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(54) Title: COSMETIC COMPOSITION STRUCTURED WITH SILICONE POLYMERS AND FILM-FORMING RESINS

(57) Abstract: Cosmetic composition for care and/or makeup, comprising: 1) a liquid fatty phase comprising at least one silicone oil, structured with a gelling system comprising at least one polymer (homopolymer or copolymer) with a weight-average molecular mass ranging from 500 to 500,000, containing at least one moiety comprising: at least one polyorganosiloxane group, composed of 1 to 1000 organosiloxane units in the chain of the moiety or in the form of a graft, and at least two groups capable of establishing hydrogen interactions chosen a from among the ester, amide, sulfonamide, carbamate, thiocarbamate, urea, thiourea, oxamido, guanidino, biguanidino groups, and combinations thereof, on condition that at least one of the groups is other than an ester group, the polymer being solid at room temperature and soluble in the liquid fatty phase at a temperature of 25 to 250°C, and 2) at least one film-forming silicone resin, the liquid fatty phase, the gelling system and the film-forming silicone resin forming a physiologically acceptable medium.



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**COSMETIC COMPOSITION FOR CARE AND/OR MAKEUP,
STRUCTURED WITH SILICONE POLYMERS
AND FILM-FORMING SILICONE RESINS**

5

DESCRIPTION

Technical field

This invention relates to a cosmetic composition
10 for care and/or treatment and/or makeup of the skin,
including the scalp and/or the lips of humans, containing a
liquid fatty phase comprising at least one silicone oil
gelled with a special polymer, existing notably in the form
of a cast makeup product, in particular of a makeup stick
15 such as lipsticks, the application of which results in a
glossy and non-migrating deposit.

A cosmetic composition for care and/or treatment
is a composition which comprises at least one active
compound for treating wrinkles, for moisturizing the skin
20 and the lips, for protecting the skin, the lips and the
phaneric structures from ultraviolet rays, for treating acne
and/or for acting as a self-tanning preparation.

The invention relates most especially to cosmetic
and dermatological compositions such as makeup products,
25 possessing properties of staying power, but also of non-
transfer and stability.

State of the prior art

In cosmetic or dermatological products, it is
30 common to find a structured, that is, gelled and/or

rigidified, liquid fatty phase; this is especially the case in cast solid compositions such as deodorants, lip balms and lipsticks, eye shadows, concealers, and foundations. This structuring is obtained with the aid of waxes or fillers.

5 Unfortunately these waxes and fillers have a tendency to make the composition matte, which is not always desirable, in particular for a lipstick or an eye shadow.

In the meaning of the application, by liquid fatty phase is understood a fatty phase which is liquid at
10 room temperature (25° C) and atmospheric pressure (760 mmHg), consisting of one or more fatty substances which are liquid at room temperature, also referred to as oils, mutually compatible and containing one silicone oil.

In the meaning of the application, by structured
15 liquid fatty phase it is understood that this structured phase does not flow under its own weight.

The structuring of the liquid fatty phase makes it possible in particular to limit its exudation from solid compositions and, in addition, after deposition on the skin
20 or the lips, to limit the migration of this phase into wrinkles and fine lines, which is particularly sought for a lipstick or an eye shadow. In fact, a significant migration of the liquid fatty phase, charged with coloring agents, leads to an unsightly appearance around the lips or the
25 eyes, in particular accentuating wrinkles and fine lines. This migration often is cited by women as a major drawback of conventional lipsticks or eye shadows. By migration is understood an extension of the composition deposited on the skin or the lips beyond its initial border.

Gloss basically is associated with the nature of the liquid fatty phase. Thus it is possible to reduce the level of waxes and fillers in the composition in order to increase the gloss of a lipstick, but then the migration of the liquid fatty phase increases. In other words, the levels of waxes and of fillers required for the making of a stick of suitable hardness place a restriction on the gloss of the deposit.

Document EP-A-1 068 856 [1] describes solid cosmetic compositions, without wax, comprising a liquid fatty phase structured with a polymer, in which the fatty phase is mainly a non-silicone oil.

Document WO-A-01/97758 [2] describes cosmetic compositions based on polyamide resins comprising a gelling agent chosen from among the esters and amides of N-acylamino acids and mixtures thereof. The composition also comprises a polyamide resin solvent which may be chosen from among the saturated or unsaturated fatty alcohols, the esters of fatty and/or aromatic carboxylic acids, the ethoxylated and/or propoxylated alcohols and acids, the silicones, the mineral oils and the branched-chain hydrocarbons; preferably, the esters of fatty acids, the fatty alcohols, the mineral oils, the branched hydrocarbons and mixtures of the latter.

The use of fatty phases based on silicone oils has made it possible up to now to obtain cosmetic compositions having a long staying power when the oils are not very volatile or are nonvolatile, that is, a good staying power particularly of color in the course of time (non-changing, non-fading), and non-transfer compositions

when the silicone oils are volatile, not becoming deposited on a support such as a glass, a cup, a fabric or a cigarette, placed in contact with the film of makeup.

At the present time, the use of silicone oils in cosmetics is limited by the lack of molecules capable of gelling these mediums and thus resulting in compositions existing in solid form such as lipsticks or cast foundations, for example. The utilization of cosmetic compositions the fatty phase of which is mainly silicone in most cases results in problems of compatibility with the ingredients traditionally used in the cosmetics industry.

In documents US-A-5,874,069 [3], US-A-5,919,441 [4], US-A-6,051,216 [5], WO-A-02/17870 [6], and WO-A-02/17871 [7], WO-A-99/06473 [12], US-A-6,353,076 [13], cosmetic compositions such as deodorant sticks or gels were achieved comprising a silicone oily phase gelled with a wax based on polysiloxane and polyamide, or with a polymer containing siloxane groups and groups capable of hydrogen interactions.

In WO-A-02/17870 [6], adding another gelling agent to the composition is contemplated, but the quantities added are to be small, for example less than 0.5% in the case of hydroxystearic acid, to preserve the clearness of the product.

In WO-A-02/17871 [7], using a second gelling agent with the silicone polymer in a quantity representing 0.5 to 2% by weight of the composition, and a solvent system comprising a non-silicone organic compound, a volatile silicone and possibly another silicone also is contemplated.

Document EP-A-1 177 784 [8] illustrates a deodorant composition comprising a liquid phase containing, for example, a volatile silicone and possibly a nonvolatile silicone and/or a non-silicone hydrophobic organic liquid, structured with an organic compound with amido groups, possibly with one or more polymer or non-polymer secondary structuring agents, in smaller proportions. Among the secondary structuring agents, this document mentions the polymers having siloxane groups and groups with hydrogen interactions without giving examples or results on a composition using these polymers.

It should be noted that documents [6], [7] and [8] relate to deodorants for which problems of exudation and migration of the liquid fatty phase charged with a coloring agent into the wrinkles and fine lines, as well as staying power and non-transfer of the composition do not arise as in the case of the makeup cosmetic products described hereinabove. In addition, gloss is not sought for deodorants.

Moreover, the sticks obtained by structuring the liquid fatty phase solely with one or more gelling silicone polymers do not afford a sufficient mechanical resistance to shearing, particularly when the stick is applied on the lips and/or the skin, resulting in a breaking of the stick.

Statement of the invention

The purpose of the invention is precisely to provide a composition for care and/or makeup and/or treatment of the skin and/or the lips, making it possible to

remedy the drawbacks and to solve the problems mentioned previously; in particular the purpose of the invention is to provide a composition having improved deposit staying-power properties.

5 In a surprising manner, the applicant has found that the use of special polymers combined with one or more film-forming silicone resins made it possible, in the absence of wax, to structure the silicone-oil-based liquid fatty phases in the form of a makeup or care product the
10 application of which resulted in a non-migrating glossy, satiny or matte film in accordance with the wish of the user and/or the type of product sought, and to intensify the staying-power and, possibly, non-transfer properties of these products. In addition, their thermal stability and
15 their slip in application are improved.

By stable is understood a composition which does not exude at room temperature (25° C) for at least 2 months, or even up to 9 months.

The combination of these special polymers with
20 one or more film-forming silicone resins makes it possible to obtain gels, in particular solid gels, having a good mechanical resistance and a correct rheology for allowing a deposit in sufficient quantity which is not sticky to the touch, affords a very good staying power, does not transfer
25 (in particular when volatile silicone oils are used) and does not migrate into wrinkles and fine lines.

The effects obtained by virtue of this combination of a special polymer and a special silicone resin, notably the surprising improvement in the staying

power of the deposit obtained, do not appear in the document of the prior art.

The invention applies not only to products for making up the lips, such as lipsticks, lip pencils, lip glosses, but also to products for care and/or treatment of the skin, including the scalp, and the lips, such as the products in stick form for solar protection of the skin, the face or the lips, or lip balms, to products for making up the skin, of the face as well as of the human body, such as foundations cast in a stick or a dish, concealer products and products for temporary tattooing, to products for cleansing, especially in stick form, and to products for making up the eyes, such as eyeliners, in particular in pencil form, and mascaras, especially cakes for the keratinous fibers (eyelashes, eyebrows, hair).

More precisely, the purpose of the invention is a cosmetic composition for care and/or makeup, comprising:

- 1) a liquid fatty phase comprising at least one silicone oil, structured with at least one gelling system comprising at least one polymer (homopolymer or copolymer) with a weight-average molecular mass ranging from 500 to 500,000, containing at least one moiety comprising:
 - at least one polyorganosiloxane group, composed of 1 to 1000 organosiloxane units in the chain of the moiety or in the form of a graft, and
 - at least two groups capable of establishing hydrogen interactions, chosen from among the ester, amide, sulfonamide, carbamate,

thiocarbamate, urea, thiourea, oxamido, guanidino, biguanidino groups and combinations thereof, on condition that at least one of the groups is other than an ester group,

- 5 - the polymer being solid at room temperature and soluble in the liquid fatty phase at a temperature of 25 to 250° C, and

2) at least one film-forming silicone resin, the liquid fatty phase, the gelling system, and the film-forming
10 silicone resin forming a physiologically acceptable medium.

According to the invention, by "gelling system" generally is understood a system making it possible to rigidify the composition by formation of hydrogen bonds.

The composition of the invention can exist in the
15 form of a paste, a solid, a more or less viscous cream. It can be a simple or multiple emulsion, in particular oil-in-water or water-in-oil, water-in-oil-in-water or oil-in-water-in-oil, or a rigid or supple gel with an oily continuous phase. The simple or multiple emulsion can
20 comprise an aqueous or oily continuous phase possibly containing dispersed lipid vesicles. In particular it exists in a form cast in a stick or a dish and more especially in the form of a rigid oily gel in particular anhydrous and notably an anhydrous stick. More especially,
25 it exists in the form of a rigid translucent or opaque gel (depending on whether or not it contains pigments), the liquid fatty phase forming the continuous phase. An anhydrous composition will comprise less than 10% by weight of water, for example less than 5% by weight.

The structuring of the liquid fatty phase can be modified depending on the nature of the polymer and of the film-forming silicone resin used in the gelling system, and can be such that a rigid structure in the form of a wand or stick, with good mechanical resistance, is obtained. These wands, when they are colored, make it possible, after application, to obtain a glossy, non-migrating deposit with good staying power, especially of the color, over time. The composition can contain one or more structuring polymers and one or more film-forming silicone resins.

The composition of the invention advantageously is a composition for the lips and better a lipstick composition especially in stick form.

Liquid fatty phase

According to the invention, the liquid fatty phase comprises at least one silicone oil which can be a volatile oil, a nonvolatile oil or a mixture of volatile oil(s) and nonvolatile oil(s).

An oil is a non-aqueous compound immiscible in water.

The liquid fatty phase preferably comprises at least one volatile silicone oil.

According to the invention, the volatile silicone oil can be chosen from among the linear or cyclic silicone oils having a flash point equal to or in excess of 40° C and advantageously in excess of the softening point of the polymer of the gelling system and/or a viscosity less than 8

cSt, such as the linear or cyclic polydimethylsiloxanes (PDMS) having from 3 to 7 silicon atoms.

The flash point is the temperature at which a fuel ignites on contact with a flame.

5 As examples of such oils, there may be cited the compounds mentioned in Table 1 below.

The volatile oil advantageously has a flash point in excess of 60° C.

10 The nonvolatile silicone oils can be polydimethylsiloxanes, polyalkylmethylsiloxanes, dimethicone copolyols, alkylmethicone copolyols, cetyldimethicone, silicones with alkylglyceryl ether groups, silicones with side amine groups and dilauroyltrimethylol propane siloxysilicate. The alkyl groups of these oils have in
15 particular from 2 to 24 carbon atoms.

 The non-volatile silicone oils which can be used in the invention can be, in particular, non-volatile linear polydimethylsiloxanes (PDMS) liquid at room temperature; polydimethylsiloxanes containing alkyl, alkoxy or phenyl
20 groups, pendent and/or at the end of the silicone chain, groups each having from 2 to 24 carbon atoms; phenylated silicones such as the phenyl trimethicones, the phenyl dimethicones, the phenyl trimethylsiloxo diphenylsiloxanes, the diphenyl dimethicones, the diphenyl methyldiphenyl
25 trisiloxanes, the 2-phenylethyl trimethylsiloxysilicates, the fluorous silicones with pendent or end-chain group(s) having from 1 to 12 carbon atoms in which all or part of the hydrogen atoms are substituted with fluorine atoms, the dimethiconols and mixtures thereof.

According to the invention, the liquid fatty phase can comprise at least one volatile silicone oil and at least one volatile non-silicone oil.

In the meaning of the invention, a volatile
5 silicone or non-silicone oil preferably has a flash point of
40 to
135° C or no flash point. At room temperature (25° C) and
atmospheric pressure (760 mmHg), the volatile oils have a
vapor pressure ranging from 0.02 mm to 300 mmHg (2.66 Pa to
10 40,000 Pa), and better ranging from 0.1 to 90 mmHg (13 Pa to
12,000 Pa). The non-volatile oils then correspond to a
vapor pressure less than 0.02 mmHg (2.66 Pa).

The silicone oils of the invention have a
viscosity advantageously chosen in the range from 5 to
15 800,000 cSt at 25° C, preferably from 10 to 500,000 cSt, and
better from 10 to 5,000 cSt.

Table 1

Compound	Flash point (°C)	viscosity (cSt)
Octyltrimethicone	93	1.2
Hexyltrimethicone	79	1.2
Decamethyl cyclopentasiloxane (cyclopentasiloxane or D5)	72	4.2
Octamethylcyclo tetrasiloxane (cyclotetradimethyl siloxane or D4)	55	2.5
Dodecamethylcyclo hexasiloxane (D6)	93	7
Decamethyltetrasiloxane (L4)	63	1.7
KF 96 A from Shin Etsu	94	6
PDMS (polydimethylsiloxane) DC 200 (1.5 cSt) from Dow Corning	56	1.5
PDMS DC 200 (2 cSt) from Dow Corning	87	2
PDMS DC 200 (5 cSt) from Dow Corning	134	5 cSt
PDMS DC 200 (3 cSt) from Dow Corning	102	3 cSt

In other words, the volatile silicone oil(s) may be chosen, for example, from within the group composed of the compounds of Table 1, heptamethyloctyltrisiloxane, dodecamethylpentasiloxane and mixtures thereof.

The volatile silicone oil also can be chosen from within the group of fluorous silicone oils such as the silicones with alkyl and perfluoroalkyl groups, the silicones with oxyethylene/oxypropylene (OE/PP) side groups and perfluorous groups, the silicones with perfluorous side groups and glycerol side groups, and the perfluoroalkylmethylphenylsiloxanes, these oils having a vapor pressure in excess of or equal to 0.02 mmHg.

According to the invention, the liquid fatty phase can contain one or more volatile or nonvolatile non-silicone oils. The volatile non-silicone oils can be chosen from within the group of hydrocarbon oils and volatile esters and ethers such as the volatile hydrocarbons like isododecane and isohexadecane, the C₈-C₁₆ isoparaffins, the isohexyl or isodecyl neopentanoates.

