三甲基氯化铵	Guar Hydroxypropyltrimonium Chloride
氢氧化钠 (99 - 100%)	氢氧化钠	Sodium Hydroxide
K2000 (54%)	DMDM 乙内酰脲 & 水	DMDM Hydantoin & Water
SY-K25	甲基氯异噻唑啉酮、甲基异噻唑啉酮	Methylisothiazolinone & Methylchlorisothiazolinone
Citric acid Monohydrate	柠檬酸	Citric acid
Fragrance	香精	Fragrance
70% SLES	月桂醇聚醚硫酸酯钠	Sodium Laureth Sulfate
NaCl Sodium Chloride Extrapure	氯化钠	Sodium Chloride
Dapracare P6000 DS HV	PEG-150 二硬脂酸酯	PEG-150 Distearate
Fluid AP, Low Odor, Art. Nr. 80158	PPG-14 丁醚	PPG-14 Butyl Ether
<i>Cymbidium Grandiflorum flower Extract</i>	虎头兰 (CYMBIDIUM GRANDIFLORUM) 花提取物	Cymbidium Grandiflorum Flower Extract
Eumulgin CO 40	PEG-40 氢化蓖麻油	PEG-40 Hydrogenated Castor Oil

It can be clearly seen from Table 2 that the addition of *Cymbidium Grandiflorum* flower extract to the composition has multiple effects. It is obvious that the effect is dependent on the concentration of *Cymbidium Grandiflorum* flower extract in the respective compositions. *Cymbidium Grandiflorum* flower extract in a concentration range from 0.5 to 1.5 % by weight in the respective compositions leads to the best values concerning nearly all qualities of hair evaluated.

In detail, an amount of 0.5 % by weight of *Cymbidium Grandiflorum* flower extract in the respective composition leads to good results regarding gliding of wet hair and an amount of 1.0 % by weight of *Cymbidium Grandiflorum* flower extract in the respective composition leads to good results regarding softness in wet hair. Combability of wet hair is evaluated best after treatment with compositions containing 2.5 % *Cymbidium Grandiflorum* flower extract.

Referring to dry hair, 0.5 % by weight of *Cymbidium Grandiflorum* flower extract in the respective composition leads to best results concerning combability, gliding, and flowing of hair. Combability in dry hair is evaluated best after the application of a composition containing 1.0 % by weight of *Cymbidium Grandiflorum* flower extract. Softness in dry hair is evaluated best after the application of a composition containing 5.0 % by weight of *Cymbidium Grandiflorum* flower extract, but the application of compositions containing 0.5 to 1.0 % by weight of *Cymbidium Grandiflorum* flower extract already lead to good evaluations. The evaluation of the condition of dry hair referring to heaviness is done in the following way: A higher value means that the hair feels somewhat too thick, it looks slumping down or even oily. The highest possible value is 5. A low value means the hair is loaded up anti-statically, it looks too fluffy. The lowest possible value is 0.5. Ideal values range between 0.6 and 1.0. All compositions containing *Cymbidium Grandiflorum* flower extract lead to good performances in dry hair referring to heaviness. The property of anti-roughness

is evaluated best after the application of compositions containing 5.0 % by weight *Cymbidium Grandiflorum* flower extract. But compositions comprising 1.5.to 2.5 % by weight *Cymbidium Grandiflorum* flower extract are already providing good results referring to anti-roughness.

The qualities of shine and moisture are also evaluated. Compositions containing 5.0 % by weight *Cymbidium Grandiflorum* flower extract lead to best result concerning moisture of hair, but already compositions with 1.0 to 2.5 % by weight of *Cymbidium Grandiflorum* flower extract lead to very good evaluations concerning the moisture of hair. Compositions containing 1.0 % by weight of *Cymbidium Grandiflorum* flower extract lead to very good evaluations concerning shine of hair.

Summing up, it can be seen that the addition of *Cymbidium Grandiflorum* flower extract in varying concentrations to the respective compositions lead to good results concerning to the different qualities of hair. Thus, the cleansing compositions of the present invention manage to cause a conditioning and moisturizing effect of hair, thus improving combability, gliding and softness in wet and dry hair. Also after application of compositions of the present invention hair does not feel rough or heavy, but instead free flowing. Furthermore, compositions of the present invention improve the shine of hair.

The above examples of the present invention are provided only for illustrative purposes, and are not intended to limit the invention in any aspects. One skilled in the art should know that, changes and modifications may be carried out to technical solutions of the present invention within the spirit and scope of the present invention.

