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(54) Title: MASCARA COMPOSITION FOR EXCELLENT REAPPLICATION

(57) Abstract: Provided is a mascara composition with excellent reapplicability. More specifically, the present invention discloses a mascara composition with excellent reapplicability, in which the system is stabilized by soap that is a fatty acid ester, i.e. by a triethanolamine-fatty acid ester mixture obtained by reacting triethanolamine with a fatty acid and containing the unreacted fatty acid, soft and uniform application is achieved to provide the excellent reapplicability by the combined use of a higher fatty alcohol as oil-soluble wax, without the incorporation of any other emulsifier, and smooth application and superior durability without smudge are realized by further inclusion of a platelet alumina powder to prevent mascara smudge.



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【DESCRIPTION】**【Invention Title】****MASCARA COMPOSITION FOR EXCELLENT REAPPLICATION****【Technical Field】**

5 The present invention relates to a mascara composition with excellent reapplicability. More specifically, the present invention relates to a mascara composition with excellent reapplicability, in which the system is stabilized by a soap that is a fatty acid ester, *i.e.* by a triethanolamine-fatty acid ester mixture obtained by reacting triethanolamine with a fatty acid and containing the unreacted fatty acid, soft
10 and uniform application is achieved to provide the excellent reapplicability by the combined use of a higher fatty alcohol as oil-soluble wax, without the incorporation of any other emulsifier, and smooth application and superior durability without smudge are realized by further inclusion of a platelet alumina powder to prevent mascara smudge.

【Background Art】

15 In general, the use of mascara is to make up for user's defects associated with the form of eyelashes or emphasize merits of user's eyelashes to thereby express beauty of eyes. Major effects of mascara application may be broadly classified into functional expressions (such as volume-up, curling, long-lash and waterproof effects), applicability and durability. Through the recent fact-finding survey on use of mascara by
20 customers, it was revealed that the applicability is the second most important factor of mascara next to functions. Generally, such a survey showed that the consumers usually apply the mascara to the eyelashes many times, for example from several tens of times to one hundred fifty times until a desired form of eyelashes is achieved, upon application of the mascara to eyelashes. Therefore, it can be said that the mascara

exhibiting smooth, soft and uniform application is a superior one as the consumers usually do repeated applications of the mascara multiple times for each lash.

The applicability in the mascara may be divided into initial applicability and reapplicability (or overlap applicability), depending upon the application sequence. As
5 used herein, the term "initial applicability" is defined to mean only a single application of a mascara liquid to all parts of eyelashes, whereas the term "reapplicability" is defined to mean overlap application of multiple times ranging from several tens of times to one hundred times after the initial application. In order to secure final uniform application, the mascara should have excellent reapplicability. However, conventional
10 prior arts have focused only on the development of various methods for preparation of mascara having excellent initial applicability.

In order to improve the applicability of the mascara via the formation of a uniform coating film, Korean Patent Application Publication No. 2004-0066330 discloses a mascara composition comprising A) wax; B) a fatty acid; C) an olive oil-
15 derived emulsifier; D) a water-soluble thickener; E) a film-forming agent; and F) a pigment. The aforementioned mascara composition initially forms a uniform coating film to thereby exhibit an excellent initial applicability, but suffers from insufficient reapplicability due to a coated film of the film-forming agent and a thick film of wax, thereby resulting in poor final reapplicability to cause mascara clumping.

20 Up to now, in order to prevent mascara smudge and impart durability, conventional arts have used largely film-forming agents, *i.e.* polymers (polyvinyl alcohols, polyvinyl acetates, polyvinyl pyrrolidones, acrylate copolymers, alkyl acrylate copolymer emulsions, ammonium acrylate copolymers and PVP/eicosine copolymers). The use of such film-forming polymers advantageously imparts durability, but leads to
25 deterioration of the reapplicability thereby resulting in poor final applicability. Poor

applicability due to deterioration of the reapplicability leads to a failure to form a uniform coating film, which thereby may cause eyelash clumping or mascara flake-off. Flaking of mascara may be problematic because the probable invasion of foreign materials into the eyes may result in eye irritation. Since the eye is an organ that is very susceptible to stimuli by foreign materials as compared to any other organ, mascara products used daily by women must not cause any irritation to the eyes and the surrounding skin.