The volatile non-silicone oil also may be chosen from among the fluorous oils such as the perfluoropolyethers, the perfluoroalkanes such as perfluorodecaline, the perfluorodamantanes, the monoesters, diesters and triesters of perfluoroalkyl-phosphates and the fluorous ester oils.

As examples of volatile non-silicone oils which can be used in the invention, there may be cited the compounds of Table 2 which follows.

5

Table 2

Compound	Flash point (°C)
Isododecane	43
Isohexadecane	102
Isodecyl neopentanoate	118
propylene glycol n-butylether	60
3-ethyl ethoxypropionate	58
Propylene glycol methylether acetate*	46
Isopar L (C ₁₁ -C ₁₃ isoparaffin)	62
Isopar H (C ₁₁ -C ₁₂ isoparaffin)	56

The liquid fatty phase advantageously contains at least 30% and better still at least 40% by weight of silicone oil(s) advantageously having a viscosity of less than 1,000 cSt and better less than 100 cSt, because the silicone polymers used in the invention are more soluble in the low-viscosity silicone oils. It also can contain other oils or a mixture of non-silicone oils.

When the fatty phase comprises a volatile oil, the latter advantageously represents from 3 to 89.4%, and better from 5 to 60%, for example from 5 to 10% of the total weight of the composition.

The liquid fatty phase also can contain other non-silicone oils, for example polar oils such as:

- the hydrocarbon vegetable oils with a high triglyceride content composed of esters of fatty acids and glycerol, the fatty acids of which can have varying chain lengths, the latter being able to be linear or branched, saturated or unsaturated; these oils are in particular wheat germ oil, corn oil, sunflower oil, karite butter, castor oil, sweet almond oil, macadamia oil, apricot oil, soybean oil, rape oil, cotton oil, alfalfa oil, poppy oil, pumpkin oil, sesame oil, marrow oil, avocado oil, hazelnut oil, grapeseed or blackcurrant seed oil, evening primrose oil, millet oil, barley oil, quinoa oil, olive oil, rye oil, safflower oil, candlenut oil, passion flower oil musk rose oil; or else caprylic/capric acid triglycerides such as those sold by the company Stearines Dubois or those sold under the names Miglyol 810, 812 and 818 by the company Dynamit Nobel;

- the synthetic oils or esters of formula R_5COOR_6 in which R_5 represents the residue of a linear or branched higher fatty acid containing from 1 to 40 and better from 7 to 19 carbon atoms and R_6 represents a branched hydrocarbon chain containing from 1 to 40 and better from 3 to 20 carbon atoms, with $R_5 + R_6 \geq 10$, such as, for example, purcellin oil (cetostearyl octanoate), isononyl isononanoate, C_{12} to C_{15} alkyl benzoate, isopropyl myristate, 2-ethylhexyl palmitate, alkyl or polyalkyl octanoates, decanoates or ricineolates; hydroxylated esters such as isostearyl lactate, diisostearyl malate; and pentaerythritol esters;

- synthetic ethers having from 10 to 40 carbon atoms;
- C₈ to C₂₆ fatty alcohols such as oleic alcohol or octyldodecanol;
- fatty acids such as oleic acid, linoleic acid or
5 linolenic acid; and
- mixtures thereof.

The liquid fatty phase also can contain apolar oils such as linear or branched hydrocarbons or fluorocarbons of synthetic or mineral origin, volatile or
10 nonvolatile, such as volatile paraffin oils (such as isoparaffins, isododecane) or nonvolatile paraffin oils and derivatives thereof, vaseline, polydecane, hydrogenated polyisobutene such as parleam, squalane, and mixtures thereof.

15 Thus the invention can be implemented, for example, with the following different fatty phases:

- 1) a fatty phase consisting of a mixture of oils comprising at least one nonvolatile silicone oil and at least one volatile silicone oil;

2) a fatty phase consisting of a mixture of oils comprising at least one nonvolatile silicone oil and at least one volatile non-silicone oil;

3) a fatty phase consisting of a mixture of oils comprising at least one nonvolatile silicone oil, at least one volatile silicone oil and at least one volatile non-silicone oil;

4) a fatty phase consisting of a mixture of oils comprising at least one volatile silicone oil, one nonvolatile non-silicone oil and possibly at least one volatile non-silicone oil, and

5) a fatty phase consisting solely of volatile silicone oil(s).

In cases 1), 2) and 3), the mixture also can comprise a nonvolatile non-silicone oil.

The liquid fatty phase generally represents from 5 to 99% of the total weight of the composition, and better from 20 to 75%.

Solid particles

According to the invention, the composition generally furthermore comprises solid particles chosen from among fillers and pigments (including nacreous pigments), and mixtures thereof.

Generally the average size of the solid particles is from 10 nm to 50 μm , and better from 50 nm to 30 μm , for example from 100 nm to 10 μm .

The fillers used in cosmetic compositions generally have the purpose of absorbing sweat and sebum

and/or imparting a matte appearance. According to the invention, they furthermore make it possible to structure the liquid fatty phase comprising a silicone oil and to intensify the properties of staying power and/or non-
5 transfer of the composition as well as the thermal stability.

By pigments is understood any solid particle insoluble in the composition serving to impart and/or to modify a color and/or an iridescent appearance.

10 These pigments can ensure both the function of absorption of sweat and sebum, and the function of coloring or of modification of the appearance of the composition, that is, of the makeup and/or care cosmetic product. In the invention, they also ensure the structuring of the liquid
15 fatty phase.

These fillers or pigments can be of either hydrophobic or hydrophilic nature. When these fillers or pigments are hydrophilic particles, their dispersion in the composition is facilitated either by coating them in a film
20 of hydrophobic compound or by adding a dispersant, and in particular a silicone amphiphilic with respect to the composition.

The hydrophobic pigments or fillers, can be composed of hydrophobic polymer or copolymer powders. As
25 examples of hydrophobic polymers and copolymers used as fillers, there may be cited:

1) fluoruous polymers such as polytetrafluoroethylene powders and powders of tetrafluoroethylene and olefin copolymer, for example of

ethylene or propylene; 2) silicone elastomers, for example polymethylsilsesquioxane powders (Tospearl® from Toshiba); 3) polyolefins such as polyethylene; 4) alkyl polymethacrylates, for example methyl polymethacrylate; 5) polyamides (Nylon®); 6) polystyrenes; 7) polyesters and derivatives thereof; 8) polyacrylics (Polytrap® from Dow Corning) or methyl polymethacrylate; and 9) polyurethanes, for example powders of Hexamethylene Diisocyanate/trimethylol hexalactone.

10 There also can be used hydrophilic fillers treated on the surface so as to be hydrophobic, such as boron nitride, starch, precipitated calcium carbonate, silica, glass or a ceramic.

 Instead of powders, there of course can be used
15 fibers of a hydrophobic nature, in particular fibers of the polymers and copolymers cited previously.

 The solid particles also can be composed of pigments and/or nacles making it possible to obtain a covering makeup, that is, not allowing the skin, lips or
20 phaneric structures to show through. These particles furthermore make it possible to reduce the sticky feel of the compositions.

 The pigments can be white or colored, organic and/or inorganic, coated or uncoated. The inorganic
25 pigments can be chosen, for example, from among the zinc oxides, iron oxides, titanium oxides and mixtures thereof. Thus among the inorganic pigments, there may be cited titanium or zinc dioxide, possibly surface-treated, zirconium or cerium oxides, as well as iron or chromium

oxides, manganese violet, ultramarine blue, chromium hydrate and ferric blue. Among the organic pigments there may be cited carbon black, pigments of the D & C type, and the lakes based on cochineal carmine, on barium, strontium, calcium, aluminum. The pigments can represent from 0.1 to 50%, preferably from 0.5 to 40% and better from 2 to 30% of the total weight of the composition, if they are present.

The nacreous pigments (or nacres) can be chosen from among the white nacres such as mica coated with titanium or with bismuth oxychloride, colored nacreous pigments such as titanium mica with iron oxides, titanium mica with, in particular, ferric blue or chromium oxide, titanium mica with an organic pigment of the type mentioned above, as well as nacreous pigments based on bismuth oxychloride. The nacreous pigments also can have gogniochromatic properties and exist in the form of liquid crystals or multilayered plaques. They can represent from 0 to 30%, preferably from 0.1 to 20% of the total weight of the composition, and better from 0.1 to 15%.

When the pigments or the fillers are hydrophilic, they are coated in a film of hydrophobic compound with a view to introducing them into the liquid fatty phase of the composition of the invention.

5 The coating can be a fluorous coating such as a perfluoroalkyl mono- or diester of phosphoric acid (acid or salt), a perfluoropolyether, a carboxylic or sulfonic perfluoroacid, or a salt of diethanolamine perfluoroalkyl phosphate.

10 The coating can be a coating based on fluorous silicone, for example a coating-grafting with a silane with a perfluoroalkyl group.

 The coating also can be implemented by means of silicone derivatives, for example a coating-grafting with
15 reactive silicones initially possessing hydrogenosilane groups, a coating grafting with a diorganosilane such as dimethylchlorosilane or with an alkylalcoxysilane, a coating-grafting with a silane with a glycydoxypropyl group, a coating with a polyglycerol silicone , or a coating with a
20 silicone or silicone-g-polyacrylic grafted acrylic copolymer.

 There also can be used a coating with N-acylamino acids, for example N-lauroyllysine, coatings with fatty acids or fatty acid salts of the stearic acid type,
25 coatings with lecithins and coatings with ester oils.

 Dispersion of the hydrophilic particles also may be facilitated by means of at least one amphiphilic silicone which serves as a surfactant between the hydrophilic particles and the hydrophobic silicone phase.

These amphiphilic silicones contain a silicone portion which is compatible with the highly silicone medium of the compositions of the invention, and a hydrophilic portion which can be, for example, the residue of a compound
5 chosen from among the alcohols and the polyols, having from 1 to 12 hydroxyl groups, the polyoxyalkylenes containing at least two oxyalkylene moieties and having from 0 to 20 oxypropylene moieties and/or from 0 to 20 oxyethylene moieties. This hydrophilic portion therefore has an
10 affinity for the hydrophilic particles and contributes to the dispersion thereof in the silicone medium.

The amphilic silicone can be an oil without gelling activity. Such oils can be composed of:

- dimethicone copolyols, possibly containing phenyl
15 groups,
- alkylmethicone copolyols,
- polyglycerol silicones, that is, silicones with alkylglyceryl ether groups,
- silicones with perfluorous side groups and with
20 glycerol side groups,
- silicones with polyoxyethylene/polyoxypropylene side groups and with perfluorous side groups,
- silicone block and hydrophilic block copolymers other than polyether, for example polyoxazoline or
25 polyethyleneimine,
- grafted copolymers of the silicone grafted polysaccharide type,
- silicone block, poly(ethylene oxide/propylene oxide) block copolymers.

The amphiphilic silicone used in the invention also can be an at least partially crosslinked amphiphilic silicone resin.

As examples of such resins, there can be cited:

5 - crosslinked silicon resins with alkylpolyether groups, such as ethylene polyoxide (POE) and ethylene polyoxide/propylene polyoxide (POE/POP), described in US-A-5,412,004 [9], and

 - silicone resins crosslinked in part with α,ω -dienes,
10 possessing both hydrophilic POE/POP side chains and hydrophobic alkyl side chains such as those described in EP-A-1 048 686 [10]. The hydrophilic side chains are obtained by reaction with a POE/POP at a single vinyl end, and the alkyl side chains are formed by reaction with an α -olefin
15 with a fatty chain.

In the amphiphilic silicone resin, the silicone portion advantageously is made up of polydimethylsiloxane.

Gelling silicone polymer

20 The polymer or polymers structuring or gelling the composition is/are solid at room temperature (25° C) and

atmospheric pressure (760 mmHg) and soluble in the liquid fatty phase at a temperature of 25 to 250° C.

In the meaning of the invention, there is understood by polymer a compound having at least 2 repeating
5 moieties, preferably at least 3 repeating moieties, and better still 10 repeating moieties.

In the composition of the invention, the silicone polymer of the gelling system represents generally from 0.5 to 80%, preferably from 2 to 60%, and better still from 5 to
10 40% of the total weight of the composition.

Furthermore, the gelling-system polymer/silicone oil(s) mass ratio is preferably from 0.1 to 50%.

The polymers used as gelling agents in the composition of the invention are polymers of the
15 polyorganosiloxane type such as those described in the documents US-A-5,874,069 [3], US-A-5,919,441 [4], US-A-6,051,216 [5] and US-A-5,981,680 [11].

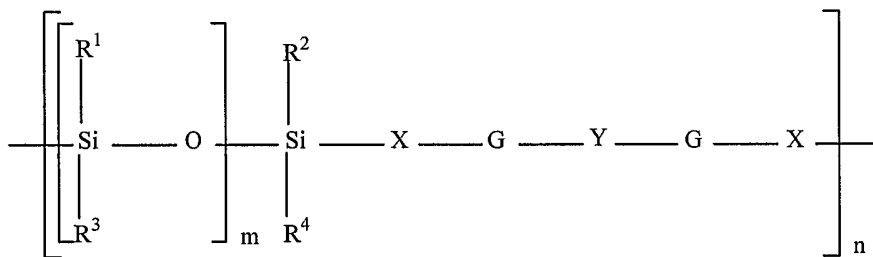
According to the invention, the polymers used as
20 a gelling agent can belong to the following two families:

- 1) polyorganosiloxanes comprising at least two groups capable of establishing hydrogen interactions, these two groups being located in the polymer chain; and/or
- 2) polyorganosiloxanes comprising at least two groups
25 capable of establishing hydrogen interactions, these two groups being located on grafts or branches.

The polymers to which the invention applies are solids that can be dissolved beforehand in a solvent with

hydrogen interaction capable of breaking the hydrogen interactions of the polymers, such as the C₂ to C₈ lower alcohols and in particular ethanol, n-propanol, isopropanol, before being placed in the presence of the silicone oils according to the invention. It also is possible to use these hydrogen interaction "breaking" solvents as cosolvent. These solvents then can be kept in the composition or else be removed by selection evaporation, well known to the person skilled in the art.

