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(54) Title: LONG-WEAR COMPOSITIONS CONTAINING SILICONE RESIN AND SILICONE ELASTOMER RESIN

(57) Abstract: Compositions including at least one silicone resin comprising at least one T unit and at least one silicone elastomer resin, as well as methods of making such compositions and methods of applying such compositions to keratinous material are provided.

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## TITLE OF THE INVENTION

LONG-WEAR COMPOSITIONS CONTAINING SILICONE RESIN AND SILICONE  
ELASTOMER RESIN

## CROSS-REFERENCE TO RELATED APPLICATIONS

**[0001]** This application claims the benefit of priority from U.S. non-provisional application no. 15/421,344, filed January 31, 2017, the entire contents of which is hereby incorporated by reference.

## FIELD OF THE INVENTION

**[0002]** The present invention relates to compositions comprising at least one silicone resin comprising at least one T unit and at least one silicone elastomer resin. Among other improved or beneficial properties, these compositions have surprisingly good long-wear and/or transfer-resistance properties.

## DISCUSSION OF THE BACKGROUND

**[0003]** Many cosmetic compositions, including pigmented cosmetics such as foundations, mascaras and lipsticks, have been formulated in an attempt to possess long wearing properties upon application. Unfortunately, many of these compositions do not generally possess both good long-wear/transfer-resistance properties as well as

good application properties, good comfort properties and/or good appearance properties (for example, matte properties).

**[0004]** For example, with respect to lip compositions, commercial products containing silicon resins such as MQ resins are known. Such products are known to provide good long wear properties and/or transfer-resistance. However, such products possess poor application properties and/or poor feel upon application (for example, feels rough). Therefore, a second composition (topcoat) is separately applied to such products to improve poor properties of the compositions to make the products acceptable to consumers. Furthermore, the topcoat composition must be reapplied continually so that the product remains acceptable to consumers, meaning that the products are effectively not "long-wearing" as they require constant maintenance and reapplication.

**[0005]** Also, with respect to foundations, such products can provide good long wear properties and/or transfer-resistance. However, such long-wearing/transfer-resistant products can possess poor application and/or feel upon properties application, as well as poor matte properties.

**[0006]** Thus, there remains a need for improved compositions having improved cosmetic properties, particularly good wear, transfer-resistance, smudge-resistance, feel and/or matte characteristics upon application.

**[0007]** Accordingly, one aspect of the present invention is a care and/or makeup and/or treatment composition for keratinous materials which has good cosmetic properties such as, for example, good wear,

transfer-resistance, smudge-resistance, feel and/or matte properties upon application, and which can be applied without having to engage in a multi-step application process.

#### SUMMARY OF THE INVENTION

**[0008]** The present invention relates to compositions comprising at least one silicone resin comprising at least one T unit and at least one silicone elastomer resin.

**[0009]** The present invention also relates to emulsion compositions comprising water, at least one silicone resin comprising at least one T unit and at least one silicone elastomer resin.

**[0010]** The present invention also relates to anhydrous compositions comprising at least one silicone resin comprising at least one T unit and at least one silicone elastomer resin.

**[0011]** The present invention also relates to colored compositions comprising at least one silicone resin comprising at least one T unit and at least one silicone elastomer resin.

**[0012]** The present invention also relates to methods of treating, caring for and/or making up keratinous materials such as, for example, lips, skin or eyelashes, by applying compositions of the present invention to a keratinous material in an amount sufficient to treat, care for and/or make up the keratinous material.

**[0013]** The present invention also relates to methods of enhancing the appearance of keratinous materials such as, for example, lips, skin or eyelashes, by applying compositions of the present invention

to a keratinous material in an amount sufficient to enhance the appearance of the keratinous material.

**[0014]** It is to be understood that both the foregoing general description and the following detailed description are exemplary and explanatory only, and are not restrictive of the invention.

#### DETAILED DESCRIPTION OF THE INVENTION

**[0015]** As used herein, the expression "at least one" means one or more and thus includes individual components as well as mixtures/combinations.

**[0016]** Other than in the operating examples, or where otherwise indicated, all numbers expressing quantities of ingredients and/or reaction conditions are to be understood as being modified in all instances by the term "about," meaning within 10% to 15% of the indicated number.

**[0017]** "Film former" or "film forming agent" as used herein means any material such as, for example, a polymer or a resin that leaves a film on the substrate to which it is applied.

**[0018]** "Polymer" as used herein means a compound which is made up of at least two monomers.

**[0019]** "Keratinous materials" includes materials containing keratin such as hair, skin, eyebrows, lips and nails.

**[0020]** "Substituted" as used herein, means comprising at least one substituent. Non-limiting examples of substituents include atoms, such as oxygen atoms and nitrogen atoms, as well as functional groups, such as hydroxyl groups, ether groups, alkoxy groups, acyloxyalkyl groups,

oxyalkylene groups, polyoxyalkylene groups, carboxylic acid groups, amine groups, acylamino groups, amide groups, halogen containing groups, ester groups, thiol groups, sulphonate groups, thiosulphate groups, siloxane groups, hydroxyalkyl groups, and polysiloxane groups. The substituent(s) may be further substituted.

**[0021]** "Volatile", as used herein, means having a flash point of less than about 100°C.

**[0022]** "Non-volatile", as used herein, means having a flash point of greater than about 100°C.

**[0023]** "Anhydrous" means the compositions contain less than 1% water. Preferably, the compositions of the present invention contain less than 0.5% water, and most preferably no water.

**[0024]** "Transfer" as used herein refers to the displacement of a fraction of a composition which has been applied to a keratinous material by contact with another substrate, whether of the same nature or of a different nature. For example, when a composition such as an eyeshadow, eyeliner or mascara has been applied, the composition can be transferred onto hands by rubbing or by contact of the hands with the eyes. By way of further example, when a composition such as a lipstick has been applied, the composition can be transferred onto teeth or hands, or onto the cheek of another person. Irrespective of composition type, the composition can also transfer from the keratinous material to which it has been applied to another substrate such as napkins, collars, glasses, cups or other containers.

**[0025]** "Transfer-resistance" as used herein refers to the quality exhibited by a composition in resisting transfer. To determine transfer-resistance, the amount of composition transferred from a keratinous material to a substrate may be evaluated and compared. For example, a composition may be transfer-resistant if, after application to a keratinous material such as lips, skin or eyelashes and contact with a substrate, a majority of the composition is left on the wearer. Further, the amount transferred may be compared with that transferred by other compositions, such as commercially-available compositions. In a preferred embodiment of the present invention, little or no composition is transferred to the substrate from the keratinous material.