Further, Korean Patent Application Publication No. 2004-22197 discloses a technique using TEA-stearate which is a fatty acid ester. According to this art, the aforementioned fatty acid ester is used to improve uniform applicability by securing good adhesion of a cosmetic composition to keratin materials taking advantage of the high tackiness of the TEA-stearate. However, even though it may be uniformly applied to eyelashes due to the good adhesiveness to keratin, a main component of lashes, the use of TEA-stearate as wax suffers from a disadvantage of smudge. In addition, Korean Patent Application Publication No. 2001-46259 discloses a mascara cosmetic composition with a combined use of a fatty acid ester, TEA-stearate with a film-forming agent which is used to prevent the smudge resulting from the use of TEA-stearate and enhance durability, curling and volume-up effects. However, the use of such a film-forming agent in this mascara composition imparts the durability, but suffers from a disadvantage that causes deterioration of applicability.

Meanwhile, another factor responsible for deterioration of mascara applicability may be a decrease in the applicability due to solidification of contents that occurs in oil-in-water mascara. Due to intrinsic characteristics of the oil-in-water mascara, an external phase of the mascara liquid, *i.e.* water, evaporates during the use of the mascara to thereby result in solidification of the mascara liquid which consequently

causes non-uniform application of the mascara. In order to solve such a problem, Korean Patent Application Publication No. 2005-60328 discloses a mascara composition which improves the applicability via provision of a water-retention ability by preventing evaporation of the external phase, *e.g.* water. However, such a composition also suffers from a disadvantage associated with fading of an appearance color. There is a need for the development of a technique which is capable of solving or alleviating such a color fading problem or is capable of improving the applicability of the oil-in-water mascara without the use of a liquid crystal base.

【Disclosure】

【Technical Problem】

Based on the above-mentioned problems and disadvantages suffered by oil-in-water mascara containing no liquid crystal base, the inventors of the present invention conducted a variety of extensive and intensive studies and experiments to find a method which is capable of solving the problems associated with the occurrence of flake-off and smudge over time while improving an application property, *i.e.* reapplicability. As a result, the present inventors developed a mascara composition having excellent durability without smudge, wherein the system is stabilized by using an unreacted fatty acid-containing triethanolamine-fatty acid ester mixture via the reaction of triethanolamine with a fatty acid while exhibiting soft touch without the use of a non-ionic surfactant that was used as an emulsifying agent to stabilize the system, soft and uniform application is achieved to provide improved reapplicability by the combined use of a higher fatty alcohol as oil-soluble wax, and a problem of smudge that occurs due to the soap of triethanolamine-fatty acid ester is prevented by further inclusion of a platelet alumina powder, instead of using a film-forming agent.

Therefore, the present invention has been made in view of the above problems, and it is an object of the present invention to provide a mascara composition having long lasting and clean cosmetic effects, which improves an applicability by co-incorporation of a triethanolamine-fatty acid ester mixture containing the unreacted fatty acid, obtained by the reaction of triethanolamine with a fatty acid, in conjunction with a higher fatty alcohol, and also exhibits smooth applicability and durability by further inclusion of a platelet alumina powder so as to prevent mascara smudge and flake-off.

【Technical Solution】

In accordance with an aspect of the present invention, the above and other objects can be accomplished by the provision of a mascara composition comprising a soap that is a fatty acid ester, *i.e.* a triethanolamine-fatty acid ester mixture obtained by reacting triethanolamine with a fatty acid and containing the unreacted fatty acid; a higher fatty alcohol; and a platelet alumina powder, without using a non-ionic surfactant and any emulsifying agent.

【Best Mode】

Hereinafter, the present invention will be described in more detail.

The present invention is directed to a mascara composition having excellent reapplicability and durability, wherein the system is stabilized by a soap that is a fatty acid ester, *i.e.* by a triethanolamine-fatty acid ester mixture obtained by reacting triethanolamine with a fatty acid and containing the unreacted fatty acid, excellent reapplicability is achieved by the combined use of a higher fatty alcohol as oil-soluble wax, and smooth application can be obtained without smudge by further inclusion of a platelet alumina powder.

The soap that is a fatty acid ester utilized in the present invention, *i.e.* a triethanolamine-fatty acid ester mixture obtained by reacting triethanolamine with a fatty acid and containing the unreacted fatty acid, is used in place of an emulsifying agent employed in a conventional mascara composition. The above-mentioned fatty acid is a fatty acid containing 14 to 22, preferably 16 to 18 carbon atoms. If the number of carbon atoms in the fatty acid is lower than 14 or higher than 22, it is not preferable for mascara formulations due to poor hardness and texture.