The polymers comprising two groups capable of establishing hydrogen interactions in the polymer chain can be polymers comprising at least one moiety corresponding to the formula:

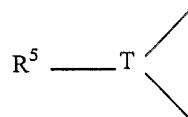


(I)

in which:

- 1) R^1 , R^2 , R^3 and R^4 , identical or different, represent a group chosen from among:
- linear, branched or cyclic, saturated or unsaturated, C_1 to C_{40} hydrocarbon groups, which can contain in their chain one or more oxygen, sulfur and/or nitrogen atoms, and which can be partly or totally substituted with fluorine atoms,
 - C_6 to C_{10} aryl groups, possibly substituted with one or more C_1 to C_4 alkyl groups,
 - polyorganosiloxane chains containing or not containing one or more oxygen, sulfur and/or nitrogen atoms;
- 2) the groups X, identical or different, represent a linear or branched C_1 to C_{30} alkylenediyl group, which can contain in its chain one or more oxygen and/or nitrogen atoms;
- 3) Y is a saturated or unsaturated, C_1 to C_{50} linear or branched divalent alkylene, arylene, cycloalkylene, alkylarylene or arylalkylene group, which can comprise one or more oxygen, sulfur and/or nitrogen atoms, and/or bear as substituent one of the following atoms or groups of atoms: fluorine, hydroxy, C_3 to C_8 cycloalkyl, C_1 to C_{40} alkyl, C_5 to C_{10} aryl, phenyl possibly substituted with 1 to 3 C_1 to C_3 alkyl groups, C_1 to C_3 hydroxyalkyl and C_1 to C_6 aminoalkyl, or

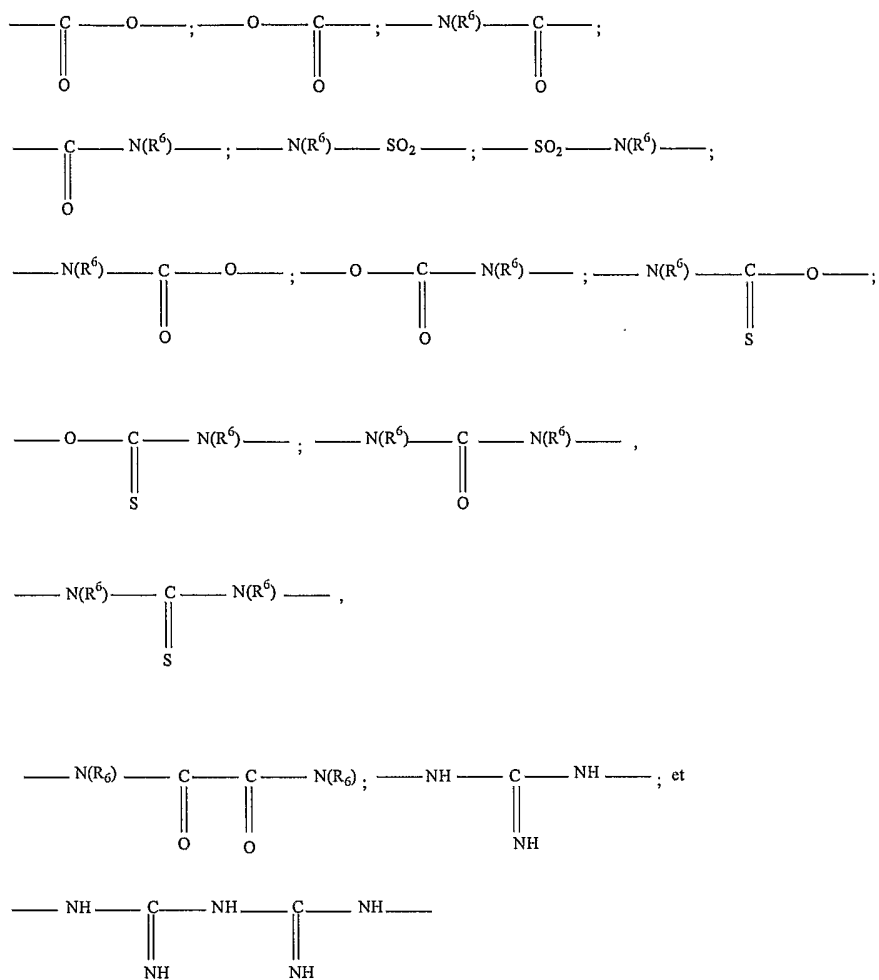
4) Y represents a group corresponding to the formula:



5 in which

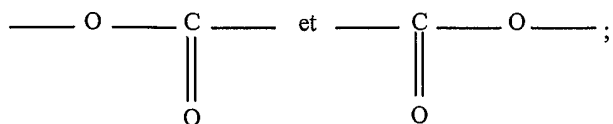
- T represents a linear or branched, saturated or unsaturated, C₃ to C₂₄ trivalent or tetravalent hydrocarbon chain, possibly substituted with a polyorganosiloxane chain, and which can contain one or more atoms chosen from among O, N and S, or T represents a trivalent atom chosen from among N, P and Al, and
- R⁵ represents a linear or branched C₁ to C₅₀ alkyl group, or a polyorganosiloxane chain, which can comprise one or more ester, amide, urethane, thiocarbamate, urea, thiourea and/or sulfonamide groups which can be linked or not linked to another chain of the polymer,

5) the groups G, identical or different, represent divalent groups chosen from among:



- 5 in which R⁶ represents a hydrogen atom or a linear or branched C₁ to C₂₀ alkyl group, on condition that at least 50% of the groups R⁶ of the polymer represents a hydrogen atom and that at least two of the groups G of the polymer are a group other than:

10

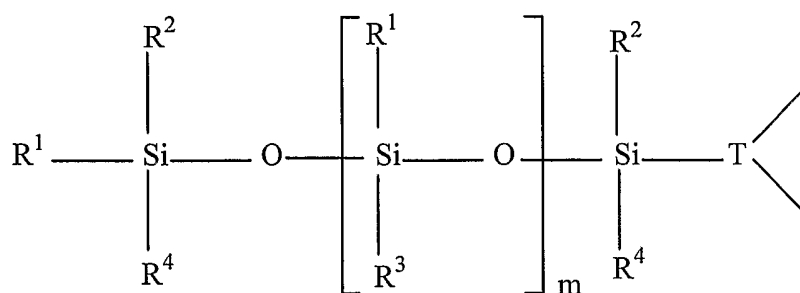


6) n is an integer ranging from 2 to 500, preferably from 2 to 200, and m is an integer ranging from 1 to 1000, preferably from 1 to 700, and better still from 6 to 200.

According to the invention, 80% of the groups R¹, R², R³ and R⁴ of the polymer preferably are chosen from among the methyl, ethyl, phenyl and 3,3,3-trifluoropropyl groups.

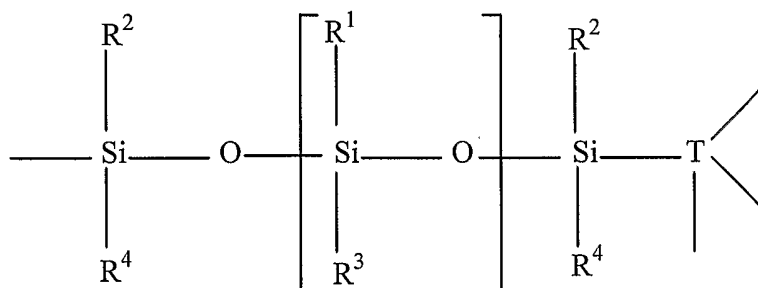
According to the invention, Y can represent various divalent groups, possibly furthermore comprising one or two free valences to establish bonds with other moieties of the polymer or copolymer. Preferably Y represents a group chosen from among:

- a) linear C₁ to C₂₀, preferably C₁ to C₁₀, alkylene groups,
- 15 b) C₃₀ to C₅₆ branched alkylene groups which can comprise rings and unconjugated unsaturations,
- c) C₅-C₆ cycloalkylene groups,
- d) phenylene groups possibly substituted with one or more C₁ to C₄₀ alkyl groups,
- 20 e) C₁ to C₂₀ alkylene groups, comprising from 1 to 5 amide groups,
- f) C₁ to C₂₀ alkylene groups comprising one or more substituents chosen from among the hydroxyl, C₃ to C₈ cycloalkane, C₁ to C₃ hydroxyalkyl and C₁ to C₆ alkylamine groups,
- 25 g) polyorganosiloxane chains of formula:

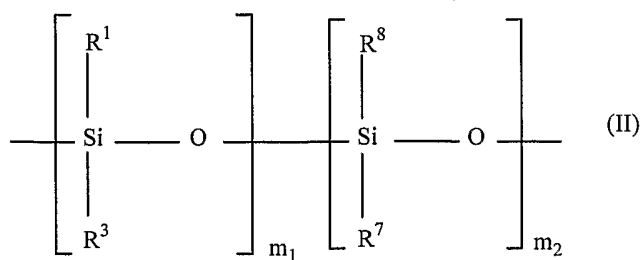


in which R^1 , R^2 , R^3 , R^4 , T and m are such as defined hereinabove, and

5 h) polyorganosiloxane chains of formula:



The polyorganosiloxanes of the second family can be polymers comprising at least one moiety corresponding to formula (II):



in which

- R^1 and R^3 , identical or different, are such as defined hereinabove for formula (I),

- R^7 represents a group such as defined hereinabove for R^1 and R^3 , or represents the group of formula $-X-G-R^9$ in which X and G are such as defined hereinabove for formula (I) and R^9 represents a hydrogen atom or a linear, branched or cyclic, saturated or unsaturated, C_1 to C_{50} hydrocarbon group, possibly comprising in its chain one or more atoms chosen from among O, S and N, possibly substituted with one or more fluorine atoms and/or one or more hydroxyl groups, or a phenyl group possibly substituted with one or more C_1 to C_4 alkyl groups.

- R^8 represents the group of formula $-X-G-R^9$ in which X, G and R^9 are such as defined hereinabove,

- m_1 is an integer ranging from 1 to 998, and

- m_2 is an integer ranging from 2 to 500.

According to the invention, the polymer used as a gelling agent can be a homopolymer, that is, a polymer comprising several identical moieties, in particular moieties of formula (I) or of formula (II).

According to the invention, there also may be used a polymer consisting of a copolymer comprising several different moieties of formula (I), that is, a polymer in which at least one of the groups R^1 , R^2 , R^3 , R^4 , X, G, Y, m and n is different in one of the moieties. The copolymer also can be made up of several moieties of formula (II), in which at least one of the groups R^1 , R^3 , R^7 , R^8 , m_1 and m_2 is different in at least one of the moieties.

There also may be used a copolymer comprising at least one moiety of formula (I) and at least one moiety of formula (II), the moieties of formula (I) and the moieties

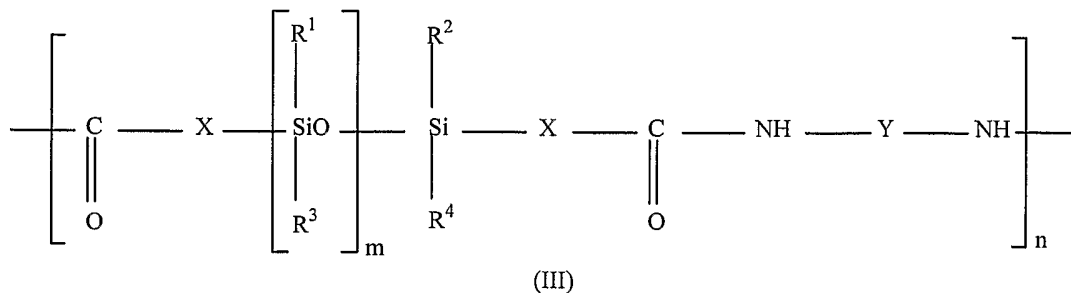
of formula (II) being able to be identical or different from one another.

According to a variant of the invention, there also may be used a copolymer furthermore containing at least one hydrocarbon moiety comprising two groups capable of establishing hydrogen interactions, chosen from among the ester, amide, sulfonamide, carbamate, thiocarbamate, urea, thiourea, oxamido, guanidino, biguanidino groups and combinations thereof.

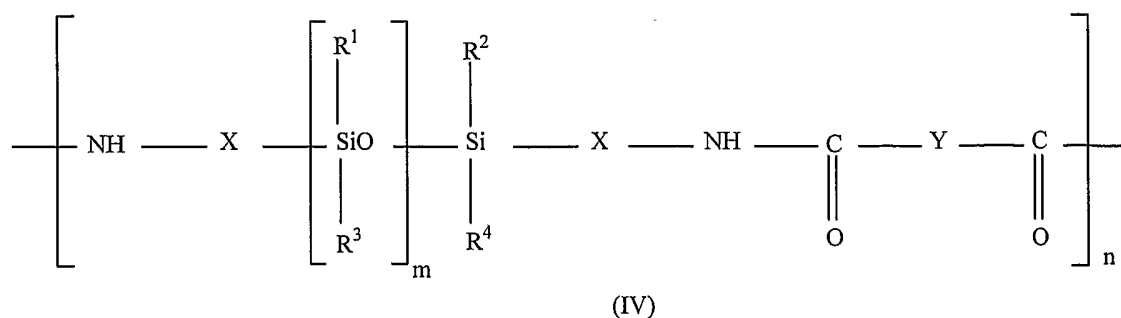
These copolymers may be block copolymers, sequenced copolymers or grafted copolymers.

According to a first embodiment of the invention, the groups capable of establishing hydrogen interactions are amide groups of formula $-C(O)NH-$ and $-HN-C(O)-$.

In this case, the gelling agent can be a polymer comprising at least one moiety of formula (III) or (IV):



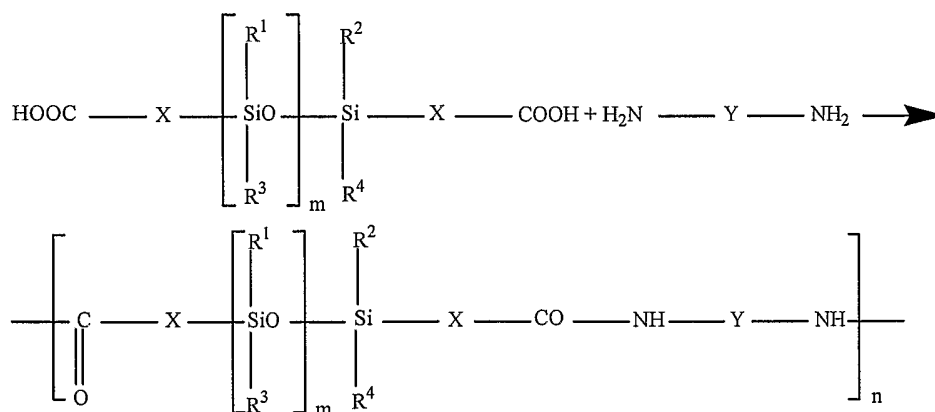
or



in which R^1 , R^2 , R^3 , R^4 , X , Y , m and n are such as defined hereinabove.

5 Such a moiety can be obtained:

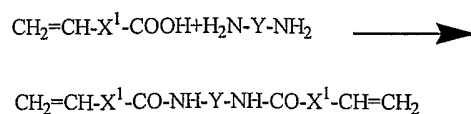
- either by a condensation reaction between a silicone with α,ω -carboxylic acid ends and one or more diamines, according to the following reaction diagram:



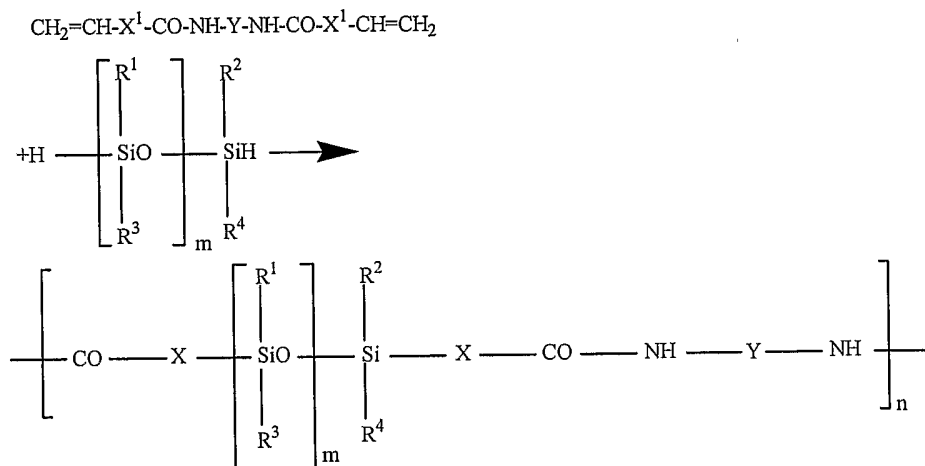
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- or by reaction of two molecules of α -unsaturated carboxylic acid with a diamine according to the following reaction diagram:

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followed by the addition of a siloxane to the ethylene unsaturations, according to the following diagram:

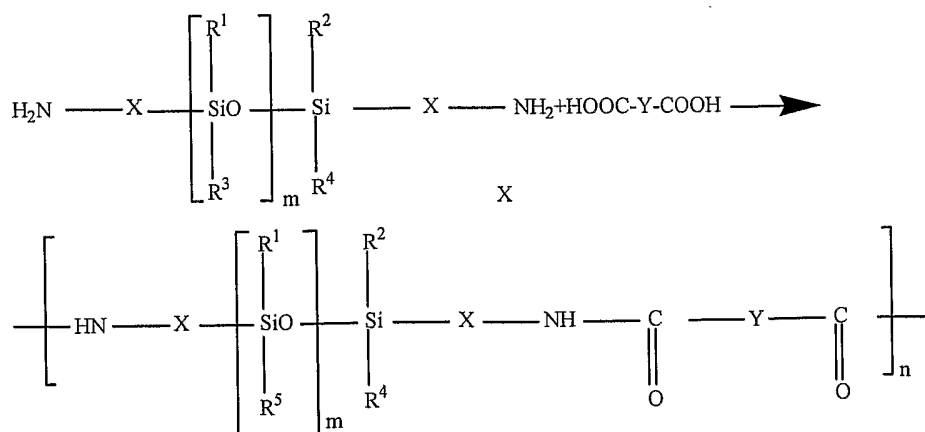


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in which $\text{X}^1-(\text{CH}_2)_2-$ corresponds to X defined hereinabove and Y, R^1 , R^2 , R^3 , R^4 and m are such as defined hereinabove;

- or by reaction of a silicone with α,ω - NH_2 ends and a diacid of formula $\text{HOOC}-\text{Y}-\text{COOH}$ according to the following

10 reaction diagram:



In these polyamides of formula (III) or (IV), m is preferably in the range from 1 to 700, preferably from 15

to 500 and better still from 15 to 45, and n in particular is in the range from 1 to 500, preferably from 1 to 100 and better still from 4 to 25,

- X is preferably a linear or branched alkylene chain
5 having 1 to 30 carbon atoms, in particular 3 to 10 carbon atoms, and

- Y is preferably an alkylene chain that is linear or branched or that can comprise rings and/or unsaturations, having from 1 to 40 carbon atoms, in particular from 1 to 20
10 carbon atoms, and better still from 2 to 6 carbon atoms, in particular 6 carbon atoms.