**[0026]** "Long wear" compositions as used herein refers to compositions where the compositions, after application to a keratinous material, do not transfer or smudge after contact with another substrate and retain a consistent appearance on the keratinous material for an extended period of time. "Long wear" compositions, as used herein can also refer to compositions where color remains the same or substantially the same as at the time of application, as viewed by the naked eye, after an extended period of time. Long wear properties may be evaluated by any method known in the art for evaluating such properties. For example, long wear may be evaluated by a test involving the application of a composition to keratinous materials such as skin, eyelashes or lips and evaluating the color of the composition after an extended period of time. For example, the color of a composition may be evaluated immediately following application to the keratinous material and these characteristics may then be re-evaluated and

compared after a certain amount of time. Further, these characteristics may be evaluated with respect to other compositions, such as commercially available compositions. Additionally, long wear properties may be evaluated by applying a sample, allowing it to dry, and then abrading the sample to determine removal/loss of sample.

**[0027]** The composition of the present invention may be in any form, either liquid or non-liquid (semi-solid, soft solid, solid, etc.). For example, it may be a paste, a solid, a gel, or a cream. It may be an emulsion, such as an oil-in-water or water-in-oil emulsion, a multiple emulsion, such as an oil-in-water-in-oil emulsion or a water-in-oil-in-water emulsion, or a solid, rigid or supple gel. The composition of the invention may, for example, comprise an external or continuous fatty phase. The composition can also be a molded composition or cast as a stick or a dish.

**[0028]** The compositions and methods of the present invention can comprise, consist of, or consist essentially of the essential elements and limitations of the invention described herein, as well as any additional or optional ingredients, components, or limitations described herein or otherwise useful in personal care.

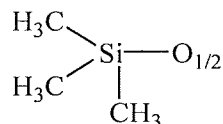
**[0029]** Silicone Resin Comprising At Least One T Unit

**[0030]** As used herein, the term "resin" means a crosslinked or non-crosslinked three-dimensional structure. Silicone resin nomenclature is known in the art as "MDTQ" nomenclature, whereby a silicone resin is described according to the various monomeric siloxane units which make up the polymer.

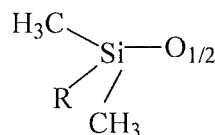


**[0031]** Each letter of "MDTQ" denotes a different type of unit.

The letter M denotes the monofunctional unit  $(\text{CH}_3)_3\text{SiO}_{1/2}$ . This unit is considered to be monofunctional because the silicone atom only shares on oxygen when the unit is part of a polymer. The "M" unit can be represented by the following structure:

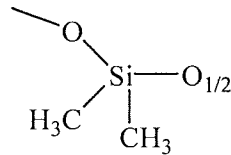


**[0032]** At least one of the methyl groups of the M unit may be replaced by another group, e.g., to give a unit with formula  $[\text{R}(\text{CH}_3)_2]\text{SiO}_{1/2}$ , as represented in the following structure:



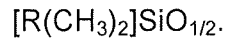
**[0033]** wherein R is chosen from groups other than methyl groups. Non-limiting examples of such groups other than methyl groups include alkyl groups other than methyl groups, alkene groups, alkyne groups, hydroxyl groups, thiol groups, ester groups, acid groups, ether groups, wherein the groups other than methyl groups may be further substituted.

**[0034]** The symbol D denotes the difunctional unit  $(\text{CH}_3)_2\text{SiO}_{2/2}$  wherein two oxygen atoms bonded to the silicone atom are used for binding to the rest of the polymer. The "D" unit, which is the major building block of dimethicone oils, can be represented as:

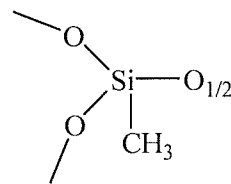


[0035]

[0036] At least one of the methyl groups of the D unit may be replaced by another group, e.g., to give a unit with formula

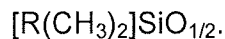


[0037] The symbol T denotes the trifunctional unit,  $(CH_3)_2SiO_{3/2}$  and can be represented as:



[0038]

[0039] At least one of the methyl groups of the T unit may be replaced by another group, e.g., to give a unit with formula



[0040] Finally, the letter Q means a tetrafunctional unit  $SiO_{4/2}$  in which the silicon atom is bonded to four hydrogen atoms, which are themselves bonded to the rest of the polymer.

[0041] Thus, a vast number of different silicone polymers can be manufactured. Further, it would be clear to one skilled in the art that the properties of each of the potential silicone polymers will vary depending on the type(s) of monomer(s), the type(s) of substitution(s), the size of the polymeric chain, the degree of cross linking, and size of any side chain(s).

[0042] Suitable silicone resins comprising at least one T unit in accordance with the present invention are disclosed, for example, in U.S. patent applications 2007/0166271, 2011/0038820, 2011/0002869,

and 2009/0214458, the entire contents of which are hereby incorporated by reference in their entirety.

**[0043]** Where the silicone resin contains at least one T unit, it may thus be, for example, a T, MT, MTQ or MDTQ resin.

**[0044]** According to preferred embodiments, the unit composition of the silicone resin can be at least 50% T units, or at least 70% T units, or at least 80% T units, or at least 90% T units.

**[0045]** In the M, D and T units listed as examples above, at least one of the methyl groups may be substituted. According to preferred embodiments, the at least one silicone resin comprising at least one trifunctional unit of formula  $(R)SiO_{3/2}$  is chosen from the silsesquioxanes of formula:  $((R')SiO_{3/2})_x$ , in which x ranges from 100 to 500 and R' is chosen, independently by trifunctional unit, from a hydrocarbon-based group containing from 1 to 10 carbon atoms or a hydroxyl group, on the condition that at least one R' is a hydrocarbon-based group. According to preferred embodiments, the hydrocarbon-based group containing from 1 to 10 carbon atoms is a methyl group. According to preferred embodiments, the at least one silicone resin comprising at least one trifunctional unit of formula  $(R)SiO_{3/2}$  is chosen from the silsesquioxanes of the formula:  $((R')SiO_{3/2})_x$ , in which x ranges from 100 to 500 and R' is chosen, independently by unit, from  $CH_3$ , a hydrocarbon-based group containing from 2 to 10 carbon atoms, or a hydroxyl group, on the condition that at least one R' is a hydrocarbon-based group.

**[0046]** According to preferred embodiments, the resins may contain M, D and Q units such that at least 80 mol % or at least 90 mol %, relative to the total amount of silicones, are T units. The T resins may also contain hydroxyl and/or alkoxy groups. The resins may have a total weight of hydroxyl functions ranging from 2% to 10% and a total weight of alkoxy functions that may be up to 20%; in some embodiments, the total weight of hydroxyl functions ranges from 4% to 8% and the total weight of alkoxy functions may be up to 10%.

**[0047]** The resin may be chosen from silsesquioxanes that are represented by the following formula:  $((\text{CH}_3)\text{SiO}_{3/2})_x$ , in which x may be up to several thousand and the  $\text{CH}_3$  group may be replaced with an R group, as described previously in the definition of the T units. The number x of T units of the silsesquioxane may be less than or equal to 500, or it may range from 50 to 500, including all ranges and subranges therebetween. The molecular weight of the silicone resin may range from 500 to 50,000 g/mol, from 500 to 20,000 g/mol, or from 500 to 10,000 g/mol, including all ranges and subranges therebetween.