The unreacted fatty acid-containing triethanolamine-fatty acid ester mixture is obtained by reacting a fatty acid and triethanolamine in an equivalent ratio of 1:0.7 to 1:0.98. A content of the unreacted fatty acid in the ester mixture is in a range of 2 to 30% by weight, based on the total weight of the introduced fatty acid. If triethanolamine is used in an equivalent ratio of less than 0.7 relative to the fatty acid, a neutralization ratio between triethanolamine and fatty acid is less than 30%, so it is not suitable to serve as an emulsifying agent, thus resulting in poor stability of the mascara to thereby cause phase separation. On the other hand, if triethanolamine is used in an equivalent ratio of more than 0.98 relative to the fatty acid, the neutralization ratio between triethanolamine and fatty acid is higher than 98%, which provides excellent stability of the mascara, but suffers from problems such as decreased applicability due to excessively high hardness, and non-uniformity of application.

The triethanolamine-fatty acid ester mixture, which is obtained by reacting triethanolamine with a fatty acid and contains the unreacted fatty acid in a content of 2 to 30% by weight, based on the total weight of the fatty acid, is used in an amount of 1 to 15% by weight, preferably 3 to 9% by weight, based on the total weight of the mascara composition. If a content of the unreacted fatty acid-containing triethanolamine-fatty acid ester mixture is less than 1% by weight, the system is not

stabilized, thereby presenting a problem of phase separation. On the other hand, if a content of the triethanolamine-fatty acid ester mixture is higher than 15% by weight, this may lead to stiff reapplicability.

In order to further improve the applicability, the mascara composition of the present invention further comprises a higher fatty alcohol, in addition to the triethanolamine-fatty acid ester mixture. Examples of the higher fatty alcohol may include cetyl alcohol, stearyl alcohol, isostearyl alcohol, behenyl alcohol, and the like, depending upon the number of carbon atoms. As the alcohol that can be used as an emulsion stabilizer as well as the oil-soluble wax in the present invention, preferred are white waxy saturated fatty acid alcohols having 18 to 22 carbon atoms.

Typical examples of the higher fatty alcohol used in the mascara composition of the present invention may include commercial ones such as Lanette 18 and Lanette 22 (Cognis), Nacol 18-94 alcohol, Nacol 18-98 alcohol and Nacol 18-99 alcohol (Sasol Germany GmbH-Hamburg), Lipocal S (Lipo Chemical), behenyl alcohol series (for example, Behenyl alcohol 60, 70 and 80, Kokyu Alcohol Kogyo) and behenyl alcohol series (for example, Nikko behenyl alcohol 65 and 80, Nikko Chemical).

If the number of carbon atoms in the higher fatty alcohol is less than 18, the carbon chain length is short so that the fatty alcohol cannot provide excellent applicability. Therefore, it is preferred to use fatty alcohols having a chain of more than 18 carbon atoms. The fatty alcohols having a chain of more than 18 carbon atoms more easily form a lamellar structure, and the resulting lamellar structure is highly susceptible to brittleness by external stress (shear thinning effect). As a result, the reapplicability is advantageously enhanced upon application of the mascara liquid to eyelashes.

The aforementioned C₁₈-C₂₂ higher fatty alcohol is contained in an amount of 0.5 to 30% by weight, preferably 3 to 10% by weight, based on the total weight of the mascara composition. If a content of the fatty alcohol is less than 0.5% by weight, smooth texture of the C₁₈-C₂₂ fatty alcohol cannot be exerted due to a small amount of the higher fatty alcohol to be used. On the other hand, if a content of the fatty alcohol is higher than 30% by weight, the hardness of the resulting mascara formulation increases, thereby resulting in a problem of stiff application.

In order to simultaneously provide the reapplicability and durability, the mascara composition in accordance with the present invention further comprises a platelet alumina powder, in addition to the combined use of the triethanolamine-fatty acid ester mixture and the higher fatty alcohol.

In order to obviate problems of smudge and flake-off upon the use of the mascara composition, most of conventional mascara formulations employed large amounts of a polymer as a film-forming agent to thereby impart the durability. However, since the use of the film-forming agent results in deterioration of the reapplicability, the present invention imparted durability via the use of an absorbent, instead of film-forming agent. Typical examples of powders that can serve as the absorbent may include various kinds of materials such as aluminum oxide, aluminum silicate, bentonite, calcium silicate, cellulose, hectorite, kaolin, talc and zinc zeolite. The present invention employed an aluminum oxide which is a platelet powder having a combination of excellent durability and applicability.