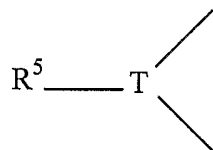
In formulas (III) and (IV), the alkylene group representing X or Y possibly can contain at least one of the following elements in its alkylene portion:

- 15 1) 1 to 5 amide, urea or carbamate groups,
 2) a C₅ or C₆ cycloalkyl group, and
 3) a phenylene group possibly substituted with 1 to 3 identical or different C₁ to C₃ alkyl groups.

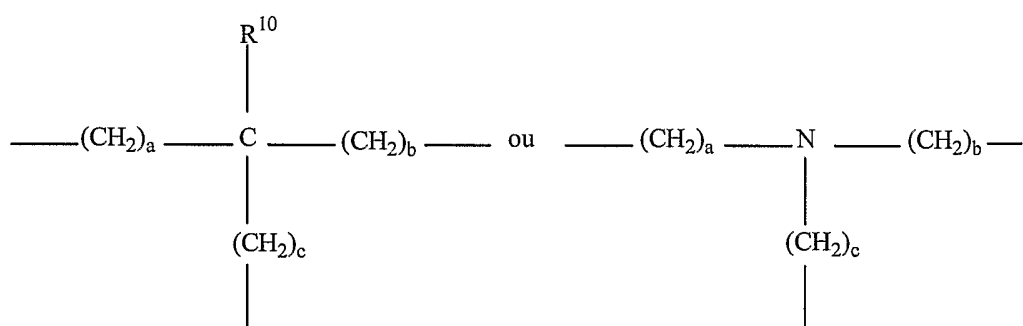
In formulas (III) and (IV), the alkylene groups
20 also may be substituted with at least one element chosen from within the group consisting of:

- a hydroxy group,
 - a C₃ to C₈ cycloalkyl group,
 - one to three C₁ to C₄₀ alkyl groups,
25 - a phenyl group possibly substituted with one to three C₁ to C₃ alkyl groups,
 - a C₁ to C₃ hydroxyalkyl group, and
 - a C₁ to C₆ aminoalkyl group.

In these formulas (III) and (IV), Y also can represent:



in which R⁵ represents a polyorganosiloxane chain, and T
5 represents a group of formula:

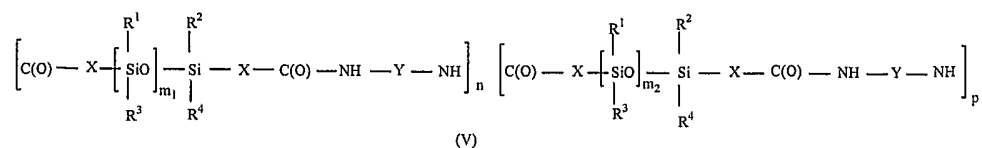


in which a, b and c are, independently, integers ranging
10 from 1 to 10, and R¹⁰ is a hydrogen atom or a group such as those defined for R¹, R², R³ and R⁴.

In formulas (III) and (IV), R¹, R², R³ and R⁴ preferably represent, independently, a linear or branched C₁ to C₄₀ alkyl group, preferably a CH₃, C₂H₅, n-C₃H₇ or isopropyl
15 group, a polyorganosiloxane chain or a phenyl group possibly substituted with one to three methyl or ethyl groups.

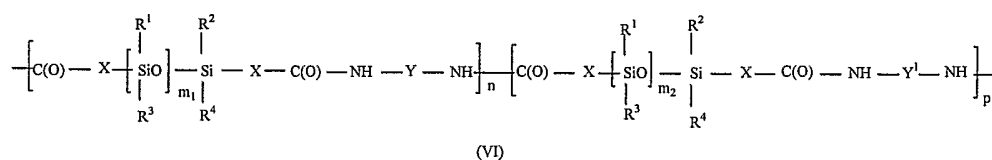
As has been seen previously, the polymer can comprise identical or different moieties of formula (III) or (IV).

20 Thus the polymer can be a polyamide containing several moieties of formula (III) or (IV) of different lengths, that is, a polyamide corresponding to the formula:



in which X, Y, n, R¹ to R⁴ have the meanings given
 5 hereinabove, m₁ and m₂, which are different, are chosen from
 within the range from 1 to 1000, and p is an integer ranging
 from 2 to 300.

In this formula, the moieties can be structured
 to form either a block copolymer, or a random copolymer or
 10 an alternating copolymer. In this copolymer, the moieties
 can be not only of different lengths, but also of different
 chemical structures, for example having different groups Y.
 In this case, the copolymer can correspond to the formula:



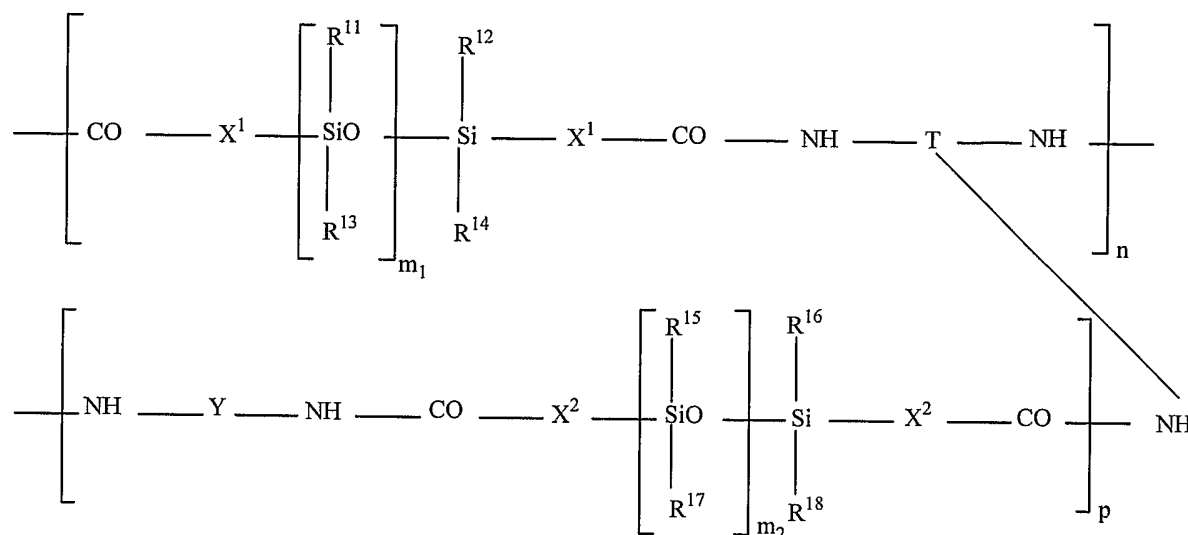
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in which R¹ to R⁴, X, Y, m₁, m₂, n and p have the meanings
 given hereinabove and Y¹ is different from Y but chosen from
 among the groups defined for Y. As previously, the various
 20 moieties can be structured to form either a block copolymer,
 or a random copolymer or an alternating copolymer.

In this first embodiment of the invention, the
 gelling agent also can consist of a grafted copolymer. Thus
 the polyamide with silicone units can be grafted and
 25 possibly crosslinked with silicone chains having amide

groups. Such polymers can be synthesized with trifunctional amines.

In this case, the copolymer can comprise at least one moiety of formula:



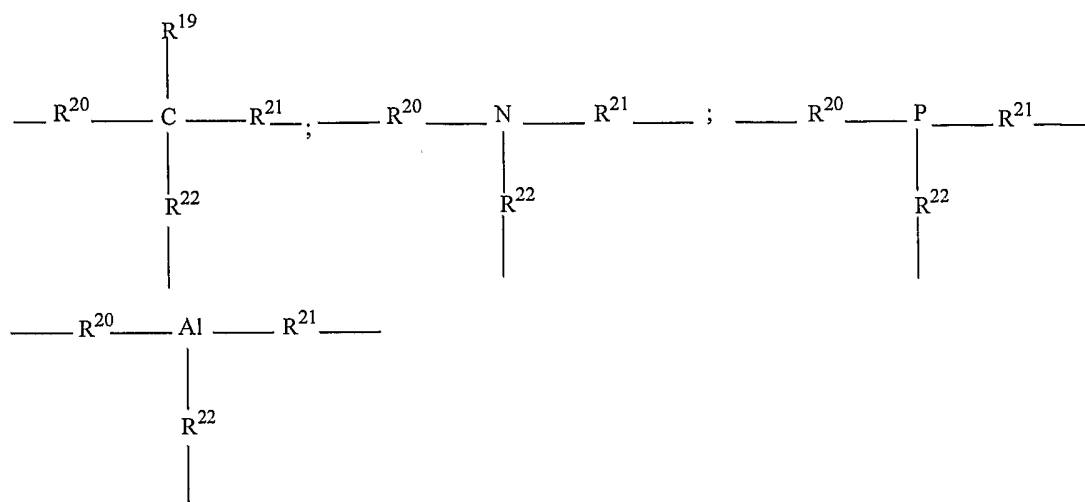
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(VII)

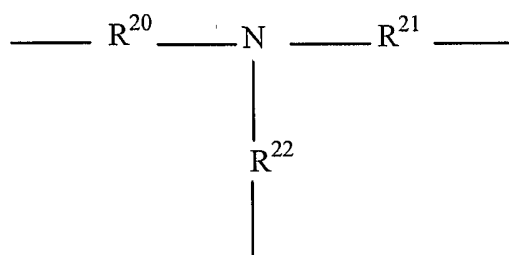
in which X^1 and X^2 , which are identical or different, have the meaning given for X in formula (I), n is such as defined in formula (I), Y and T are such as defined in formula (I),
 10 R^{11} to R^{18} are groups chosen from within the same group as R^1 to R^4 , m_1 and m_2 are numbers falling in the range from 1 to 1000, and p is an integer ranging from 2 to 500.

In formula (VII), it is preferred that:

- p is in the range of 1 to 25, better still from 1 to 7,
- R^{11} to R^{18} are methyl groups,
- T corresponds to one of the following formulas:



in which R¹⁹ is a hydrogen atom or a group chosen from among the groups defined for R¹ to R⁴, and R²⁰, R²¹ and R²² are,
 5 independently, linear or branched alkylene groups, and preferably still, with the formula:



- 10 in particular with R²⁰, R²¹ and R²² representing -CH₂-CH₂-,
- m₁ and m₂ are in the range from 15 to 500, and better still from 15 to 45,
 - X¹ and X² represent -(CH₂)₁₀-, and
 - Y represents -CH₂-.

15 These polyamides with a grafted silicone moiety of formula (VII) can be copolymerized with polyamide-silicones of formula II to form block copolymers, alternating copolymers or random copolymers. The weight

percentage of grafted silicone moieties (VII) in the copolymer can range from 0.5% to 30% by weight.

According to the invention, as has been seen previously, the siloxane units can be in the main chain or backbone of the polymer, but they also can be present in grafted or pendent chains. In the main chain, the siloxane units can be in the form of segments as described hereinabove. In the pendent or grafted chains, the siloxane units can appear individually or in segments.

According to the invention, the preferred siloxane-based polyamides are:

- polyamides of formula (III) in which m is from 15 to 50;

- mixtures of two or more polyamides in which at least one polyamide has a value of m in the range from 15 to 50 and at least one polyamide has a value of m in the range from 30 to 50;

- polymers of formula (V) with m_1 chosen from within the range of 15 to 50 and m_2 chosen from within the range of 30 to 500 with the portion corresponding to m_1 representing 1 to 99% by weight of the total weight of the polyamide and the portion corresponding to m_2 representing 1 to 99% by weight of the total weight of the polyamide;

- mixtures of polyamide of formula (III) combining

- 1) 80 to 99% by weight of a polyamide in which n is equal to 2 to 10, in particular 3 to 6, and

- 2) 1 to 20% of a polyamide in which n is in the range from 5 to 500, in particular from 6 to 100;

- polyamides corresponding to formula (VI) in which at least one of the groups Y and Y¹ contains at least one hydroxyl substituent;

5 - polyamides of formula (III) synthesized with at least one portion of an activated diacid (diacid chloride, dianhydride or diester) instead of the diacid;

- polyamides of formula (III) in which X represents - (CH₂)₃- or -(CH₂)₁₀; and

10 - polyamides of formula (III) in which the polyamides are terminated with a monofunctional chain chosen from within the group consisting of monofunctional amines, monofunctional acids, monofunctional alcohols, including fatty acids, fatty alcohols, and fatty amines, such as, for example, octylamine, octanol, stearic acid and stearyl
15 alcohol.

According to the invention, the ends of the polymer chains can be terminated with:

- a C₁ to C₅₀ alkyl ester group by introducing a C₁ to C₅₀ monoalcohol during synthesis,

20 - a C₁ to C₅₀ alkylamide group by taking as stopping group

a monoacid if the silicone is α,ω -diaminated, or a monoamine if the silicone is an α,ω -dicarboxylic acid.

According to one embodiment variant of the invention, there can be used a copolymer of silicone polyamide and of hydrocarbon polyamide, that is, a copolymer comprising moieties of formula (III) or (IV) and hydrocarbon polyamide moieties. In this case, the polyamide-silicone moieties can be arranged at the ends of the hydrocarbon polyamide.

Polyamide-based gelling agents containing silicones can be produced by silylic amidation of polyamides based on fatty acid dimer. This approach involves the reaction of free acid sites existing on a polyamide as end sites, with oligosiloxane-monoamines and/or oligosiloxane-diamines (amidation reaction), or alternatively with oligosiloxane alcohols or oligosiloxane diols (esterification reaction). The esterification reaction requires the presence of acid catalysts, as is known in the art. It is desirable for the polyamide having free acid sites, used for the amidation or esterification reaction, to have a relatively high number of acid end groups (for example, polyamides having high acid values, for example from 15 to 20).

For the amidation of the free acid sites of the hydrocarbon polyamides, siloxane diamines with 1 to 300, more particularly 2 to 50, and better still 2, 6, 9.5, 12, 13.5,

23

or 31 siloxane groups, can be used for the reaction with hydrocarbon diamides based on fatty acid dimers. Siloxane diamines having 13.5 siloxane groups are preferred, and the best results are obtained with the siloxane-diamine having
5 13.5 siloxane groups and polyamides containing high values for carboxylic acid end groups.

The reactions may be carried out in xylene to extract the water produced from the solution by azeotropic distillation, or at higher temperatures (about 180 to 200°
10 C) without solvent. Typically, the efficacy of the amidation and the reaction rates decrease when the siloxane diamine is longer, that is, when the number of siloxane groups is higher. Free amine sites can be blocked after the initial amidation reaction of the diaminosiloxanes by
15 reacting them either with an acid siloxane or with an organic acid such as benzoic acid.