**[0048]** As suitable examples of these silicone resins containing at least one T unit, mention may be made of:

**[0049]** polysilsesquioxanes of formula  $((\text{R})\text{SiO}_{3/2})_x$  (T units) in which x is greater than 100, in which the R groups may independently be methyl or other substituents as defined above;

**[0050]** polymethylsilsesquioxanes, which are polysilsesquioxanes in which R is a methyl group. Such polymethylsilsesquioxanes are described, for example, in U.S. Pat. No.

5,246,694, the entire contents of which is hereby incorporated by reference in its entirety;

**[0051]** polypropylsilsesquioxanes, in which R is a propyl group. These compounds and their synthesis are described, for example, in patent application WO 2005/075567, the entire contents of which is hereby incorporated by reference in its entirety; and

**[0052]** polyphenylsilsesquioxanes, in which R is a phenyl group. These compounds and their synthesis are described, for example, in patent application US 2004/0180011, the entire contents of which is hereby incorporated by reference in its entirety.

**[0053]** Examples of commercially available polymethylsilsesquioxane resins that may be mentioned include those sold:

**[0054]** by the company Wacker under the reference Resin MK such as Belsil PMS MK: polymer comprising  $\text{CH}_3\text{SiO}_{3/2}$  repeating units (T units), which may also comprise up to 1% by weight of  $(\text{CH}_3)_2\text{SiO}_{2/2}$  units (D units) and having an average molecular weight of about 10 000 g/mol. It is thought that the polymer is in a "cage" and "ladder" configuration as represented in the figures below. The average molecular weight of the units in "cage" configuration has been calculated as 536 g/mol. The majority of the polymer is in the "ladder" configuration with ethoxy groups at the ends. These ethoxy groups represent 4.5% by mass of the polymer. As these end groups can react with water, a small and variable amount of SiOH groups may also be present; and

**[0055]** by the company Shin-Etsu under the references KR-220L, which are composed of T units of formula  $\text{CH}_3\text{SiO}_{3/2}$  and have Si--OH (silanol) end groups, under the reference KR-242A, which comprise 98% of T units and 2% of dimethyl D units and have Si--OH end groups or alternatively under the reference KR-251 comprising 88% of T units and 12% of dimethyl D units and have Si--OH end groups.

**[0056]** Examples of commercially available polypropylsilsesquioxane resins that may be mentioned include those sold:

**[0057]** by the company Dow Corning under the reference Dow Corning 670 Fluid or 680 Fluid. Typically such commercially available products are polypropylsilsesquioxane diluted in volatile oil such as volatile hydrocarbon oil or volatile silicone oil such as D5. Dow Corning 670 and 680 Fluids have a general formula of  $\text{R}_n\text{SiO}_{(4-n)/2}$  wherein R is independently chosen from a hydrogen atom and a monovalent hydrocarbon group comprising 3 carbon atoms, wherein more than 80 mole % of R are propyl groups, n is a value from 1.0 to 1.4, more than 60 mole % of the copolymer comprises  $\text{RSiO}_{3/2}$  units, and having a hydroxyl or alkoxy content from 0.2 to 10% by weight, for example between 1 and 4% by weight, preferably between 5 and 10% by weight, and more preferably between 6 and 8% by weight. Preferably, the polypropylsilsesquioxane resin has a molecular weight from about 5000 to about 30,000 and a T<sub>g</sub> from about -5°C to about 5°C.

**[0058]** Examples of commercially available polyphenylsilsesquioxane resins that may be mentioned include those sold:

**[0059]** by the company Dow Corning under the reference Dow Corning 217 Flake Resin, which is a polyphenylsilsesquioxane with silanol end groups; and

**[0060]** by the company Wacker under the reference Belsil SPR 45 VP.

**[0061]** The silicone resin comprising at least one T unit preferably is present in the compositions of the present invention in an active solid content amount ranging from about 0.1% to about 10%, preferably from about 2% to about 8%, and preferably from about 3% to about 7%, by weight with respect to the total weight of the composition, including all ranges and subranges therebetween.

**[0062]** Silicone Elastomer Resin

**[0063]** In accordance with the present invention, compositions comprising at least one silicone elastomer resin are provided. A “silicone elastomer resin” is a compound which comprises a “silicone elastomer” portion and a “resin” portion. Silicone elastomer resins are described or referenced in U.S. patents 8,987,373 and 9,175,139 as well as in U.S. patent application publication no. 2015/0073059, the entire contents of all of which are hereby incorporated by reference.

**[0064]** The silicone elastomer resin preferably has a particle size ranging from 0.1 to 500  $\mu\text{m}$ , preferably from 3 to 200  $\mu\text{m}$  and preferably

from 3 to 50  $\mu\text{m}$ . The silicone elastomer resin can have any shape and, for example, can be spherical, flat or amorphous.

**[0065]** According to preferred embodiments, when placed in solvent, the silicone elastomer resin does not substantially swell (as opposed to typical silicone elastomers which swell upon introduction into solvent). Preferably, when placed in solvent, the silicone elastomer resin swells (increases in size) by less than 10% of the size of the silicone elastomer resin (in an unswelled state), preferably less than 7.5% of the size of silicone elastomer resin (in an unswelled state), preferably less than 5% of the size of silicone elastomer resin (in an unswelled state), preferably less than 2.5% of the size of silicone elastomer resin (in an unswelled state), preferably less than 1% of the size of silicone elastomer resin (in an unswelled state).

**[0066]** With respect to the silicone elastomer portion, this portion corresponds to polyorganosiloxanes commonly known as silicone elastomers. "Elastomer" is generally understood in the art to mean a flexible and deformable solid material having viscoelastic properties. However, its modulus of elasticity is such that it is resistant to deformation and has a limited ability to expand and to contract.

**[0067]** The silicone elastomer portion is preferably partially or completely crosslinked. The degree of crosslinking can vary depending on the elastic properties desired. Cross-linking materials may be hydrophilic (ethylene oxide and propylene oxide, for example), hydrophobic (dimethicone, vinyl dimethicone, alkyl, etc.) or combinations thereof.



**[0068]** The silicone elastomer portion preferably has a particle size ranging from 0.1 to 500  $\mu\text{m}$ , preferably from 3 to 200  $\mu\text{m}$  and preferably from 3 to 50  $\mu\text{m}$ . The portion can have any shape and, for example, can be spherical, flat or amorphous.