The aforementioned platelet powder has a very thin thickness and can thus be applied to eyelashes with a thin thickness and a large adhesion area. Therefore, it shows less flake-off over time and provides smooth surface properties, thus resulting in an advantage of very soft and smooth application.

The platelet alumina powder (Al_2O_3) used in the present invention was Alusion (Advanced Powder Technology). In addition, Alumina series (Activated 4082, Calcined 612 and Tabular 635, available from Whittaker and Clark&Daniels Inc.) are commercially available. These powders are commercially available with various chemical compositions.

The mascara composition of the present invention contains the platelet alumina powder (Alusion) in an amount of 1 to 10% by weight, based on the total weight of the mascara composition. If a content of the alumina powder is lower than 1% by weight, it is difficult to achieve continued duration of realizing no smudge by the absorption power of the powder. On the other hand, if a content of the alumina powder is higher than 10% by weight, this may lead to excessive increases in the viscosity and hardness, thereby resulting in deterioration of application properties for smooth and soft application, and a difficulty to maintain a creamy viscosity suitable for application of the mascara composition to the eyelashes.

15 **【Mode for Invention】**

Now, the present invention will be described in more detail with reference to the following examples. These examples are provided only for illustrating the present invention and should not be construed as limiting the scope and spirit of the present invention.

20

Examples 1 to 3 and Comparative Examples 1 and 2

Ingredients and composition ratios of mascara compositions are given in Table 1 below. The mascara compositions were prepared according to the following method.

25

【Table 1】

Ingredients	unit: wt%				
	Ex. 1	Ex. 2	Ex. 3	Comp. Ex. 1	Comp. Ex. 2
1.Sorbitan oleate	5.0	5.0	5.0	5.0	5.0
2.Wax	8.0	8.0	8.0	8.0	8.0
3.Behenyl alcohol	5.0	-	2.5	-	-
4.Cetearyl alcohol	-	5.0	2.5	1.0	-
5.Palmitic acid	2.0	2.0	2.0	-	2.0
6.Dimethicone	0.5	0.5	0.5	0.5	0.5
7.Preservative	q.s.	q.s.	q.s.	q.s.	q.s.
8.Stearic acid	4.0	4.0	4.0		4.0
9.Iron oxide	10.0	10.0	10.0	10.0	10.0
10.Alumina powder	5.0	5.0	5.0	-	-
11.Purified water	To 100	To 100	To 100	To 100	To 100
12.Butylene glycol	3.0	3.0	3.0	3.0	3.0
13.Glycerin	5.0	5.0	5.0	5.0	5.0
14.Triethanolamine	1.0	1.0	1.0	-	1.0
15.Ethanol	2.0	2.0	2.0	2.0	2.0
16.Acrylate copolymer	-	-	-	15.0	15.0

Preparation of mascara compositions

- 5 1) Ingredients 1 to 8 were mixed while heating them to 80 °C.
- 2) Ingredients 9 and 10 were added to the mixture of Step 1, followed by stirring.
- 3) Ingredients 11 to 15 were stirred while heating them to 70 °C.
- 4) The mixture of Step 3 was gradually added to the mixture of Step 1 while
- 10 emulsifying them and the resulting mixture was cooled to 45 °C.
- 5) Ingredient 16 was added to the composition of Step 4 while cooling them to 35 °C.
- 6) The thus-obtained product was filled in a mascara container.

15 Experimental Example 1: Measurement of Initial Applicability

In order to compare the applicability of compositions of Examples 1 to 3 with that of compositions of Comparative Examples 1 and 2 prepared according to a conventional method, the applicability of each composition was measured according to the following method. The thus-obtained results are given in Table 2 below.

5 A given amount (1 g) of each composition was applied to the same thickness of 0.1 mm on glass plates using an applicator and was thoroughly dried. The state of composition contents spread on the glass plate, *i.e.* the spread length, was measured with a ruler. Increasing of the thus-measured length was regarded as the composition contents being more softly and smoothly applied and therefore was evaluated to be superior in the applicability.