For the esterification of the free acid sites on the polyamides, this can be performed in boiling xylene with about 1% by weight, relative to the total weight of the
20 reagents, of para-toluenesulfonic acid as catalyst.

These reactions carried out on the carboxylic acid end groups of the polyamide lead to the incorporation of silicone moieties only at the ends of the polymer chain.

A polyamide-silicone copolymer also can be
25 prepared using a polyamide with free amine groups, by amidation reaction with a siloxane containing an acid group.

There also can be prepared a gelling agent based on a copolymer between a hydrocarbon polyamide and a silicone polyamide, by transamidation of a polyamide having,

for example, an ethylene-diamine constituent, with an oligosiloxane- α,ω -diamine, at high temperature (for example 200 to 300° C), in order to carry out a transamidation such that the ethylenediamine component of the original
5 polyamide is replaced with the oligosiloxane diamine.

The copolymer of hydrocarbon polyamide and of polyamide-silicone also can be a grafted copolymer comprising a hydrocarbon polyamide backbone with pendent oligosiloxane groups.

10 This can be obtained, for example:

- by hydrosilylation of unsaturated bonds in polyamides based on fatty acid dimers;

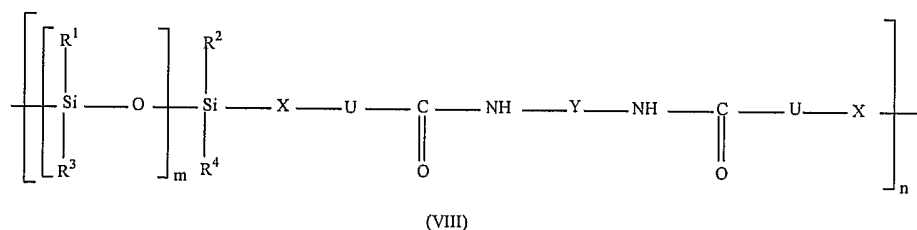
- by silylation of the amide groups of a polyamide; or

- by silylation of unsaturated polyamides by means of
15 an oxidation, that is, by oxidizing the unsaturated groups into alcohols or diols, in order to form hydroxyl groups which are reacted with siloxane carboxylic acids or siloxane alcohols. The olefinic sites of the unsaturated polyamides also can be epoxidized and the epoxy groups then can be
20 reacted with siloxane amines or siloxane alcohols.

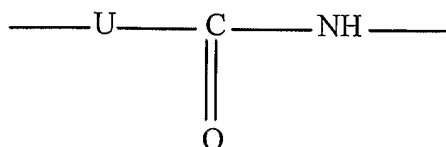
According to a second embodiment of the invention, the gelling agent consists of a homopolymer or a copolymer comprising urethane or urea groups.

As previously, the polymer can comprise
 5 polyorganosiloxane moieties containing two or more urethane and/or urea groups, either in the backbone of the polymer, or on side chains or as pendent groups.

The polymers comprising at least two urethane and/or urea groups in the backbone may be polymers
 10 comprising at least one moiety corresponding to the following formula:



15 in which R^1 , R^2 , R^3 , R^4 , X, Y, m and n have the meanings given hereinabove for formula (I), and U represents ---O--- or ---NH--- , so that:



20

corresponds to a urethane or urea group.

In this formula (VIII), Y can be a linear or branched C_1 to C_{40} alkylene group, possibly substituted with a C_1 to C_{15} alkyl group or a C_5 to C_{10} aryl group. Preferably

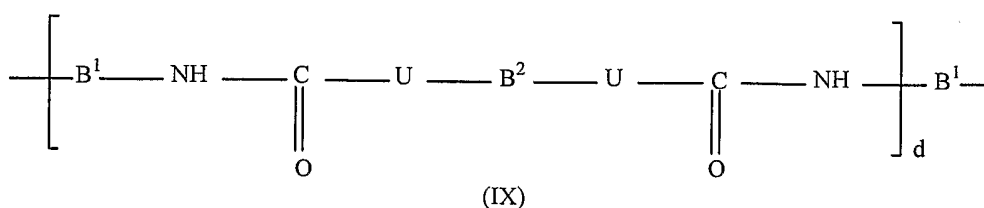
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-(CH₂)₆- group is used.

Y also can represent a C₅ to C₁₂ cycloaliphatic or aromatic group which can be substituted with a C₁ to C₁₅ alkyl group or a C₅ to C₁₀ aryl group, for example a radical chosen from among the methylene-4-4-bicyclohexyl radical, the radical derived from isophorone diisocyanate, 2,4- and 2,6 tolylenes, 1,5 naphthylene, p-phenylene and 4,4'-biphenylenemethane. Generally, it is preferred that Y represent a linear or branched C₁ to C₄₀ alkylene radical, or a C₄ to C₁₂ cycloalkylene radical.

Y also can represent a polyurethane or polyurea sequence corresponding to the condensation of several diisocyanate molecules with one or more molecules of coupling agents of the diol or diamine type. In this case, Y comprises several urethane or urea groups in the alkylene chain.

It can correspond to the formula:



in which B¹ is a group chosen from among the groups given hereinabove for Y, U is -O- or -NH-, and B² is chosen from among:

- linear or branched C₁ to C₄₀ alkylene groups, which possibly can bear an ionizable group such as a carboxylic or

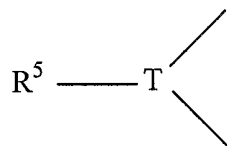
sulfonic acid group, or a neutralizable or quaternizable tertiary amine group,

• C₅ to C₁₂ cycloalkylene groups, possibly bearing alkyl, for example one to three methyl or ethyl groups, or
5 alkylene substituents, for example the diol radical: cyclohexanedimethanol,

• phenylene groups which possibly can bear C₁ to C₃ alkyl substituents, and

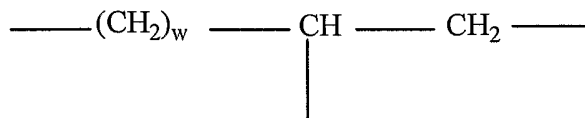
• groups of formula:

10

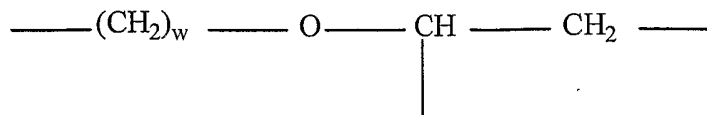


in which T is a hydrocarbon trivalent radical which can contain one or more hetero atoms such as oxygen, sulfur and
15 nitrogen and R⁵ is a polyorganosiloxane chain or linear or branched C₁ to C₅₀ alkyl chain.

T can represent, for example:



20 or



with w being an integer ranging from 1 to 10 and R⁵ being a polyorganosiloxane chain.

When Y is a linear or branched C₁ to C₄₀ alkylene group, the -(CH₂)₂- and -(CH₂)₆- groups are preferred.

In the formula for Y given hereinabove, d can be an integer ranging from 0 to 5, preferably from 0 to 3,
5 preferably still equal to 1 or 2.

B² preferably is a linear or branched C₁ to C₄₀ alkylene group, in particular -(CH₂)₂- or -(CH₂)₆-, or the group:

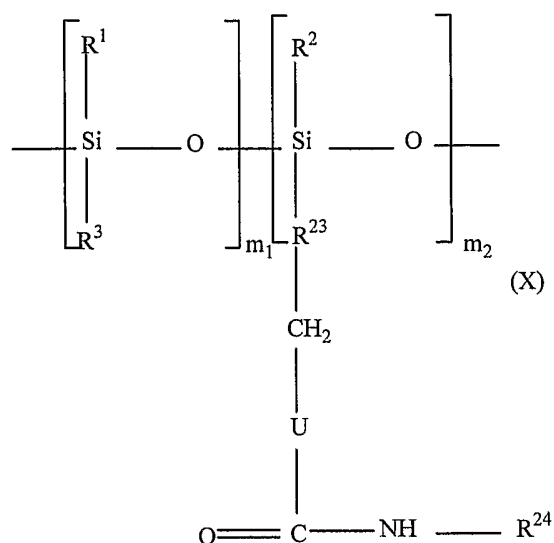


with R⁵ being a polyorganosiloxane chain.

As previously, the polymer constituting the gelling agent can be formed from silicone urethane and/or
15 silicone urea moieties of different length and/or constitution, and be in the form of block, sequenced or statistical (random) copolymers.

According to the invention, the silicone also can comprise urethane and/or urea groups no longer in the
20 backbone but as side branches.

In this case, the polymer can comprise at least one moiety of formula:



in which R^1 , R^2 , R^3 , m_1 and m_2 have the meanings given hereinabove for formula (I),

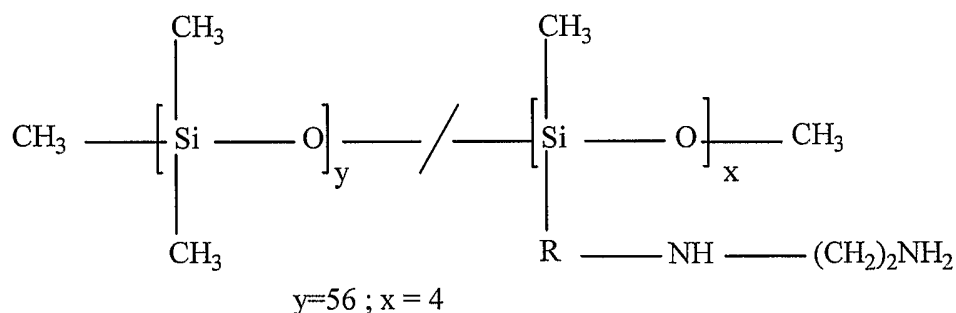
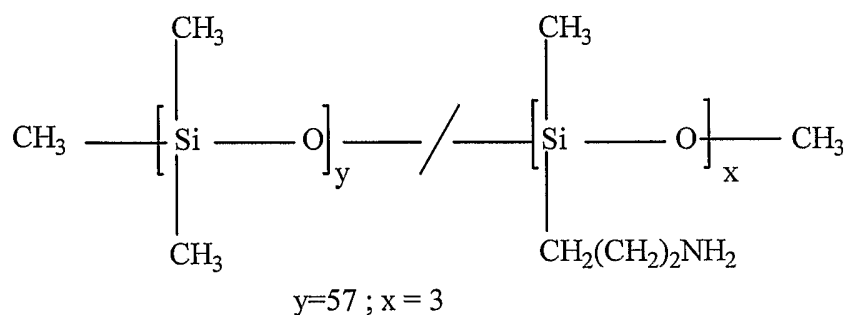
- 5 - U represents O or NH,
 - R²³ represents a C₁ to C₄₀ alkylene group, possibly
comprising one or more hetero atoms chosen from among O and
N, or a phenylene group, and
 - R²⁴ is chosen from among the linear, branched or
10 cyclic, saturated or unsaturated C₁ to C₅₀ alkyl groups, and
the phenyl groups possibly substituted with one to three C₁
C₃ alkyl groups.

The polymers comprising at least one moiety of formula (X) contain siloxane units and urea or urethane groups, and they can be used as gelling agents in the compositions of the invention.

The siloxane polymers can have a single urea or urethane group by branching or can have branches with two urea or urethane groups, or even contain a mixture of 20 branches with one urea or urethane group and branches with two urea or urethane groups.

They can be obtained from branched polysiloxanes, comprising one or two amino groups by branching, by reacting these polysiloxanes with monoisocyanates.

As examples of starting polymers of this type
5 having amino and diamino branches, there can be cited the polymers corresponding to the following formulas:



10 In these formulas, the symbol "/" indicates that the segments can be of different lengths and in a random order, and R represents a linear aliphatic group preferably having 1 to 6 carbon atoms and better still 1 to 3 carbon atoms.

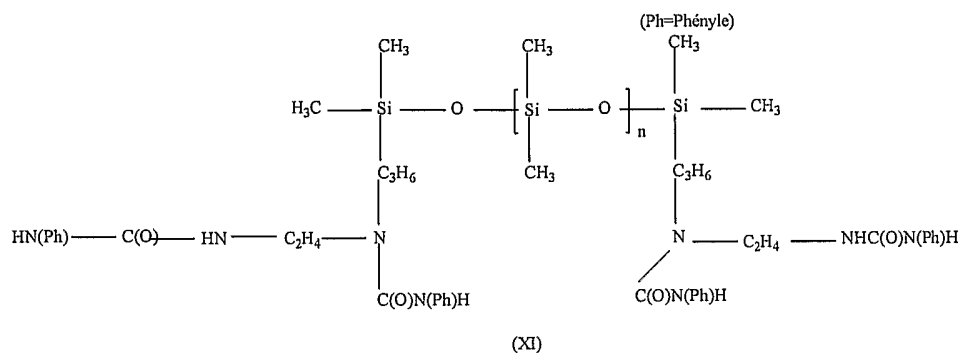
15 Such polymers with branching can be formed by reacting a siloxane polymer, having at least three amino groups per polymer molecule, with a compound having only one monofunctional group (for example an acid, an isocyanate or

isothiocyanate) in order to react this monofunctional group with one of the amino groups and to form groups capable of establishing hydrogen interactions. The amino groups can be on side chains extending from the main chain of the siloxane polymer, so that the groups capable of establishing hydrogen interactions are formed on these side chains, or else the amino groups can be at the ends of the main chain, so that the groups capable of hydrogen interaction will be end groups of the polymer.

10 As an operating method for forming a polymer containing siloxane units and groups capable of establishing hydrogen interactions, there may be cited the reaction of a siloxane diamine and a diisocyanate in a silicone solvent so as to provide a gel directly. The reaction can be performed in a silicone fluid, the resulting product being dissolved in the silicone fluid, at high temperature, the temperature of the system then being reduced in order to form the gel.

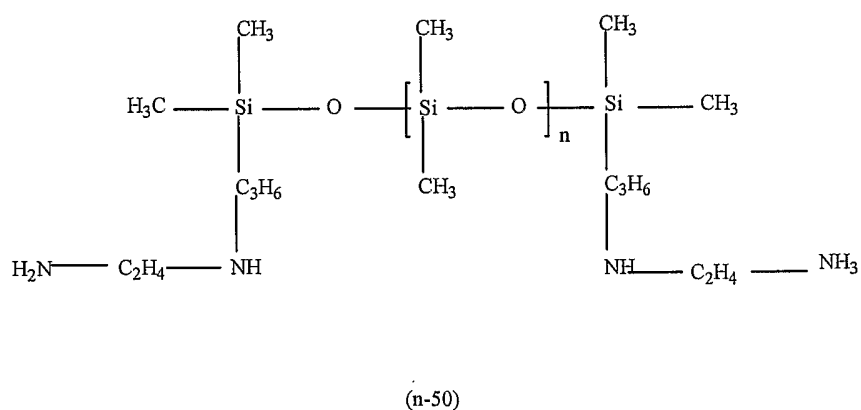
20 The polymers preferred for incorporation into the compositions according to this invention are siloxane-urea copolymers which are linear and which contain urea groups as groups capable of establishing hydrogen interactions in the backbone of the polymer.

25 As an illustration of a polysiloxane ending with four urea groups, there may be cited the polymer of formula:



in which Ph is a phenyl group and n is a number from 0 to 300, in particular from 0 to 100, for example 50.

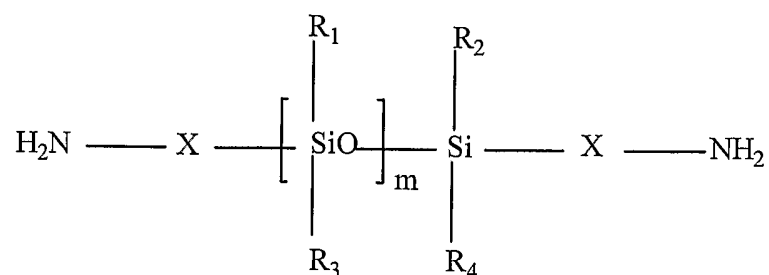
- 5 This polymer is obtained by reaction of the following polysiloxane having amino groups:



- 10 with phenyl isocyanate.