**[0069]** Crosslinking can be obtained, for example, by a crosslinking addition reaction of a diorganopolysiloxane comprising at least one hydrogen atom bonded to a silicon atom and a diorganopolysiloxane having at least two groups comprising ethylenic unsaturation bonded to separate silicon atoms, in particular in the presence of a platinum catalyst; or by a crosslinking condensation/dehydrogenation reaction between a diorganopolysiloxane comprising hydroxyl endings and a diorganopolysiloxane comprising at least one hydrogen atom bonded to a silicon atom, in particular in the presence of an organotin compound; or by a crosslinking condensation reaction of a diorganopolysiloxane comprising hydroxyl endings and of a hydrolysable organopolysilane; or by thermal crosslinking of an organopolysiloxane, in particular in the presence of an organoperoxide catalyst; or by crosslinking of an organopolysiloxane by high energy radiation, such as gamma rays, ultraviolet rays or an electron beam.

**[0070]** Crosslinking can be obtained, for example, by a crosslinking addition reaction (A) of a diorganopolysiloxane comprising at least one hydrogen atom bonded to a silicon atom and (B) of a diorganopolysiloxane having at least two groups comprising ethylenic unsaturation each bonded to a separate silicon atom, in particular in the

presence (C) of a platinum catalyst, as, for example, disclosed in Application EP-A-295 886.

**[0071]** The organic groups bonded to the silicon atoms of the compound (A) can be alkyl groups, such as methyl, ethyl, propyl, butyl or octyl; substituted alkyl groups, such as 2-phenylethyl, 2-phenylpropyl or 3,3,3-trifluoropropyl; aryl groups, such as phenyl, tolyl or xylyl; substituted aryl groups, such as phenylethyl; and substituted monovalent hydrocarbonaceous groups, such as an epoxy group, a carboxylate ester group or a mercapto group. The compound (A) can thus be chosen from methylhydropolysiloxanes comprising trimethylsiloxy endings, dimethylsiloxane/methylhydrosiloxane copolymers comprising trimethylsiloxy endings or dimethylsiloxane/methylhydrosiloxane cyclic copolymers.

**[0072]** The compound (B) is advantageously a diorganopolysiloxane having at least two lower (for example C<sub>2-4</sub>) alkenyl groups; the lower alkenyl group can be chosen from vinyl, allyl and propenyl groups. These lower alkenyl groups can be situated in any position on the organopolysiloxane molecule but are preferably situated at the ends of the organopolysiloxane molecule. The organopolysiloxane (B) can have a branched-chain, linear-chain, cyclic or network structure but the linear-chain structure is preferred. In addition to the abovementioned alkenyl groups, the other organic groups bonded to the silicon atoms in the compound (B) can be alkyl groups, such as methyl, ethyl, propyl, butyl or octyl; substituted alkyl groups, such as 2-phenylethyl, 2-phenylpropyl or 3,3,3-trifluoropropyl; aryl groups, such as phenyl, tolyl or xylyl; substituted

aryl groups, such as phenylethyl; and substituted monovalent hydrocarbonaceous groups, such as an epoxy group, a carboxylate ester group or a mercapto group. The organopolysiloxanes (B) can be chosen from methylvinylpolysiloxanes, methylvinylsiloxane/dimethylsiloxane copolymers, dimethylpolysiloxanes comprising dimethylvinylsiloxyl endings, dimethylsiloxane/methylphenylsiloxane copolymers comprising dimethylvinylsiloxyl endings, dimethylsiloxane/diphenylsiloxane/methylvinylsiloxane copolymers comprising dimethylvinylsiloxyl endings, dimethylsiloxane/methylvinylsiloxane copolymers comprising trimethylsiloxyl endings, dimethylsiloxane/methylphenylsiloxane/methylvinylsiloxane copolymers comprising trimethylsiloxyl endings, methyl(3,3,3-trifluoropropyl)polysiloxanes comprising dimethylvinylsiloxyl endings and dimethylsiloxane/methyl(3,3,3-trifluoropropyl)siloxane copolymers comprising dimethylvinylsiloxyl endings.

**[0073]** According to preferred embodiments, crosslinking is at least partially accomplished by the resin portion. Preferably, the crosslinking in the silicone elastomer resin is due only to the resin portion.

**[0074]** With respect to the resin portion, using the same silicone resin nomenclature ("MDTQ") as discussed above, the resin portion can be described according to the various monomeric siloxane units which make up the polymer.

**[0075]** The letter M represents the monofunctional unit, for example, of formula  $(\text{CH}_3)_3\text{SiO}_{1/2}$ , the silicon atom being connected to only one oxygen atom in the polymer comprising this unit.

**[0076]** The letter D means a difunctional unit, for example,  $(\text{CH}_3)_2\text{SiO}_{2/2}$  in which the silicon atom is connected to two oxygen atoms.

**[0077]** The letter T represents a trifunctional unit, for example, of formula  $(\text{CH}_3)\text{SiO}_{3/2}$ .

**[0078]** The letter Q means a tetrafunctional unit  $\text{SiO}_{4/2}$  in which the silicon atom is bonded to four hydrogen atoms, which are themselves bonded to the rest of the polymer.

**[0079]** So, for example, the resin portion can be a T resin, a MQ resin ("trimethylsiloxysilicate"), a MT resin, a MDT resin, a MDQ resin, etc.

**[0080]** In the M, D and T units listed as examples above, at least one of the methyl groups may be substituted with a hydrocarbon-based group containing from 1 to 10 carbon atoms or a hydroxyl group. According to preferred embodiments, the hydrocarbon-based group containing from 1 to 10 carbon atoms is a methyl group.

**[0081]** Suitable examples of silicone elastomer resins include vinyl dimethyl/trimethylsiloxysilicate stearyl dimethicone crosspolymer, available as BELSIL® RG 90 elastomer gel (Isododecane (and Vinyl dimethyl/trimethylsiloxysilicate stearyl dimethicone crosspolymer) from Wacker; Dimethicone/Vinyltrimethylsiloxysilicate Crosspolymer, available as BELSIL® REG 1102 (DIMETHICONE, DIMETHICONE/ VINYLTRIMETHYLSILOXYSILICATE CROSSPOLYMER) from Wacker; and Dimethicone/Vinyltrimethylsiloxysilicate Crosspolymer, available as BELSIL® REG 102 (Cyclopentasiloxane, Dimethicone/Vinyltrimethylsiloxysilicate Crosspolymer) from Wacker.

**[0082]** The silicone elastomer resins can be dissolved in a suitable solvent, either prior to their introduction into the composition of the invention, or in situ within the composition. Examples of suitable solvents, include, but are not limited to, volatile and non-volatile silicones, volatile and non-volatile alcohols, volatile and non-volatile esters, volatile and non-volatile hydrocarbons and mixtures thereof.

**[0083]** The silicone elastomer resin preferably is present in the compositions of the present invention in an active solid content amount ranging from about 0.1% to about 10%, preferably from about 2% to about 8%, and preferably from about 3% to about 7%, by weight with respect to the total weight of the composition, including all ranges and subranges therebetween.