What is claimed:

1. A hair cleansing composition, comprising:
 - at least one anionic surfactant and at least one amphoteric surfactant,
 - at least one cationic polymer, and
 - *Cymbidium Grandiflorum* flower extract in an amount of 0.01 to 10 % by weight, calculated to the total weight of the composition.
2. The composition according to claim 1, characterized in that *Cymbidium Grandiflorum* flower extract is contained in an amount of 0.05 to 7.5 % by weight, relative to the total weight of the composition.
3. The composition according to claim 2, characterized in that *Cymbidium Grandiflorum* flower extract is contained in an amount of 0.1 to 5.0 % by weight, relative to the total weight of the composition.
4. The composition according to any of the claims 1 to 3, characterized in that the composition comprises auxiliary components, selected from thickening agent, nonionic surfactant, cationic surfactant, silicone, anti-dandruff agent, preservative, pearlescent agent, and colorant, and the composition comprises a balance amount of water, so that all the components amount to 100% by weight.
5. The composition according to any of the claims 1 to 4, characterized in that the at least one anionic surfactant is an alkylsulfate and/or alkylethersulfate having alkyl substituents containing of 8 to 16 carbon atoms.
6. The composition according to claim 5, characterized in that the at least one anionic surfactant is an alkylsulfate and/or alkylethersulfate having alkyl substituents containing 10 to 14 carbon atoms.

7. The composition according to claim 6, characterized in that the at least one anionic surfactant is an alkylsulfate and/or alkylethersulfate in form of an ammonium or sodium salt.

8. The composition according to claim 7, characterized in that the anionic surfactant is sodium laureth sulfate.

9. The composition according to any of the claims 1 to 8, characterized in that the at least one anionic surfactant is present in an amount of 1 to 30 % by weight, relative to the total weight of the composition.

10. The composition according to claim 9, characterized in that the at least one anionic surfactant is present in an amount of 5 to 25 % by weight, relative to the total weight of the composition.

11. The composition according to claim 10, characterized in that the at least one anionic surfactant is present in an amount of 10 to 20 % by weight, relative to the total weight of the composition.

12. The composition according to any of claims 1 to 4, characterized in that the at least one amphoteric surfactant is an alkyl- and/or alkylamidopropyl betaine.

13. The composition according to claim 12, characterized in that the at least one amphoteric surfactant is an alkyl- and/or alkylamidopropylbetaine having an alkyl substituent containing 8 to 16 carbon atoms.

14. The composition according to claim 13, characterized in that the at least one amphoteric surfactant is an alkyl- and/or alkylamidopropylbetaine having an alkyl substituent containing 10 to 14 carbon atoms.

15. The composition according to claim 14, characterized in that the amphoteric surfactant is lauramidopropyl betaine.

16. The composition according to any of the claims 1 to 15, characterized in that the at least one amphoteric surfactant is present in an amount of 0.5 to 15 % by weight, relative to the total weight of the composition.

17. The composition according to claim 16, characterized in that the at least one amphoteric surfactant is present in an amount of 1.0 to 15 % by weight, relative to the total weight of the composition.

18. The composition according to claim 17, characterized in that the at least one amphoteric surfactant is present in an amount of 1.0 to 12.5 % by weight, relative to the total weight of the composition.

19. The composition according to claim 18, characterized in that the at least one amphoteric surfactant is present in an amount of 1.5 to 10 % by weight, relative to the total weight of the composition.

20. The composition according to any of the claims 1 to 19, characterized in that the at least one cationic polymer is of natural origin.

21. The composition according to claim 20, characterized in that the at least one cationic polymer is selected from the group consisting of cationic polysaccharides, vinyl monomer containing copolymers, vinylpyrrolidone containing copolymers and cationic proteins.

22. The composition according to claim 21, characterized in that the at least one cationic polymer is selected from the group consisting of guar hydroxypropyltrimonium chloride and polyquaternium 10.

23. The composition according to claim 22, characterized in that a combination of guar hydroxypropyltrimonium chloride and polyquaternium 10 is present.

24. The composition according to any of the claims 1 to 23, characterized in that the at least one cationic polymer is present in an amount of 0.01 to 1.5 % by weight, relative to the total weight of the composition.

25. The composition according to claim 24, characterized in that the at least one cationic polymer is present in an amount of 0.05% to 1 % by weight, relative to the total weight of the composition.

26. The composition according to claims 1 to 25, characterized in that the composition contains less than 0.1% by weight of the total composition of

- specific fatty acid dialkylamides and fatty dialkanolamides, namely cocamide mea and cocamide dea,
- specific alkanolamines, namely mea, dea and tea and
- monoalkylamines and trialkylamines and salts thereof.

27. The composition according to claim 26, characterized in that that the composition contains less than 0.01% by weight of the total composition of

- specific fatty acid dialkylamides and fatty dialkanolamides, namely cocamide mea and cocamide dea,
- specific alkanolamines, namely mea, dea and tea, and
- monoalkylamines and trialkylamines and salts thereof.