The polymers of formula (VIII) comprising urea or urethane groups in the chain of the silicone polymer can be obtained by reaction between a silicone having α, ω -NH₂ or -OH end groups, of formula:

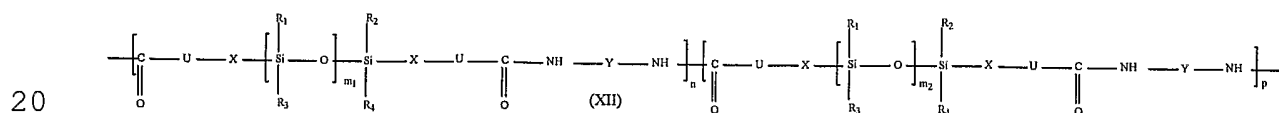
- 15



in which m , R^1 , R^2 , R^3 , R^4 and X are such as defined for formula (I), and a diisocyanate OCN-Y-NCO in which Y has the
 5 meaning given in formula (I); and possibly a diol or diamine coupling agent of formula $\text{H}_2\text{N-B}^2\text{-NH}_2$ or $\text{HO-B}^2\text{-OH}$, in which B^2 is such as defined in formula (IX).

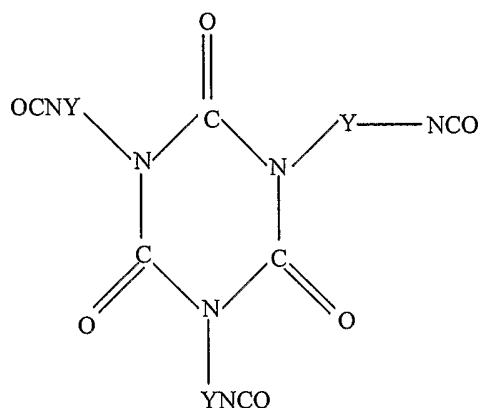
According to the stoichiometric proportions between the two reagents, diisocyanate and coupling agent, Y
 10 can have the formula (IX) with d equal to 0 or d equal to 1 to 5.

As in the case of the silicone polyamides of formula (II) or (III), there may be used in the invention silicone polyurethanes or polyureas having moieties of
 15 different length and structure, in particular moieties with lengths differing by the number of silicone units. In this case, the copolymer can correspond, for example, to the formula:



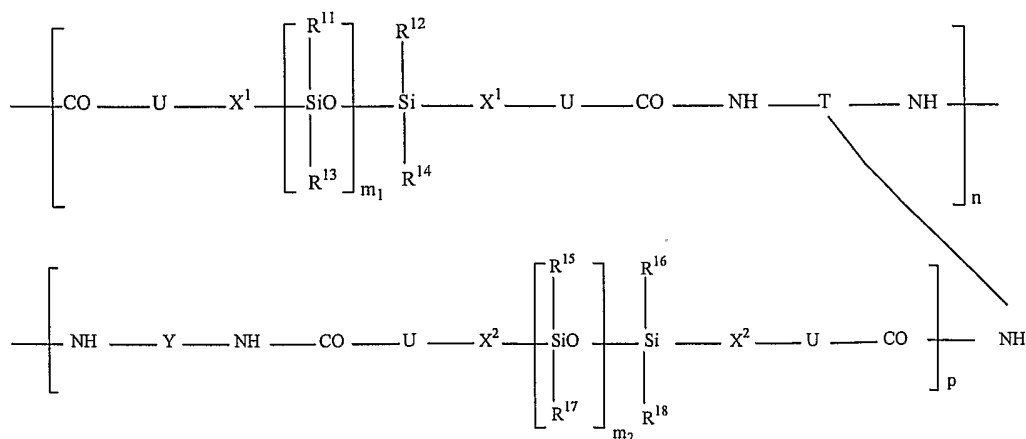
in which R^1 , R^2 , R^3 , R^4 , X , Y and U are such as defined for formula (VIII) and m_1 , m_2 , n and p are such as defined for formula (V).

Branched silicone polyurethanes or polyureas also may be obtained by using, instead of the diisocyanate OCN-Y-NCO, a triisocyanate of formula:



5

A silicone polyurethane or polyurea having branches comprising an organosiloxane chain with groups capable of establishing hydrogen interactions is obtained in this manner. Such a polymer comprises, for example, a moiety corresponding to the formula:



(XIII)

in which X^1 and X^2 , which are identical or different, have the meaning given for X in formula (I), n is such as defined in formula (I), Y and T are such as defined in formula (I), R^{11} to R^{18} are groups chosen from within the same group as R^1 to R^4 , m_1 and m_2 are numbers falling in the range from 1 to 1000, and p is an integer ranging from 2 to 500.

As in the case of the polyamides, this copolymer also can comprise silicone polyurethane moieties without branching.

In this second embodiment of the invention, the preferred siloxane-based polyureas and polyurethanes are:

- polymers of formula (VIII) in which m is from 15 to 50;

- mixtures of two or more polymers in which at least one polymer has a value of m in the range from 15 to 50 and at least one polymer has a value of m in the range from 30 to 50;

- polymers of formula (VIII) with m_1 chosen from within the range from 15 to 50 and m_2 chosen from within the range from 30 to 500 with the portion corresponding to m_1 representing 1 to 99% by weight of the total weight of the polymer and the portion corresponding to m_2 representing 1 to 99% by weight of the total weight of the polymer;

- mixtures of polymer of formula (VIII) combining

- 1) 80 to 99% by weight of a polymer in which n is equal to 2 to 10, in particular 3 to 6, and

- 2) 1 to 20% of a polymer in which n is in the range from 5 to 500, in particular from 6 to 100,

- copolymers comprising two moieties of formula (VIII) in which at least one of the groups Y contains at least one hydroxyl substituent;

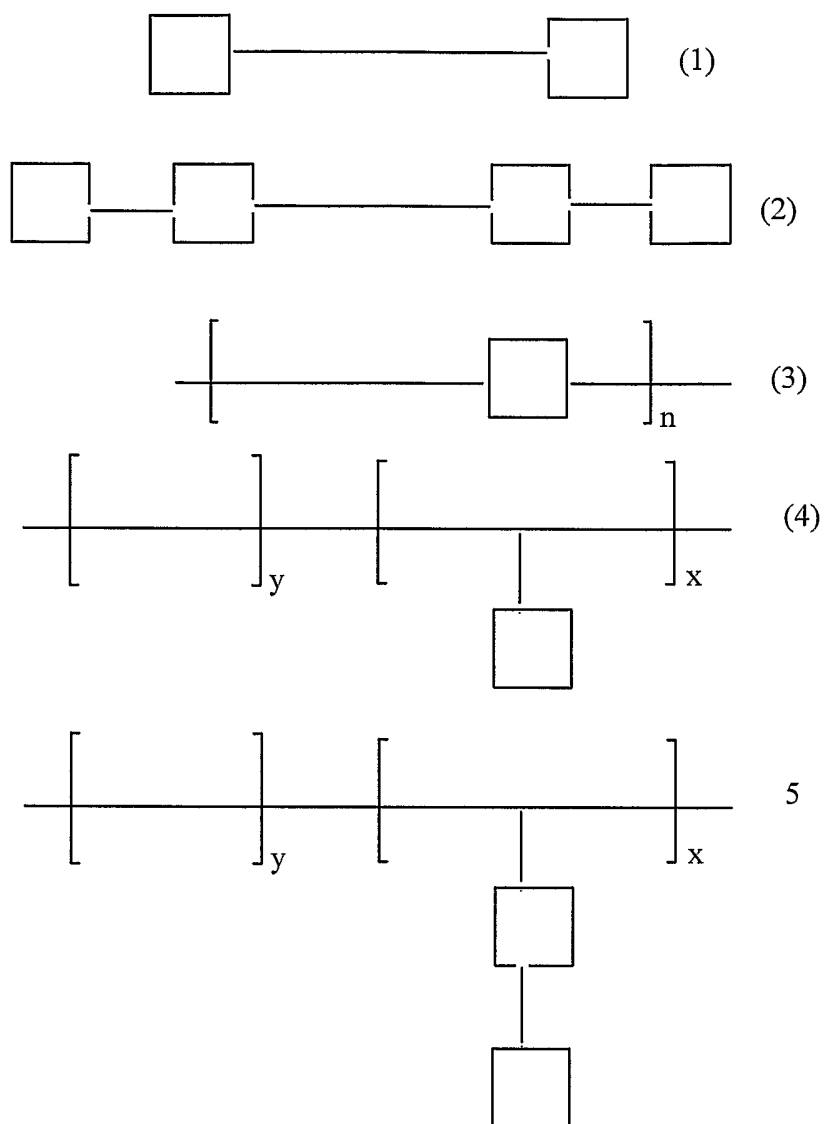
- polymers of formula (VIII) synthesized with at least one portion of an activated diacid (diacid chloride, dianhydride or diester) instead of the diacid;

- polymers of formula (VIII) in which X represents $-(CH_2)_3-$ or $-(CH_2)_{10}-$; and

- polymers of formula (VIII) in which the polymers are terminated with a monofunctional chain chosen from among the group consisting of monofunctional amines, monofunctional acids, monofunctional alcohols, including fatty acids, fatty alcohols and fatty amines, such as, for example, octylamine, octanol, stearic acid and stearyl acid.

As in the case of the polyamides, copolymers of silicone polyurethane--or polyurea--and of hydrocarbon polyurethane or polyurea can be used in the invention by performing the reaction for synthesizing the polymer in the presence of an α,ω -difunctional sequence of non-silicone nature, for example a polyester, a polyether or a polyolefin.

As has been seen previously, the gelling agents consisting of homopolymers or copolymers of the invention can have siloxane moieties in the main chain of the polymer and groups capable of establishing hydrogen interactions, either in the main chain of the polymer or at the ends thereof, or on side chains or branches of the main chain. This can correspond to the following five arrangements:



in which the continuous line is the main chain of the siloxane polymer and the squares represent the groups
 5 capable of establishing hydrogen interactions.

In case (1), the groups capable of establishing hydrogen interactions are arranged at the ends of the main chain. In case (2), two groups capable of establishing hydrogen interactions are arranged at each of the ends of
5 the main chain.

In case (3), the groups capable of establishing hydrogen interactions are arranged within the main chain in repeating moieties.

In cases (4) and (5), these are copolymers in
10 which the groups capable of establishing hydrogen interactions are arranged on branches of the main chain of a first series of moieties which are copolymerized with moieties not comprising groups capable of establishing hydrogen interactions. The values n, x and y are such that
15 the polymer has the desired properties as a gelling agent for fatty phases based on silicone oil.

According to the invention, the structuring of the liquid fatty phase containing at least one silicone oil is obtained with the aid of one or more of the polymers
20 mentioned above in combination with one or more film-forming silicone resins.

As examples of polymers which can be used, there may be cited the silicone polymers obtained in accordance with Examples 1 and 2 of document US-A-5,981,680.

25 The polymers and copolymers used in the gelling system for the composition of the invention advantageously have a softening point of 65° C to 190° C. They preferably have a softening point ranging from 70 to 130° C and better from 80° C to 105° C. This softening point is lower than

that of the known structuring polymers, which facilitates the use of the polymers which are the subject of the invention, makes possible the use of volatile oils and limits the degradation of the liquid fatty phase.

5 They have good solubility in silicone oils and result in macroscopically homogeneous compositions. They preferably have an average molecular mass from 500 to 200,000, for example from 1,000 to 100,000, preferably from 2,000 to 30,000.

10

Film-forming silicone resin

 The composition according to the invention contains one or more film-forming silicone resins. This or these film-forming silicone resin(s) makes/make it possible
15 to improve the staying power and to obtain all the surprising effects mentioned above.

 As a general rule, the word "resin" denotes a three-dimensional structure.

 The at least one film-forming silicone resin used
20 in the compositions of the invention can be any silicone resin which has film-forming properties.

 In one embodiment, the film-forming silicone resin is chosen from among the silsesquioxanes, the siloxysilicates and the resins obtained by
25 hydroxysililation.

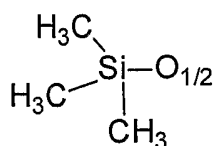
 The use of silicone polymers or derivatives thereof as film-forming agents in cosmetic compositions is known in the art: see for example, the patents US-A-5,965,112, US-A-5,800,816, US-A-5,911,974 and US-A-

5,959,009. Nonetheless, the combination of such resins with the special polymers according to the invention is neither described nor suggested in the prior art. Nothing led one to imagine, in consideration of the prior art, that such a combination could result in a surprising improvement in the properties, especially of staying power and possibly of non-transfer, in a deposit obtained from a cosmetic composition comprising this combination.

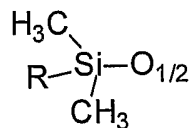
The nomenclature of the silicone resins is known in the art under the name of "MDTQ" nomenclature, by which a silicone resin is described according to the various repeating siloxane monomer moieties which constitute the polymer.

Each letter of "MDTQ" corresponds to a different type of moiety.

The symbol "M" corresponds to the monofunctional moiety $(\text{CH}_3)_3\text{SiO}_{1/2}$. This moiety is regarded as monofunctional because the silicon atom shares only one oxygen for the formation of the chain. The "M" moiety can be represented by:



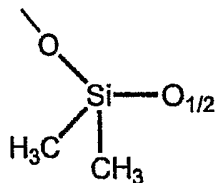
At least one of the methyl groups can be replaced so as, for example, to produce a moiety with the formula $[\text{R}(\text{CH}_3)_2]\text{SiO}_{1/2}$, such as represented by the following structure:



in which R is other than a methyl group.

5 The symbol "D" corresponds to the difunctional moiety $(\text{CH}_3)_2\text{SiO}_{2/2}$ in which two of the available bonds on the silicon atom are used to bond with oxygen for the formation of the polymer chain.

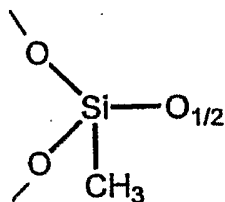
10 The "D" moiety, which is the essential component element of the dimethicone oils, can be represented by:



15 The symbol "T" corresponds to the trifunctional moiety $(\text{CH}_3)\text{SiO}_{3/2}$, in which three of the available bonds on the silicon atom are used to bond with oxygen for the formation of the polymer chain.

The "T" moiety can be represented by:

20

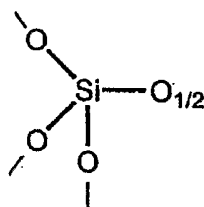


As in the "M" moiety, any one of the methyl groups can be replaced in "D" or "T" by an R group which is other than methyl.

5 Finally, the symbol "Q" corresponds to a quadrifunctional moiety $\text{SiO}_{4/2}$, in which all four available bonds on the silicon atom are used to bond with oxygen for the formation of the polymer chain.

The "Q" moiety can be represented by:

10



The number of different silicones which can be produced is staggering. It is clear to the person skilled in this field of the art that the properties of each of the silicones are going to vary according to the type of monomer, the type of substitution, the size of the polymer chain, and the degree of crosslinking or the size of the side chain. Different properties are obtained depending on whether the backbone (the main chain) is a silicone chain with carbon-based side chains or the backbone is carbon-based with silicone side chains.

15

20

As has been described hereinabove, in one embodiment the (at least) one film-forming silicone resin can be chosen from among the siloxysilicates, silsesquioxanes and resins obtained by hydroxysililation.

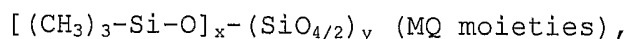
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Any siloxysilicate, silsesquioxane or resin obtained by hydroxysililation which acts as a film-forming agent can be used in the composition of the invention. The film-forming silicone resins preferably are crosslinked.