**[0084]** According to preferred embodiments, the silicone resin comprising at least one T unit and silicone elastomer resin are present in the compositions of the present invention in an active solid content weight ratio of 600:1 to 1:300, preferably a weight ratio of 100:1 to 1:40, and preferably a weight ratio of 40:1 to 1:15, including all ranges and subranges therebetween. Preferably, the silicone resin comprising at least one T unit and silicone elastomer resin are present in the compositions of the present invention in an active solid content weight ratio of about 40:1 to 1:15.

**[0085]** Coloring Agents

**[0086]** According to preferred embodiments of the present invention, compositions further comprising at least one coloring agent are provided. Preferably, the coloring agent is chosen from pigments (surface-

treated or non-surface-treated), dyes, such as liposoluble dyes, nacreous pigments, and pearling agents.

**[0087]** Representative liposoluble dyes which may be used according to the present invention include Sudan Red, DC Red 17, DC Green 6,  $\beta$ -carotene, soybean oil, Sudan Brown, DC Yellow 11, DC Violet 2, DC Orange 5, annatto, and quinoline yellow. The liposoluble dyes, when present, generally have a concentration ranging up to 40% by weight of the total weight of the composition, such as from 0.0001% to 30%, including all ranges and subranges therebetween.

**[0088]** The nacreous pigments which may be used according to the present invention may be chosen from colored nacreous pigments such as titanium mica with iron oxides, titanium mica with ferric blue or chromium oxide, titanium mica with an organic pigment chosen from those mentioned above, and nacreous pigments based on bismuth oxychloride. The nacreous pigments, if present, be present in the composition in a concentration ranging up to 50% by weight of the total weight of the composition, such as from 0.0001% to 40%, preferably from 0.001% to 30%, including all ranges and subranges therebetween.

**[0089]** Suitable pigments can be white or colored, inorganic and/or organic and coated or uncoated. Mention may be made, for example, of inorganic pigments such as titanium dioxide, optionally surface treated, zirconium or cerium oxides and iron or chromium oxides, manganese violet, ultramarine blue, chromium hydrate and ferric blue. Mention may also be made, among organic pigments, of carbon black, pigments of D & C type and lakes based on cochineal carmine or on

barium, strontium, calcium or aluminum, such as D&C Red No. 10, 11, 12, and 13, D&C Red No. 7, D&C Red No. 5 and 6, and D&D Red No. 34, as well as lakes such as D&C Yellow Lake No. 5 and D&C Red Lake No. 2.

**[0090]** If present, the coloring agents may be present in the composition in a concentration ranging up to 50 % by weight of the total weight of the composition, such as from 0.0001% to 40%, and further such as from 0.001% to 30%, including all ranges and subranges therebetween.

**[0091]** Oil Phase

**[0092]** According to preferred embodiments of the present invention, compositions further comprising at least one fatty substance are provided. Suitable fatty substances include oil(s) and/or wax(es). "Oil" means any non-aqueous medium which is liquid at ambient temperature (25°C) and atmospheric pressure (760 mm Hg). A "wax" for the purposes of the present disclosure is a lipophilic fatty compound that is solid at ambient temperature (25°C) and changes from the solid to the liquid state reversibly, having a melting temperature of more than 30°C and, for example, more than 45°C, which can be as high as 150°C, a hardness of more than 0.5 MPa at ambient temperature, and an anisotropic crystalline organization in the solid state. By taking the wax to its melting temperature, it is possible to use wax(es) by themselves as carriers and/or it is possible to make wax(es) miscible with the oils to form a microscopically homogeneous mixture.

**[0093]** Suitable oils include volatile and/or non-volatile oils. Such oils can be any acceptable oil including but not limited to silicone oils and/or hydrocarbon oils.

**[0094]** According to certain embodiments, the compositions of the present invention preferably comprise one or more volatile silicone oils. Examples of such volatile silicone oils include linear or cyclic silicone oils having a viscosity at room temperature less than or equal to 6cSt and having from 2 to 7 silicon atoms, these silicones being optionally substituted with alkyl or alkoxy groups of 1 to 10 carbon atoms. Specific oils that may be used in the invention include octamethyltetrasiloxane, decamethylcyclopentasiloxane, dodecamethylcyclohexasiloxane, heptamethyloctyltrisiloxane, hexamethyldisiloxane, decamethyltetrasiloxane, dodecamethylpentasiloxane and their mixtures. Other volatile oils which may be used include KF 96A of 6 cSt viscosity, a commercial product from Shin Etsu having a flash point of 94°C. Preferably, the volatile silicone oils have a flash point of at least 40°C.

**[0095]** Non-limiting examples of volatile silicone oils are listed in Table 1 below.

**[0096]** Table 1

Compound	Flash Point (°C)	Viscosity (cSt)
Octyltrimethicone	93	1.2
Hexyltrimethicone	79	1.2
Decamethylcyclopentasiloxane (cyclopentasiloxane or D5)	72	4.2
Octamethylcyclotetrasiloxane (cyclotetradimethylsiloxane or D4)	55	2.5
Dodecamethylcyclohexasiloxane (D6)	93	7
Decamethyltetrasiloxane(L4)	63	1.7
KF-96 A from Shin Etsu	94	6
PDMS (polydimethylsiloxane) DC 200 (1.5cSt) from Dow Corning	56	1.5
PDMS DC 200 (2cSt) from Dow Corning	87	2



**[0097]** Further, a volatile linear silicone oil may be employed in the present invention. Suitable volatile linear silicone oils include those described in U.S. patent no. 6,338,839 and WO03/042221, the contents of which are incorporated herein by reference. In one embodiment the volatile linear silicone oil is decamethyltetrasiloxane. In another embodiment, the decamethyltetrasiloxane is further combined with another solvent that is more volatile than decamethyltetrasiloxane.

**[0098]** According to certain embodiments of the present invention, the composition of preferably comprises one or more non-silicone volatile oils and may be selected from volatile hydrocarbon oils, volatile esters and volatile ethers. Examples of such volatile non-silicone oils include, but are not limited to, volatile hydrocarbon oils having from 8 to 16 carbon atoms and their mixtures and in particular branched C8 to C16 alkanes such as C8 to C16 isoalkanes (also known as isoparaffins), isohexacecane, isododecane, isodecane, and for example, the oils sold under the trade names of Isopar or Permethyl. Preferably, the volatile non-silicone oils have a flash point of at least 40°C.

**[0099]** Non-limiting examples of volatile non-silicone volatile oils are given in Table 2 below.

Table 2

Compound	Flash Point (°C)
Isododecane	43
Propylene glycol n-butyl ether	60
Ethyl 3-ethoxypropionate	58
Propylene glycol methylether acetate	46
Isopar L (isoparaffin C <sub>11</sub> -C <sub>13</sub> )	62
Isopar H (isoparaffin C <sub>11</sub> -C <sub>12</sub> )	56

**[00100]** The volatility of the solvents/oils can be determined using the evaporation speed as set forth in U.S. patent no. 6,338,839, the contents of which are incorporated by reference herein.