10 **【Table 2】**

	Ex. 1	Ex. 2	Ex. 3	Comp. Ex. 1	Comp. Ex. 2
Spread length (cm)	15	11	13	5	8

As can be seen from Table 2, compositions of Examples 1 to 3 exhibited excellent applicability, which were prepared by the combined use of a higher fatty alcohol with a triethanolamine-fatty acid ester mixture, obtained by reacting triethanolamine with a fatty acid such as palmitic acid or stearic acid and containing 2 to 5% by weight of the unreacted fatty acid, based on the total weight of the fatty acid, so as to improve the applicability of the composition. In particular, it was found that the composition of Example 1 using behenyl alcohol is highest in the applicability. In addition, it can be seen that the composition of Comparative Example 2, containing triethanolamine, a fatty acid and an acrylate copolymer as a film-forming agent with the exception of a higher fatty alcohol, exhibited superior applicability, as compared to the composition of Comparative Example 1 using an acrylate copolymer with no

triethanolamine and a fatty acid, but showed the applicability inferior to that of Examples 1 to 3 with the co-use of the higher fatty alcohol.

Experimental Example 2: Reapplicability Test (measurement of uniformity)

5 For numerical measurement of the reapplicability for mascara products of Comparative Examples 1 and 2 and mascara products of Examples 1 to 3, application uniformity of each composition was determined. As excellent reapplicability means superior application uniformity, the uniformity was measured. The results thus obtained are set forth in Table 3 below.

10 The measurement of the uniformity was carried out by applying the mascara composition to false eyelashes once. Then, the thus-applied mascara was completely dried and the mascara composition was repeatedly applied 18 times to the eyelashes.

A strand from the midmost of the false eyelashes was picked and divided into three equal parts. Three points of each trisected lashes were magnified under a
15 microscope and the thickness thereof was measured. The piece having a thickness ratio of 1:1:1 was determined to have the highest uniformity. Whereas, the piece having an excessively large or small thickness at any one point out of three points was evaluated to have poor uniformity.

【Table 3】

	Ex. 1	Ex. 2	Ex. 3	Comp. Ex. 1	Comp. Ex. 2
Uniformity	◎	○	○	X	△
Ratio	1:1:1	1:1:1.5	1:1.5:1	1:3:1	1:2:1

20 X – 1:3:1, 1:1:3

△ – 1:2:1, 1:1:2

○ – 1:1.5:1, 1:1:1.5

◎ – 1:1:1

As can be seen from Table 3, the mascara compositions of Examples 1 to 3 were measured to have excellent uniformity, as compared to those of Comparative Examples 1 and 2. In particular, it was confirmed that the mascara composition of Example 1 exhibits significantly high uniformity. Therefore, it can be seen that the mascara compositions of Examples 1 to 3 exhibit excellent reapplicability.

Experimental Example 3: Measurement of Durability

In order to compare smudge of the mascara compositions of Examples 1 to 3 with that of Comparative Examples 1 and 2, water resistance and oil resistance of each composition were measured according to the following method. The results thus obtained are given in Table 4 below.

(1) Measurement of Water Resistance

A given amount of each mascara composition of Examples 1 to 3 and Comparative Examples 1 and 2 was applied to the same thickness on glass plates using an applicator and was thoroughly dried. The glass plates were repeatedly soaked in and taken out from water three times and the state of the glass plates was observed. Thereafter, the glass plates were soaked in water for 10 min and taken out, and the state of the glass plates was observed. The water resistance of the mascara compositions applied to the glass plates was evaluated according to the following criteria, based on the amount of the total applied area separated and precipitated in water.

Good: Less than 10%;

Moderate: 10 to 20%; and

Poor: More than 20%

(2) Measurement of Oil Resistance

A given amount of each mascara composition of Examples 1 to 3 and Comparative Examples 1 and 2 was applied to the same thickness on glass plates using an applicator and was thoroughly dried. The glass plates were repeatedly soaked in and taken out from silicone oil three times and the state of the glass plates was observed. Thereafter, the glass plates were soaked in silicone oil for 10 min and taken out, and the state of the glass plates was observed. The oil resistance of the mascara compositions applied to the glass plates was evaluated according to the following criteria, based on the amount of the total applied area separated and precipitated in silicone oil.

Good: Less than 10%;

Moderate: 10 to 20%; and

Poor: More than 20%

【Table 4】

	Ex. 1	Ex. 2	Ex. 3	Comp. Ex. 1	Comp. Ex. 2
Water resistance	○	○	○	○	○
Oil resistance	○	○	○	△	△

○: Excellent; △: Moderate; and X: Poor

As can be seen from Table 4, the mascara compositions of Examples 1 to 3 exhibited both of excellent water resistance and oil resistance, as compared to those of Comparative Examples 1 and 2. It can be seen through these results that the mascara composition of the present invention exhibits excellent durability.