5 In one embodiment, the film-forming silicone resin is chosen from among the substituted siloxysilicates, silsesquioxanes and resins obtained by hydroxysililation. A substituted siloxysilicate or a substituted silsesquioxane can be, for example, a siloxysilicate or a silsesquioxane in
10 which a methyl group has been replaced by a longer carbon chain, such as an ethane, propane or butane chain. The carbon chain can be saturated or nonsaturated.

In one embodiment, the film-forming silicone resin is chosen from among the siloxysilicates, such as the trimethylsiloxysilicates, which are represented by the following formula:

5

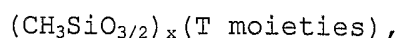


10 in which x and y can have values ranging from 50 to 80.

In another embodiment, a siloxysilicate can be chosen from among all the combinations of M and of Q moieties such as, for example, $[\text{R(R)}_3\text{-Si-O}]_x\text{-(SiO}_{4/2}\text{)}_y$, in
15 which R is chosen from among the methyl groups and the longer carbon chains.

In another embodiment, the film-forming silicone resin is chosen from among the silsesquioxanes which are represented by the following formula:

20



25 in which x has a value which can range up to several thousands and the CH_3 can be replaced by an R, such as described hereinabove for the T moieties.

In one embodiment, the silsesquioxane is chosen from among the polymethylsilsesquioxanes, which are the

silsesquioxanes which do not have a substituent replacing the methyl group.

The polymethylsilsesquioxanes useful in this invention are film-forming agents and can comprise, for example, approximately 500 or fewer T moieties, preferably from approximately 50 to approximately 500 T moieties.

In one embodiment of the invention, these film-forming silicone resins are soluble or dispersible in silicones, in particular volatile, or other organic liquids.

10 In one embodiment, the film-forming silicone resin or resins can be solid at approximately 25° C. They preferably exist in crosslinked or three-dimensional form. In one embodiment, the film-forming silicone resin can have a molecular mass ranging from 1000 to 10,000 grams/mole. In

15 one embodiment, the film-forming silicone resin or resins is/are present in the composition in a quantity ranging from 0.5% to 20% by weight with respect to the total weight of the composition, preferably in a quantity from 1% to 10%. The film-forming silicone resins advantageously comprise one

20 or more hydrophilic groups, imparting emulsifying properties thereto. Under these conditions, the composition can contain an aqueous phase and the resin can function as a dispersant of the aqueous phase in the liquid fatty phase and conversely depending on the ratio between the

25 hydrophilic portion and the hydrophobic (that is, silicone) portion. The resin also can be present only in the aqueous phase.

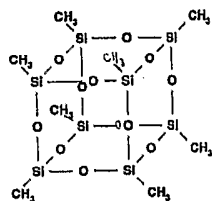
Not all the polymethylsilsesquioxanes are film-forming.

For example, the highly polymerized polymethylsilsesquioxanes (T resins), such as TOSPEARL™ from TOSHIBA or KMP590 from SHIN-ETSU are very insoluble and because of this are therefore not effective film-forming agents.

5 The molecular mass of these polymethylsilsesquioxanes is difficult to determine, and they generally contain a thousand or more than a thousand T moieties.

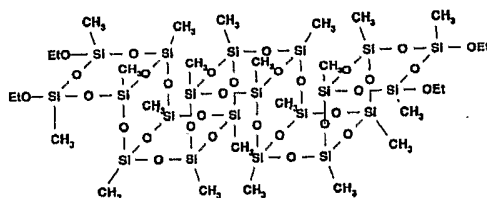
10 An example of a polymethylsilsesquioxane which can be used according to the invention is BEL SIL PMS MK, also called RESIN MK, available from WACKER CHEMIE. The polymethylsilsesquioxane is a polymer made up mainly of repeating $\text{CH}_3\text{SiO}_{3/2}$ moieties (T moieties), and which also can contain up to approximately 1% (by weight or by mole) of
15 $(\text{CH}_3)_2\text{SiO}_{2/2}$ (D moieties). The polymers are thought to be in a "cage" and "ladder" configuration as illustrated below. It has been calculated that the weight-average molecular mass of the "cage" moiety is 536.

20 Most polymers are in the "ladder" configuration, in which the ends are stricken out with ethoxy($\text{CH}_3\text{CH}_2\text{O}$) groups. The weight percentage of ethoxy present is approximately 4.5%, and this mole percentage is approximately 7% (silicone moieties). As this functionality can react with water, a small, variable quantity of SiOH
25 also can be present. The weight-average molecular mass can be, for example, from approximately 50 to approximately 50,000, preferably approximately 10,000.



"Cage"

5



"Ladder"

The polymethylsilsequioxanes suitable for a use
 10 in this invention also comprise KR-220L, available from
 SHIN-ETSU. The structure of KR-220L consists essentially of
 (CH₃SiO_{3/2}) T silicone moieties, with Si-OH or silanol end
 moieties. There are no D moieties.

Other polymethylsilsequioxanes which can be
 15 useful in the implementation of the invention contain KR-
 242A which has a structure with approximately 98% T methyl
 moieties and approximately 2% D dimethyl moieties, with Si-
 OH or silanol end moieties, and KR-251, which has a
 structure with approximately 88% T methyl moieties and
 20 approximately 12% D dimethyl moieties, with Si-OH or silanol
 end moieties; both are available from SHIN-ETSU.

In one embodiment of the invention, the film-
 forming silicone resin or resins is/are chosen from among

the combinations of M, D, T and Q moieties containing at least two moieties chosen from among M, D, T and Q which satisfy the relationship $R_nSiO_{(4-n)}$, in which n has a value ranging from 1.0 to 1.50. Some resins of this type are
5 described in US-A-6,074,654. R can be a methyl group or any carbon chain starting from the point at which the silicone resin retains its film-forming properties. Up to 5% of a silanol or alkoxy functionality also can be present in the structure of the resin, as a result of treatment thereof.

10 In order for the resin to be crosslinked, it is necessary that at least one moiety be chosen from T or Q (moiety for crosslinking via a silicon bridge), the other moiety being able to be chosen from M (end moiety) and/or D (non-crosslinked chain fragment moiety).

15 In another embodiment, the film-forming silicone resin or resins contains/contain repeating M and Q moieties. The ratio of the M moieties to the Q moieties can be, for example, approximately 0.7:1. The at least one film-forming silicone resin can be chosen, for example, from among the
20 WACKER 803 and 804 resins, available from WACKER SILICONE CORPORATION, and G. E. 1,170-002, available from GENERAL ELECTRIC.

In another embodiment, the film-forming silicone resin or resins is/are a copolymer, in which at least one
25 moiety of the copolymer is chosen from among the M, D, T and Q silicone moieties and in which at least one additional moiety of the copolymer is chosen from among the esters. Again, in order for the resin to be crosslinked, the moieties must be chosen as indicated above.

The film-forming silicone resin or resins can be chosen from among, for example, the diisostearyl trimethylolpropane siloxysilicates, such as SF 1,318, available from GE SILICONES.

5 As a silicone resin which can be used in the invention, there also may be cited the organopolysiloxanes obtained (crosslinked) by hydroxysililation. These resins are able to be obtained from a silicone prepolymer of the polydialkylsiloxane type containing hydrogenosiloxane
10 moieties pendent or at the end of the chain, which have reacted with an organic compound comprising at least 2 unsaturations of the vinyl, allyl or methallyl type. This organic compound can be a diene (hexadiene, heptadiene, octadiene), a silicone chain comprising at least 2 pendent
15 or end vinyl or allyl groups or even a polyalkylene, preferably hydrophilic (for example with a polyoxyethylene or polyoxyethylene-polypropylene group with 1 to 40 oxyethylene or oxypropylene moieties), comprising at least 2 double bonds, pendent or at the end of the chain (and better
20 at the end of the chain).

 Furthermore, these resins additionally can comprise hydrophilic or hydrophobic grafts, and better hydrophilic of the polyoxyalkylene type comprising a sole unsaturation preferably at the end of the chain, the
25 alkylene portion having from 2 to 20 carbon atoms and the hydrophilic portion from 1 to 20 oxyethylene groups. This type of graft makes it possible to impart emulsifying properties to the resin in addition to its film-forming properties.

As an example of resin obtained by hydroxysililation, there can be cited those described in the application EP-A-0295886. According to this application, they are obtained by addition and crosslinking reaction, in
5 the presence of a platinum-type catalyst, of at least:

- (a) an organopolysiloxane having at least two C_2-C_6 lower alkenyl groups per molecule; and

- (b) an organopolysiloxane having at least two hydrogen atoms bonded to a silicon atom per molecule. Those
10 described in US patent 5,266,321 also can be used. According to this patent, they are chosen in particular from among:

- i) the organopolysiloxanes containing R_2SiO and $RSiO_{1.5}$ moieties and possibly $R_3SiO_{0.5}$ and/or SiO_2 moieties in
15 which the R radicals, independently of each other, represent a hydrogen, an alkyl such as methyl, ethyl or propyl, an aryl such as phenyl or tolyl, an unsaturated aliphatic group such as vinyl, the ratio by weight of the R_2SiO moieties over the $RSiO_{1.5}$ moieties ranging from 1/1 to 30/1;

- ii) the organopolysiloxanes insoluble and
20 expansible in silicone oil, able to be obtained by addition of an organohydrogenopolysiloxane (1) and an organopolysiloxane (2) having unsaturated aliphatic groups such that the quantity of hydrogen or of unsaturated
25 aliphatic groups in (1) and (2) respectively ranges between 1 and 20% mol when the organopolysiloxane is noncyclic and between 1 and 50% mol when the organopolysiloxane is cyclic. These organopolysiloxanes possibly can comprise from 1 to 40 oxyalkylene and more especially oxypropylene and/or

oxyethylene groups, and in particular from 1 to 20 oxyalkylene groups, all or a portion of these groups preferably being oxyethylene.

As examples of resins obtained by hydroxysililation which are useable according to the invention, there can be cited those marketed under the names KSG6 from Shin-Etsu, Trefil E-505C or Trefil E-506C from Dow-Corning, Gransil from Grant Industries (SR-CYC, SR DMF10, SR-DC556) or those marketed in the form of already composed gels (KSG15, KSG17, KSG16, KSG18, KSG20, KSG21, KSG31, KSG32 from Shin-Etsu, Gransil SR 5CYC gel, Gransil SR DMF 10 gel, Gransil SR DC556 gel, SF 1204 and JK 113 from General Electric. The Dow Corning DC9010 and DC 9011 and the Wacker EF199913 products also may be used; these products comprise all the oxyethylene groups, just as the KSG20, KSG21, KSG31 and KSG32 products. A mixture of these commercial products also may be used. These products are obtained in particular as described in the patents US-A-5,236,986 of Shin-Etsu, US 5412004 of Kosé and Shin-Etsu or also US-A-5,811,487 of Dow Corning.

In addition, irrespective of the type of film-forming silicone resin, the latter can be crosslinked.

Furthermore, irrespective of the type of film-forming silicone resin, crosslinked or non-crosslinked, it possibly also can comprise a hydrophilic group or groups or grafts, in particular of the polyoxyalkylene type, such as the POEs, the PPOs and the POE/PPOs. This means that the film-forming silicone resin also can be represented in the aqueous phase as already has been mentioned above.

The quantities of film-forming silicone resin or resins and of structuring polymer or polymers can be chosen according to the hardness desired and the stability desired in the compositions and according to the specific application contemplated. The respective quantities of the at least one structuring polymer and of the film-forming silicone resin or resins can be such that a solid which can disintegrate and does not flow under the effect of its own weight is obtained.

According to the invention, the polymer can be combined with at least one amphiphilic compound liquid at room temperature, with a hydrophilic/lipophilic balance (HLB) value less than 12, in particular ranging from 1 to 7, preferably from 1 to 5, and better from 3 to 5. According to the invention, one or more amphiphilic compounds may be used. These amphiphilic compounds have the purpose of intensifying the structuring properties of the polymer, facilitating the use of the polymer and improving the depositing capacity of the stick.

According to the invention, the composition preferably has a hardness ranging from 20 to 2,000 gf and better from 20 to 900 gf, in particular from 20 to 600 gf and for example from 150 to 450 gf. This hardness can be measured according to a method of penetration of a probe into said composition and in particular with the aid of a texture analyzer (for example TA-TXT2i from Rheo) equipped with an ebonite cylinder 25 mm in height and 8 mm in diameter. The hardness measurement is performed at 20° C at the center of five samples of said composition. The

cylinder is introduced into each sample of composition at a pre-speed of 2 mm/s, then at a speed of 0.5 mm/s and finally at a post-speed of 2mm/s, the total displacement being 1 mm. The recorded hardness value is that of the maximum peak.

5 The measurement error is ± 50 gf.

Hardness also can be measured by the so-called cheesewire method, which consists in cutting a lipstick 12.7 mm in diameter and measuring the hardness at 20° C by means of a DFGHS 2 dynamometer from the company Indelco-Chatillon moving at a speed of 100 mm/minute. It is expressed as the shear force (expressed in gramforce) required to cut a stick under these conditions. According to this method, the hardness of a stick composition according to the invention ranges from 30 to 300 gf, preferably from 30 to 250 gf and
10 for example from 30 to 200 gf, better from 30 to 120 gf, 15 when the diameter of the stick is equal to 12.7 mm.

The hardness of the composition according to the invention is such that the composition is self-supporting and can disintegrate easily to form a satisfactory deposit on the skin and the lips. In addition, with this hardness, the composition of the invention has good impact resistance.
20

According to the invention, the solid composition, in the form of a stick has the behavior of a deformable, supple elastic solid, imparting a noteworthy elastic softness on application. The stick compositions of the prior art do not have this property of elasticity and suppleness.
25

The amphiphilic, silicone and non-silicone compound or compounds which can be used in the composition

of the invention comprise a lipophilic portion associated with a polar portion, the lipophilic portion comprising a carbon chain having at least 8 carbon atoms, in particular from 18 to 32 carbon atoms, and better from 18 to 28 carbon atoms. The polar portion of this or these amphiphilic compound(s) preferably is the residue of a compound chosen from among the alcohols and polyols having 1 to 12 hydroxyl groups, the polyoxyalkylenes comprising at least two oxyalkylene moieties and having from 0 to 20 oxypropylene moieties and/or from 0 to 20 oxyethylene moieties. In particular, the amphiphilic compound is an ester chosen from among the hydroxystearates; the oleates; the glycerol, sorbitan or methylglucose isostearates; or even C₁₂ to C₂₆ branched fatty alcohols such as octyldodecanol and mixtures thereof. Among these esters, monoesters and mixtures of mono- and diesters are preferred.

The respective levels of film-forming silicone resin and structuring silicone polymer and possibly of amphiphilic compound are chosen according to the desired hardness of the gel and in terms of the specific application contemplated. The respective quantities of polymer, of film-forming silicone resin and possibly of amphiphilic compound are to be such that they make it possible to obtain a self-supporting composition, for example in the form of a cleavable stick. In practice, the quantity of polymer (in active substance) represents from 0.5 to 80% of the total weight of the composition, and better from 5 to 40%. The quantity of amphiphilic compound in practice represents from

0.1% to 35% of the total weight of the composition, for example from 1% to 20% and better from 2% to 15%.

According to the invention, it furthermore is preferable that the quantity of film-forming silicone resin
5 be smaller than the quantity of structuring silicone polymer.

Generally, the silicone polymer/film-forming silicone resin mass ratio lies in the range from 20 to 0.15 and better from 15 to 1.5.

10 The structuring silicone polymer preferably represents 5 to 30% by weight of the composition. The silicone resin preferably represents 0.5 to 20% by weight of the composition.