**[0079]** According to certain embodiments of the present invention, the composition comprises at least one non-volatile oil. Examples of non-volatile oils that may be used in the present invention include, but are not limited to, polar oils such as:

**[0080]** - hydrocarbon-based plant oils with a high triglyceride content consisting of fatty acid esters of glycerol, the fatty acids of which may have varied chain lengths, these chains possibly being linear or branched, and saturated or unsaturated; these oils are especially wheat germ oil, corn oil, sunflower oil, karite butter, castor oil, sweet almond oil, macadamia oil, apricot oil, soybean oil, rapeseed oil, cottonseed oil, alfalfa oil, poppy oil, pumpkin oil, sesame seed oil, marrow oil, avocado oil, hazelnut oil, grape seed oil, blackcurrant seed oil, evening primrose oil, millet oil, barley oil, quinoa oil, olive oil, rye oil, safflower oil, candlenut oil, passion flower oil or musk rose oil; or caprylic/capric acid triglycerides, for instance those sold by the company Stearineries Dubois or those sold under the names Miglyol 810, 812 and 818 by the company Dynamit Nobel;

**[0081]** - synthetic oils or esters of formula  $R_5COOR_6$  in which  $R_5$  represents a linear or branched higher fatty acid residue containing from 1 to 40 carbon atoms, including from 7 to 19 carbon atoms, and  $R_6$  represents a branched hydrocarbon-based chain containing from 1 to 40 carbon atoms, including from 3 to 20 carbon atoms, with  $R_6 + R_7 \geq 10$ ,

such as, for example, Purcellin oil (cetostearyl octanoate), isononyl isononanoate, octyldodecyl neopentanoate, C<sub>12</sub> to C<sub>15</sub> alkyl benzoate, isopropyl myristate, 2-ethylhexyl palmitate, and octanoates, decanoates or ricinoleates of alcohols or of polyalcohols; hydroxylated esters, for instance isostearyl lactate or diisostearyl malate; and pentaerythritol esters;

**[0082]** - synthetic ethers containing from 10 to 40 carbon atoms;

**[0083]** - C<sub>8</sub> to C<sub>26</sub> fatty alcohols, for instance oleyl alcohol, cetyl alcohol, stearyl alcohol, and cetearyl alcohol; and

**[0084]** - mixtures thereof.

**[0085]** Further, examples of non-volatile oils that may be used in the present invention include, but are not limited to, non-polar oils such as branched and unbranched hydrocarbons and hydrocarbon waxes including polyolefins, in particular Vaseline (petrolatum), paraffin oil, squalane, squalene, hydrogenated polyisobutene, hydrogenated polydecene, polybutene, mineral oil, pentahydrosqualene, and mixtures thereof.

**[0086]** According to preferred embodiments, if present, then at least one oil is present in the compositions of the present invention in an amount ranging from about 5 to about 80% by weight, more preferably from about 10 to about 70% by weight, and most preferably from about 15 to about 60% by weight, based on the total weight of the composition, including all ranges and subranges within these ranges.

**[0087]** According to preferred embodiments of the present invention, the compositions of the present invention further comprise at

least one wax. Suitable examples of waxes that can be used in accordance with the present disclosure include those generally used in the cosmetics field: they include those of natural origin, such as beeswax, carnauba wax, candelilla wax, ouricoury wax, Japan wax, cork fibre wax or sugar cane wax, rice bran wax, rice wax, montan wax, paraffin wax, lignite wax or microcrystalline wax, ceresin or ozokerite, and hydrogenated oils such as hydrogenated castor oil or jojoba oil; synthetic waxes such as the polyethylene waxes obtained from the polymerization or copolymerization of ethylene, and Fischer-Tropsch waxes, or else esters of fatty acids, such as octacosanyl stearate, glycerides which are concrete at 30°C, for example at 45°C.

**[0088]** According to particularly preferred embodiments of the present invention, the compositions of the present invention further include at least one silicone wax. Examples of suitable silicone waxes include, but are not limited to, silicone waxes such as alkyl- or alkoxydimethicones having an alkyl or alkoxy chain ranging from 10 to 45 carbon atoms, poly(di)methylsiloxane esters which are solid at 30°C. and whose ester chain comprising at least 10 carbon atoms, di(1,1,1-trimethylolpropane) tetrastearate, which is sold or manufactured by Heterene under the name HEST 2T-4S; alkylated silicone acrylate copolymer waxes comprising at least 40 mole % of siloxy units having the formula  $(R_2R'SiO_{1/2})_x(R''SiO_{3/2})_y$ , where x and y have a value of 0.05 to 0.95, R is an alkyl group having from 1 to 8 carbon atoms, an aryl group, a carbinol group, or an amino group, R is a monovalent hydrocarbon having 9-40 carbon atoms, R'' is a monovalent hydrocarbon group having 1 to 8 carbon atoms, an aryl group

such as those disclosed in U.S. patent application 2007/0149703, the entire contents of which is hereby incorporated by reference, with a particular example being C30-C45 alkyldimethylsilyl polypropylsilsesquioxane; and mixtures thereof.

**[0089]** According to preferred embodiments of the present invention, the compositions of the present invention further include at least one long-chain alcohol wax. Preferably, the at least one long-chain alcohol wax has an average carbon chain length of between about 20 and about 60 carbon atoms, most preferably between about 30 and about 50 carbon atoms. Suitable examples of long-chain alcohol waxes include but are not limited to alcohol waxes commercially available from Baker Hughes under the Performacol trade name such as, for example, Performacol 350, 425 and 550. Most preferably, the long-chain alcohol wax has a melting temperature range from about 93°C to about 105°C.

**[0090]** According to preferred embodiments, the compositions of the present invention contain less than 1% wax.

**[0091]** According to preferred embodiments, the compositions of the present invention contain less than 0.5% wax.

**[0092]** According to preferred embodiments, the compositions of the present invention contain no wax.

**[0093]** If present, the wax or waxes may be present in an amount ranging from 1 to 60% by weight relative to the total weight of the composition, for example from 5 to 55%, and for example from 10 to 50%, including all ranges and subranges therebetween.

**[0094]** Aqueous Phase

**[0095]** The compositions of the present invention may also contain water. When the compositions of the present invention contain water, they are preferably in the form of an emulsion. Preferably, when the compositions of the present invention contain water, they are in the form of an oil-in-water emulsion (O/W) or a water-in-oil emulsion (W/O). Preferably, when in the form of an emulsion, the oil phase contains predominantly silicone oils (Si/W or W/Si emulsion) or hydrocarbon oils. When present, water is preferably present in an amount of from about 10% to about 80% by weight, preferably from about 20% to about 70% by weight, preferably from about 35% to about 65% by weight, including all ranges and subranges therebetween, all weights being based on the total weight of the composition.