28. The composition according to claim 27, characterized in that that the composition contains 0% by weight of the total composition of

- specific fatty acid dialkylamides and fatty dialkanolamides, namely cocamide mea and cocamide dea,
- specific alkanolamines, namely mea, dea and tea, and
- monoalkylamines and trialkylamines and salts thereof.

29. Use of the composition according to any of claims 1 to 28 to carry out a conditioning and moisturizing effect of hair.

30. Use of the composition according to any of claims 1 to 28 to improve the gliding property, softness and combability of the hair.

31. Use of the composition according to any of claims 1 to 28 to provide shiny hair.

32. Use of *Cymbidium Grandiflorum* flower extract in preparation of the hair cleansing composition of any of claims 1 to 28..

INTERNATIONAL SEARCH REPORT

International application No.

PCT/CN2017/088549

A. CLASSIFICATION OF SUBJECT MATTER

A61K 8/97(2017.01)i; A61Q 5/02(2006.01)i

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

A61K 8/-, A61Q 5/-

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

CNPAT, CNKI, EPODOC, WPI, CAPLUS(STN): Beiersdorf, hair, cleansing, Cymbidium Grandiflorum, extract, orchid, surfactant, anionic, amphoteric, cationic, polymer, sulfate, laureth, betaine, guar, polyquaternium, MEA, DEA, TEA, conditioning, moisturizing, gliding, soft, combability, shiny

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	WO 2006044193 A2 (ISP INVESTMENTS INC, ET AL) 27 April 2006 (2006-04-27) example 20, page 2, lines 28-31	1-32
Y	WO 2017035766 A1 (BEIERSDORF DAILY CHEMICAL WUHAN CO. LTD, ET AL) 09 March 2017 (2017-03-09) abstract, example 3, page 8, lines 5-15	1-32
A	CN 106132396 A (ISP INVESTMENTS INC) 16 November 2016 (2016-11-16) example 5	1-32
A	WO 2009117625 A2 (MCINTOSH KAYA, ET AL) 24 September 2009 (2009-09-24) example 6	1-32

☐ Further documents are listed in the continuation of Box C.☒ See patent family annex.

* Special categories of cited documents:

“A” document defining the general state of the art which is not considered to be of particular relevance

“E” earlier application or patent but published on or after the international filing date

“L” document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)

“O” document referring to an oral disclosure, use, exhibition or other means

“P” document published prior to the international filing date but later than the priority date claimed

“T” later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

“X” document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

“Y” document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art

“&” document member of the same patent family

Date of the actual completion of the international search

24 February 2018

Date of mailing of the international search report

20 March 2018

Name and mailing address of the ISA/CN

STATE INTELLECTUAL PROPERTY OFFICE OF THE
P.R.CHINA
6, Xitucheng Rd., Jimen Bridge, Haidian District, Beijing
100088
China

Authorized officer

YU, Yeping

Facsimile No. (86-10)62019451

Telephone No. (86-10)010-53962332

INTERNATIONAL SEARCH REPORT
Information on patent family members

International application No.

PCT/CN2017/088549

Patent document cited in search report			Publication date (day/month/year)	Patent family member(s)			Publication date (day/month/year)
WO	2006044193	A2	27 April 2006	JP	5684968	B2	18 March 2015
				KR	20080016778	A	22 February 2008
				US	2006084586	A1	20 April 2006
				EP	1809731	B1	19 April 2017
				US	2007202064	A1	30 August 2007
				AU	2005296052	B2	21 July 2011
				CA	2584177	A1	27 April 2006
				MX	2007004468	A	07 May 2007
				CN	101341239	B	28 November 2012
				CN	101341239	A	07 January 2009
				BR	PI0516089	B1	09 August 2016
				EP	1809731	A4	28 May 2008
				WO	2006044193	A3	05 October 2006
				EP	1809731	A2	25 July 2007
				US	7205271	B2	17 April 2007
				KR	101261080	B1	06 May 2013
				CA	2584177	C	10 September 2013
				JP	2008516950	A	22 May 2008
				BR	PI0516089	A	19 August 2008
				AU	2005296052	A1	27 April 2006
WO	2017035766	A1	09 March 2017	WO	2017036631	A1	09 March 2017
				WO	2017036135	A1	09 March 2017
				WO	2017036134	A1	09 March 2017
CN	106132396	A	16 November 2016	KR	20170115432	A	17 October 2017
				WO	2015107286	A2	23 July 2015
				JP	2017502050	A	19 January 2017
				WO	2015107286	A3	11 September 2015
				FR	3016126	B1	23 June 2017
				US	2017042802	A1	16 February 2017
				EP	3092041	A2	16 November 2016
WO	2009117625	A2	24 September 2009	FR	3016126	A1	10 July 2015
				WO	2009117625	A3	03 December 2009