Experimental Example 4: Measurement of Flake-Off

In order to compare flake-off of the mascara compositions of Examples 1 to 3 and Comparative Examples 1 and 2, flaking of each composition was measured according to the following method. The results thus obtained are set forth in Table 5.

For this purpose, a given amount of each mascara composition was applied to false eyelashes and was thoroughly dried. 10 x 10 cm paper was covered over the eyelashes, and a given load was applied thereto (this procedure was repeated three times using a 5 kg roulette). The state of the paper to which the composition tacked was observed. Thereafter, the state of the false eyelashes was examined. Flake-off of the mascara composition applied to the false eyelashes was evaluated according to the following criteria, based on the amount of the total applied area adhered to the paper.

Good: Less than 10%;

Moderate: 10 to 20%; and

Poor: More than 20%

【Table 5】

	Ex. 1	Ex. 2	Ex. 3	Comp. Ex. 1	Comp. Ex. 2
Flake-off	○	○	○	△	X

○: Excellent; △: Moderate; and x: Poor

As can be seen from Table 5, the mascara compositions of Examples 1 to 3 exhibited both of excellent applicability and low flake-off. It can be seen through these results that the mascara composition of the present invention exhibits good applicability as well as excellent durability without flake-off.

【Industrial Applicability】

As apparent from the above description, a mascara composition of the present invention realizes improved applicability by the combined use of a triethanolamine-fatty acid ester mixture, obtained by reacting triethanolamine with a fatty acid and containing
5 the unreacted fatty acid, in conjunction with a higher fatty alcohol having a long chain, and exhibits excellent reapplicability and superior durability with no smudge and flake-off, by further inclusion of a platelet alumina powder serving as an absorbent, in order to prevent a mascara-smudge problem. Therefore, the mascara composition of the present invention will satisfy demands of various consumers including people who
10 prefer volume-up mascara so as to display voluminous eyelashes via multiple applications of the mascara, due to scant and thin eyelashes, people who prefer mascara capable of achieving soft and smooth application, and people who prefer mascara with excellent durability.

Although the preferred embodiments of the present invention have been
15 disclosed for illustrative purposes, those skilled in the art will appreciate that various modifications, additions and substitutions are possible, without departing from the scope and spirit of the invention as disclosed in the accompanying claims.

【CLAIMS】**【Claim 1】**

A mascara composition comprising a triethanolamine-fatty acid ester mixture obtained by reacting triethanolamine with a C₁₄-C₂₂ fatty acid and containing the
5 unreacted fatty acid in an amount of 2 to 30% by weight, based on the total weight of the fatty acid; a C₁₈-C₂₂ fatty alcohol; and a platelet alumina powder.

【Claim 2】

The composition according to claim 1, wherein the triethanolamine is used in an equivalent ratio of 0.7 to 0.98 relative to the fatty acid.

10 【Claim 3】

The composition according to claim 1, wherein the triethanolamine-fatty acid ester mixture is contained in an amount of 1 to 15% by weight, based on the total weight of the mascara composition.

【Claim 4】

15 The composition according to claim 1, wherein the C₁₈-C₂₂ fatty alcohol is contained in an amount of 0.5 to 30% by weight, based on the total weight of the mascara composition.

【Claim 5】

20 The composition according to claim 1, wherein the platelet alumina powder is contained in an amount of 1 to 10% by weight, based on the total weight of the mascara composition.

【Claim 6】

25 The composition according to any one of claims 1 to 5, wherein the mascara composition is used for improvement of reapplicability, alleviation of smudge and prevention of flake-off.

INTERNATIONAL SEARCH REPORT

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PCT/KR2006/005045**A. CLASSIFICATION OF SUBJECT MATTER***A61K 8/37(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)

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Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched
Korean patents and applications for invention since 1975Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)
PubMed (Key words: mascara, fatty acid soap, triethanolamine, reapplication)**C. DOCUMENTS CONSIDERED TO BE RELEVANT**

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	EP 898,953 A2 (SHISEIDO COMPANY, LTD) 3 Mar. 1999 see abstract, page 3 lines 10-52 and examples	1 - 6
A	US 6,214,329 B1 (REVLON CONSUMER PRODUCTS CORPORATION) 10 Apr. 2001 see abstract, column 11 line 40 - column 12 line 42 and examples	1 - 6
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Further documents are listed in the continuation of Box C.



See patent family annex.

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21 FEBRUARY 2007 (21.02.2007)

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