**[0096]** Additional Additives

**[0097]** The composition of the invention can also comprise any additive usually used in the field under consideration. For example, dispersants such as poly(12-hydroxystearic acid), antioxidants, essential oils, sunscreens, preserving agents, fragrances, fillers, neutralizing agents, cosmetic and dermatological active agents such as, for example, emollients, moisturizers, vitamins, essential fatty acids, surfactants, silicone elastomers, thickening agents, gelling agents, particles, pasty compounds, viscosity increasing agents can be added. A non-exhaustive listing of such ingredients can be found in U.S. patent application publication no. 2004/0170586, the entire contents of which is hereby incorporated by reference. Further examples of suitable additional components can be found in the other references which have been

incorporated by reference in this application. Still further examples of such additional ingredients may be found in the *International Cosmetic Ingredient Dictionary and Handbook* (9<sup>th</sup> ed. 2002).

**[0098]** A person skilled in the art will take care to select the optional additional additives and/or the amount thereof such that the advantageous properties of the composition according to the invention are not, or are not substantially, adversely affected by the envisaged addition.

**[0099]** These substances may be selected variously by the person skilled in the art in order to prepare a composition which has the desired properties, for example, consistency or texture.

**[00100]** These additives may be present in the composition in a proportion from 0% to 99% (such as from 0.01% to 90%) relative to the total weight of the composition and further such as from 0.1% to 50% (if present), including all ranges and subranges therebetween.

**[00101]** Needless to say, the composition of the invention should be cosmetically or dermatologically acceptable, i.e., it should contain a non-toxic physiologically acceptable medium and should be able to be applied to the keratinous materials of human beings such as, for example, lips, skin or eyelashes.

**[00102]** In particular, suitable gelling agents for the oil phase include, but are not limited to, lipophilic or hydrophilic clays.

**[00103]** The term "hydrophilic clay" means a clay that is capable of swelling in water; this clay swells in water and forms after hydration a colloidal dispersion. These clays are products that are already well known per se, which are described, for example, in the book "Mineralogie des

argiles", S. Caillere, S. Henin, M. Rautureau, 2<sup>nd</sup> edition 1982, Masson, the teaching of which is included herein by way of reference. Clays are silicates containing a cation that may be chosen from calcium, magnesium, aluminium, sodium, potassium and lithium cations, and mixtures thereof. Examples of such products that may be mentioned include clays of the smectite family such as montmorillonites, hectorites, bentonites, beidellites and saponites, and also of the family of vermiculites, stevensite and chlorites. These clays may be of natural or synthetic origin.

**[00104]** Hydrophilic clays that may be mentioned include smectite products such as saponites, hectorites, montmorillonites, bentonites and beidellite. Hydrophilic clays that may be mentioned include synthetic hectorites (also known as laponites), for instance the products sold by the company Laporte under the names Laponite XLG, Laponite RD and Laponite RDS (these products are sodium magnesium silicates and in particular sodium lithium magnesium silicates); bentonites, for instance the product sold under the name Bentone HC by the company Rheox; magnesium aluminium silicates, especially hydrated, for instance the products sold by the Vanderbilt Company under the names Veegum Ultra, Veegum HS and Veegum DGT, or calcium silicates, and especially the product in synthetic form sold by the company under the name Micro-cel C.

**[00105]** The term "lipophilic clay" means a clay that is capable of swelling in a lipophilic medium; this clay swells in the medium and thus forms a colloidal dispersion. Examples of lipophilic clays that may be mentioned include modified clays such as modified magnesium silicate



(Bentone Gel VS38 from Rheox), and hectorites modified with a C<sub>10</sub> to C<sub>22</sub> fatty-acid ammonium chloride, for instance hectorite modified with distearyldimethylammonium chloride (CTFA name: disteardimonium hectorite) sold under the name Bentone 38 CE by the company Rheox or Bentone 38V® by the company Elementis.

**[00106]** In particular, among the gelling agents that may be used, mention may be made of silica particles. Preferably, the silica particles are fumed silica particles.

**[00107]** Suitable silicas include, but are not limited to, hydrophobic silicas, such as pyrogenic silica optionally with hydrophobic surface treatment whose particle size is less than 1 micron, preferably less than 500 nm, preferably less than 100 nm, preferably from 5 nm to 30 nm, including all ranges and subranges therebetween. It is in fact possible to modify the surface of silica chemically, by a chemical reaction producing a decrease in the number of silanol groups present on the surface of the silica. The silanol groups can notably be replaced with hydrophobic groups: a hydrophobic silica is then obtained. The hydrophobic groups can be:

**[00108]** trimethylsiloxy groups, which are notably obtained by treatment of pyrogenic silica in the presence of hexamethyldisilazane. Silicas treated in this way are called "Silica silylate" according to the CTFA (6th edition, 1995). They are for example marketed under the references "AEROSIL R812®" by the company Degussa, "CAB-O-SIL TS-530®" by the company Cabot;

**[00109]** dimethylsilyloxy or polydimethylsiloxane groups, which are notably obtained by treatment of pyrogenic silica in the presence of polydimethylsiloxane or dimethyldichlorosilane. Silicas treated in this way are called "Silica dimethyl silylate" according to the CTFA (6th edition, 1995). They are for example marketed under the references "AEROSIL R972®", "AEROSIL R974®" by the company Degussa, "CAB-O-SIL TS-610®", "CAB-O-SIL TS-720®" by the company Cabot.

**[00110]** Preferably, the gelling agent, if present, is present in the composition of the present invention in amounts of active material generally ranging from about 0.1% to about 10%, preferably from about 0.25% to about 5%, and more preferably from about 0.5% to about 3.5%, by weight, based on the total weight of the composition, including all ranges and subranges in between.

**[00111]** According to preferred embodiments of the present invention, methods of treating, caring for and/or making up a keratinous material by applying compositions of the present invention to the keratinous material in an amount sufficient to treat, care for and/or make up the keratinous material are provided. Preferably, "making up" the keratinous material includes applying at least one coloring agent to the keratinous material in an amount sufficient to provide color to the keratinous material.

**[00112]** According to yet other preferred embodiments, methods of enhancing the appearance of a keratinous material by applying compositions of the present invention to the keratinous material in an

amount sufficient to enhance the appearance of the keratinous material are provided.

**[00113]** In accordance with the preceding preferred embodiments, the compositions of the present invention are applied topically to the desired area of the keratinous material in an amount sufficient to treat, care for and/or make up the keratinous material, to cover or hide defects associated with keratinous material, or to enhance the appearance of keratinous material. The compositions may be applied to the desired area as needed, preferably once daily, and then preferably allowed to dry before subjecting to contact such as with clothing or other objects. Preferably, the composition is allowed to dry for about 4 minutes or less, more preferably for about 2 minutes or less.

**[00114]** Unless otherwise indicated, all numbers expressing quantities of ingredients, reaction conditions, and so forth used in the specification and claims are to be understood as being modified in all instances by the term "about." Accordingly, unless indicated to the contrary, the numerical parameters set forth in the following specification and attached claims are approximations that may vary depending upon the desired properties sought to be obtained by the present invention.

**[00115]** Notwithstanding that the numerical ranges and parameters setting forth the broad scope of the invention are approximations, the numerical values set forth in the specific examples are reported as precisely as possible. Any numerical value, however, inherently contain certain errors necessarily resulting from the standard deviation found in their respective measurements. The following examples

are intended to illustrate the invention without limiting the scope as a result. The percentages are given on a weight basis.

**[00116]** Example 1 – Inventive and Comparison Foundation

## Compositions

**[00117]** The following compositions were prepared and tested.

Silicone resin at least one T-unit	6%	0%	6%
Silicone Elastomer Resin	0%	6%	6%
Volatile Oils	15-50%	15-50%	15-50%
Oil phase Thickeners	6-9%	6-9%	6-9%
Emollients	2-4%	2-4%	2-4%
Pigments	5-20%	5-20%	5-20%
Water phase	35-50%	35-50%	35-50%

**[00118]** Foundation compositions containing silicone resin comprising at least one T unit and/or silicone elastomer resin were tested for adhesion and nontransfer properties. The properties were evaluated through a multichallenge wear test, which is an in vitro test in which a resulting film is abraded one time. In the multichallenge wear test, a numerical rating on a scale of 1-5 was assigned, where 5=least transfer/best film property and 1=most transfer/worst film property.

**[00119]** For the multichallenge wear test, a film is deposited onto a surface such as a black byko-chart Black Scrub Panels P121-10N #5015 using a 1 mL drawdown bar. After drying 24h at 37°C, the deposit can be covered with artificial sebum or sweat. Samples are then abraded using an automatic drawdown machine (Gardco Automatic Drawdown Machine) equipped with Velcro (3/4" white 010 PSA 0172) pieces adhered to the lowest bar. Contact between the Velcro adhered bar and the film

interface is made and then the bar is automatically dragged across the sample one time. The film can then be wiped by hand using light force with an absorbent material (for example, a large kimwipe). Then, it can be determined how much of the sample remains undisrupted on the scrub panel as well as how much of the sample has transferred to the absorbent material using a rating scale such as the one described above to assess the degree of sample removal from the substrate or the degree of sample transferred to the absorbent material, in which 1 is total disruption and extreme transfer to absorbent material, 2 is most disruption with substantial transfer to absorbent material, 3 is half disruption and some transfer to the absorbent material, 4 is minimal disruption and minimal transfer to absorbent material and 5 is essentially no removal and no transfer.

**[00120]** Results are set forth in Table 1 below.

	Comparative	Comparative	Inventive	Commercial Benchmark
<b>Silicone resin at least one T-unit</b>	6%	0%	6%	
<b>Silicone Elastomer Resin</b>	0%	6%	6%	
Volatile Oils	15-50%	15-50%	15-50%	
Oil phase Thickeners	6-9%	6-9%	6-9%	
Emollients	2-4%	2-4%	2-4%	
Pigments	5-20%	5-20%	5-20%	
Water phase	35-50%	35-50%	35-50%	
<b>Results</b>				
Abrasion with Sebum	2.0 ± 0	3.0 ± 0	4.0 ± 0	2.0 ± 0
Abrasion with Sweat	3.0 ± 0	4.0 ± 0	4.7 ± 0.58	2.0 ± 0
Abrasion Dry	4.7 ± 0.58	4.7 ± 0.58	4.7 ± 0.58	2.7 ± 0.58
Transfer Sebum	2.0 ± 0	3.0 ± 0	4.0 ± 0	2.0 ± 0
Transfer Sweat	3.0 ± 0	4.0 ± 0	4.7 ± 0.58	2.0 ± 0

The combination of silicone elastomer resin with polypropylsilsesquioxane enhanced transfer resistance: on Kimwipes®, and both in artificial sweat and sebum, compared to silicone elastomer resin alone and polypropylsilsesquioxane alone, as well as the benchmark commercial product. The combination of the silicone elastomer resin with polypropylsilsesquioxane improves the non-transfer property to kimwipe, sweat, and sebum, and also provides excellent texture feeling such as non-tacky and non-draggy, and cushion feeling superior to any one alone. Within the formulation ratios, 1:1 ratio produces the best result.

What is claimed is:

1. A composition comprising at least one silicone resin comprising at least one T unit and at least one silicone elastomer resin.
2. The composition of claim 1, wherein the composition is anhydrous.
3. The composition of claim 1, wherein the composition is in the form of an emulsion.
4. The composition of any preceding claim, wherein the composition further comprises at least one coloring agent.
5. The composition of any preceding claim, wherein the silicone elastomer resin comprises at least one trimethylsiloxysilicate group.
6. The composition of any preceding claim, wherein the silicone elastomer resin is selected from the group consisting of vinyltrimethylsiloxysilicate stearyl dimethicone crosspolymer, dimethicone/vinyltrimethylsiloxysilicate crosspolymer, and mixtures thereof.
7. The composition of any preceding claim, further comprising at least one volatile oil.
8. The composition of claim 7, wherein the volatile oil is selected from the group consisting of cyclopentasiloxane, isododecane, and mixtures thereof.
9. The composition of any preceding claim, wherein the silicone resin comprising at least one T unit is a polypropylsilsesquioxane.
10. The composition of any preceding claim, wherein the silicone resin comprising at least one T unit and silicone elastomer resin are present in the compositions of the present invention in an active solid content weight ratio of 600:1 to 1:300.



11. The composition of any preceding claim, wherein the silicone resin comprising at least one T unit and silicone elastomer resin are present in the compositions of the present invention in an active solid content weight ratio of 100:1 to 1:40.
12. A method of making up a keratinous substrate comprising applying the composition of any preceding claim to a keratinous substrate in an amount sufficient to makeup the keratinous substrate.

## INTERNATIONAL SEARCH REPORT

International application No  
PCT/US2018/016164

<b>A. CLASSIFICATION OF SUBJECT MATTER</b> INV. A61Q1/02 A61K8/891 A61K8/895 A61K8/06 ADD.		
According to International Patent Classification (IPC) or to both national classification and IPC		
<b>B. FIELDS SEARCHED</b>		
Minimum documentation searched (classification system followed by classification symbols) A61Q A61K		
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) EPO-Internal, WPI Data		
<b>C. DOCUMENTS CONSIDERED TO BE RELEVANT</b>		
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<input checked="" type="checkbox"/> Further documents are listed in the continuation of Box C. <input checked="" type="checkbox"/> 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  16 March 2018		Date of mailing of the international search report  05/04/2018
Name and mailing address of the ISA/ European Patent Office, P.B. 5818 Patentlaan 2 NL - 2280 HV Rijswijk Tel. (+31-70) 340-2040, Fax: (+31-70) 340-3016		Authorized officer  Skulj, Primoz

## INTERNATIONAL SEARCH REPORT

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PCT/US2018/016164

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