15 **Other additives**

In addition, the composition of the invention can comprise any ingredient usually used in the field concerned, and in particular those chosen from among the dyes soluble in polyols or in the fatty phase, antioxidants, essential
20 oils, preservatives, fragrances, liposoluble polymers, in particular hydrocarbons such as polyalkylenes or vinyl polylaurate, the gelling agents of the liquid fatty phase, gums, resins, surfactants such as tri-oleyl phosphate, additional cosmetic or dermatological active substances such
25 as water for example, emollients, moisturizers, vitamins, liquid lanolin, essential fatty acids, sunscreens which are lipophilic or soluble in polyols, and mixtures thereof. The composition according to the invention also can contain lipid vesicles of the ionic and/or non-ionic type. These

ingredients, except for water, can be present in the composition usually in a proportion from 0 to 20%, preferably from 0.01 to 20%, of the total weight of the composition, and better from 0.1 to 10%.

- 5 In the event that the composition contains an aqueous phase, which is the case for a simple or multiple emulsion, this aqueous phase can represent from 0.1 to 70% of the total weight of the composition, in particular from 0.5 to 40% and better from 1 to 20%. This aqueous phase can contain any
- 10 compound miscible with water, such as polyols, and possibly be gelled with a suitable gelling agent.

Of course, the person skilled in the art will make sure to choose the possible additional ingredients and/or the quantity thereof in such manner that the advantageous properties of the composition according to the invention are not, or are not substantially, impaired by the contemplated addition.

The composition according to the invention may exist in the form of a dermatological or care composition, possibly tinted, for keratinous matter such as the skin, the lips and/or the phaneric structures, in the form of a composition for sun protection, body hygiene or care, in particular in the form of a deodorant or makeup-removal product in stick or case form. It can be used in particular as a care base for the skin, the phaneric structures or the lips (lip balms, protecting the lips against cold and/or sun and/or wind, a care cream for the skin, nails or hair).

The composition of the invention can exist, in particular, in the form of a rigid gel, especially an anhydrous transparent stick.

The composition of the invention also may exist in the form of a colored makeup product for the skin, in particular a foundation, possibly having care or treatment properties, a blusher, a face powder or eye shadow, a concealer product, an eyeliner, a makeup product for the body; makeup for the lips such as a lipstick, a lip gloss or a pencil possibly

having care or treatment properties; makeup for the phaneric structures such as the nails, the eyelashes, in particular in the form of a cake mascara, the eyebrows and the hair, particularly in the form of a pencil.

5 In particular, the composition of the invention can be a cosmetic product containing cosmetic and/or dermatological active substances such as essential oils, vitamins, moisturizers, filters, healing agents, ceramides.

10 In the case of makeup compositions, the hydrophobic or hydrophilic solid particles can constitute the pigment(s) making it possible to make up the skin, lips and/or phaneric structures.

15 Of course, the composition of the invention should be cosmetically or dermatologically acceptable, that is, contain a non-toxic physiologically acceptable medium able to be applied to the skin, phaneric structures or lips of humans. In the meaning of the invention, cosmetically acceptable is understood as a composition with pleasant appearance, odor and feel.

20 According to the invention, the composition furthermore can contain a coloring agent which can be chosen from among the lipophilic dyes, hydrophilic dyes, and mixtures thereof.

25 This coloring agent generally is present in a proportion from 0.01 to 50% of the total weight of the composition, preferably from 5 to 30%, if it is present. It is to be noted that a coloring effect also can be provided by the pigments (and nacreous pigments) already described above in the context of the solid particles.

The liposoluble dyes are, for example, Sudan Red, D&C Red 17, D&C Green 6, β -carotene, soybean oil, Sudan Brown, D&C Yellow 11, D&C Violet 2, D&C Orange 5, quinoline yellow or annatto.

5 The hydrophilic dyes are, in particular, beetroot juice and methylene blue. The soluble dyes can represent from 0 to 20% of the weight of the composition and better from 0.1 to 6% (if present).

 The composition according to the invention can be
10 manufactured by known processes generally used in the cosmetic or dermatological field. It can be manufactured by the process which consists in heating the polymer at least to its softening point, adding the oil(s), the film-forming silicone resin or resins and, if necessary, the amphiphilic
15 compound or compounds thereto, then mixing the whole until a clear solution is obtained. There then are added, with stirring, the coloring agents and/or solid particles and the additives. The homogeneous mixture obtained then can be cast in a suitable mold such as a lipstick mold or directly
20 into packaging articles (case or dish in particular).

 The invention also has as a purpose a structured solid composition for making-up of the skin, the lips and/or phaneric structures containing at least one pigment in sufficient quantity for making up the skin, lips and/or
25 phaneric structures, and a continuous liquid fatty phase comprising at least one silicone oil, structured with at least one polymer (homopolymer or copolymer) with a weight-average molecular mass ranging from 500 to 500,000, containing at least one moiety comprising:

- at least one polyorganosiloxane group, composed of 1 to 1000 organosiloxane units in the chain of the moiety or in the form of a graft, and
 - at least two groups capable of establishing hydrogen interactions chosen from among ester, amide, sulfonamide, carbamate, thiocarbamate, urea, thiourea, oxamido, guanidino, biguanidino groups, and combinations thereof, on condition that at least one group is other than an ester group,
- the polymer being solid at room temperature and soluble in the liquid fatty phase at a temperature of 25 to 250°C, the liquid fatty phase consisting in whole or in part of silicone oil(s),
- said composition containing a film-forming silicone resin and existing in the form of a solid, and the pigment, the liquid fatty phase, the film-forming silicone resin and the polymer forming a physiologically acceptable medium.
- This makeup composition preferably is self-supporting.

The invention also relates to a structured composition for lipstick, containing at least one pigment in sufficient quantity for making up the lips, and a continuous liquid fatty phase comprising at least one silicone oil,
5 structured with at least one polymer (homopolymer or copolymer) with a weight-average molecular mass ranging from 500 to 500,000, containing at least one moiety comprising:

- at least one polyorganosiloxane group, composed of 1 to 1000 organosiloxane units in the chain of the moiety
10 or in the form of a graft, and
- at least two groups capable of establishing hydrogen interactions, chosen from among ester, amide, sulfonamide, carbamate, thiocarbamate, urea, thiourea, oxamido, guanidino, biguanidino groups, and
15 combinations thereof, on condition that at least one group is other than an ester group,

the polymer being solid at room temperature and soluble in the liquid fatty phase at a temperature of 25 to 250° C,
the liquid fatty phase consisting in whole or in part of
20 silicone oil(s) and a film-forming silicone resin,

said composition existing in the form of a solid, and the pigment, the liquid fatty phase and the polymer forming a physiologically acceptable medium.

The composition of the invention also can exist
25 in the form of a cake mascara, an eyeliner, a foundation, a lipstick, a blusher, a makeup-removal product, a makeup product for the body, an eye shadow or face powder, a concealer.

The invention also has as a purpose a makeup stick for the skin, lips and/or phaneric structures, and in particular the lips, containing at least one pigment in sufficient quantity for making up the skin, lips and/or phaneric structures, and a continuous liquid fatty phase comprising at least one silicone oil, structured with at least one polymer (homopolymer or copolymer) with a weight-average molecular mass ranging from 500 to 500,000, containing at least one moiety comprising:

- 10 - at least one polyorganosiloxane group, composed of 1 to 1000 organosiloxane units in the chain of the moiety or in the form of a graft, and
- 15 - at least two groups capable of establishing hydrogen interactions, chosen from among ester, amide, sulfonamide, carbamate, thiocarbamate, urea, thiourea, oxamido, guanidino, biguanidino groups, and combinations thereof, on condition that at least one group is other than an ester group,

the polymer being solid at room temperature and soluble in the liquid fatty phase at a temperature of 25 to 250° C,

the liquid fatty phase consisting in whole or in part of silicone oil(s), the composition further containing a film-forming silicone resin, the pigment, the fatty phase and the polymer forming a physiologically acceptable medium.

25 The invention relates to a cosmetic process for care, makeup or treatment of keratinous matter in humans, consisting in the application to the keratinous matter of a cosmetic composition according to the invention.

The invention also has as a purpose the use of a sufficient quantity of at least one polymer (homopolymer or copolymer) with a weight-average molecular mass ranging from 500 to 500,000, containing at least one moiety comprising:

- 5 - at least one polyorganosiloxane group, composed of 1 to 1000 organosiloxane units in the chain of the moiety or in the form of a graft, and
- 10 - at least two groups capable of establishing hydrogen interactions, chosen from among ester, amide, sulfonamide, carbamate, thiocarbamate, urea, thiourea, oxamido, guanidino, biguanidino groups, and combinations thereof, on condition that at least one group is other than an ester group,

the polymer being solid at room temperature and soluble in
15 the liquid fatty phase at a temperature of 25 to 250° C, in a cosmetic composition or for the manufacture of a physiologically acceptable composition, containing a) a continuous liquid fatty phase comprising at least one silicone oil, the liquid fatty phase consisting in whole or
20 in part of silicone oil(s) having a flash point equal to or in excess of 40° C and b) of a film-forming silicone resin for structuring said composition in the form of a self-supporting solid with a hardness ranging from 20 to 2000 gf and preferably from 20 to 900 gf and better from 20 to 600
25 gf.

The invention also has as a purpose the use of the combination a) of a continuous liquid fatty phase comprising at least one silicone oil, basically structured with a sufficient quantity of at least one polymer

(homopolymer or copolymer) with a weight-average molecular mass ranging from 500 to 500,000, containing at least one moiety comprising:

- at least one polyorganosiloxane group, composed of 1 to 1000 organosiloxane units in the chain of the moiety or in the form of a graft, and
- at least two groups capable of establishing hydrogen interactions, chosen from among ester, amide, sulfonamide, carbamate, thiocarbamate, urea, thiourea, oxamido, guanidino, biguanidino groups, and combinations thereof, on condition that at least one group is other than an ester group,

the polymer being solid at room temperature and soluble in the liquid fatty phase at a temperature of 25 to 250° C,

- the liquid fatty phase consisting in whole or in part of volatile oil(s) having a flash point equal to or in excess of 40° C and b) of a film-forming silicone resin, in a cosmetic composition or for the manufacture of a physiologically acceptable composition, glossy and/or non-migrating and/or without transfer.

The invention also has as a purpose the use of a sufficient quantity of at least one polymer (homopolymer or copolymer) with a weight-average molecular mass ranging from 500 to 500,000, containing at least one moiety comprising:

- at least one polyorganosiloxane group, composed of 1 to 1000 organosiloxane units in the chain of the moiety or in the form of a graft, and
- at least two groups capable of establishing hydrogen interactions, chosen from among ester, amide,

sulfonamide, carbamate, thiocarbamate, urea, thiourea, oxamido, guanidino, biguanidino groups, and combinations thereof, on condition that at least one group is other than an ester group,

5 the polymer being solid at room temperature and soluble in the liquid fatty phase at a temperature of 25 to 250° C,

in a cosmetic composition or for the manufacture of a physiologically acceptable composition, containing a continuous liquid fatty phase comprising at least one
10 silicone oil and at least one film-forming silicone resin for structuring said composition in the form of a self-supporting solid.

The invention also relates to the use of the combination a) of a continuous liquid fatty phase, comprising at least one silicone oil, basically structured with a sufficient quantity of at least one polymer
5 (homopolymer or copolymer) with a weight-average molecular mass ranging from 500 to 500,000, containing at least one moiety comprising:

- at least one polyorganosiloxane group, composed of 1 to 1000 organosiloxane units in the chain of the moiety
10 or in the form of a graft, and
- at least two groups capable of establishing hydrogen interactions, chosen from among ester, amide, sulfonamide, carbamate, thiocarbamate, urea, thiourea, oxamido, guanidino, biguanidino groups, and
15 combinations thereof, on condition that at least one group is other than an ester group,

the polymer being solid at room temperature and soluble in the liquid fatty phase at a temperature of 25 to 250° C,

the liquid fatty phase consisting in whole or in
20 part of volatile oil(s) having a flash point equal to or in excess of 40° C, and b) of a film-forming silicone resin, in a cosmetic composition or for the manufacture of a physiologically acceptable composition, as an agent for limiting the migration of said composition and/or improving
25 the non-transfer of the composition.

The invention further concerns the use of the combination a) of a continuous liquid fatty phase comprising at least one silicone oil, basically structured with a sufficient quantity of at least one polymer (homopolymer or
5 copolymer) with a weight-average molecular mass ranging from 500 to 500,000, containing at least one moiety comprising:

- at least one polyorganosiloxane group, composed of 1 to 1000 organosiloxane units in the chain of the moiety or in the form of a graft, and
- 10 - at least two groups capable of establishing hydrogen interactions, chosen from among ester, amide, sulfonamide, carbamate, thiocarbamate, urea, thiourea, oxamido, guanidino, biguanidino groups, and combinations thereof, on condition that at least one
15 group is other than an ester group,

the polymer being solid at room temperature and soluble in the liquid fatty phase at a temperature of 25 to 250° C,

the liquid fatty phase consisting in whole or in part of volatile oil(s) and b) of a film-forming silicone
20 resin, in a cosmetic composition or for the manufacture of a physiologically acceptable composition, as an agent for improving the staying power of a deposit of said composition.

According to an advantageous characteristic of
25 these uses, the composition has a hardness from 20 to 2000 gf, preferably from 20 to 900 gf, and better from 20 to 600 gf.

The invention also concerns a cosmetic process for limiting the migration of a cosmetic composition

containing a liquid fatty phase comprising at least one silicone oil, consisting a) in structuring said fatty phase with a sufficient quantity of at least one polymer (homopolymer or copolymer) with a weight-average molecular mass ranging from 500 to 500,000, containing at least one moiety comprising:

- at least one polyorganosiloxane group, composed of 1 to 1000 organosiloxane units in the chain of the moiety or in the form of a graft, and
- at least two groups capable of establishing hydrogen interactions, chosen from among ester, amide, sulfonamide, carbamate, thiocarbamate, urea, thiourea, oxamido, guanidino, biguanidino groups, and combinations thereof, on condition that at least one group is other than an ester group,

the polymer being solid at room temperature and soluble in the liquid fatty phase at a temperature of 25 to 250° C,

the liquid fatty phase consisting in whole or in part of silicone oil(s).

- the liquid fatty phase consisting in whole or in part of silicone oil(s) and b) in adding at least one film-forming silicone resin.

The invention also relates to a cosmetic process for improving the staying power of a deposit of a cosmetic composition containing a liquid fatty phase comprising at least one silicone oil, consisting a) in structuring said fatty phase with a sufficient quantity of at least one polymer (homopolymer or copolymer) with a weight-average

molecular mass ranging from 500 to 500,000, containing at least one moiety comprising:

- at least one polyorganosiloxane group, composed of 1 to 1000 organosiloxane units in the chain of the moiety or in the form of a graft, and
- at least two groups capable of establishing hydrogen interactions, chosen from among ester, amide, sulfonamide, carbamate, thiocarbamate, urea, thiourea, oxamido, guanidino, biguanidino groups, and combinations thereof, on condition that at least one group is other than an ester group,

the polymer being solid at room temperature and soluble in the liquid fatty phase at a temperature of 25 to 250° C,

the liquid fatty phase consisting in whole or in part of silicone oil(s) and b) in adding at least one film-forming silicone resin.

Finally, the invention concerns a cosmetic process for reducing the transfer of a cosmetic composition containing a liquid fatty phase comprising at least one silicone oil, consisting a) in structuring said fatty phase with a sufficient quantity of at least one polymer (homopolymer or copolymer) with a weight-average molecular mass ranging from 500 to 500,000, containing at least one moiety comprising:

- at least one polyorganosiloxane group, composed of 1 to 1000 organosiloxane units in the chain of the moiety or in the form of a graft, and
- at least two groups capable of establishing hydrogen interactions, chosen from among ester, amide,

sulfonamide, carbamate, thiocarbamate, urea, thiourea, oxamido, guanidino, biguanidino groups, and combinations thereof, on condition that at least one group is other than an ester group,

5 the polymer being solid at room temperature and soluble in the liquid fatty phase at a temperature of 25 to 250° C,

the liquid fatty phase consisting in whole or in part of volatile silicone oil(s) and b) in adding at least one film-forming silicone resin to the composition.

10

Detailed presentation of the invention

The invention is illustrated in greater detail in the following example of formulation of makeup. The quantities are given as % by mass. The chemical compounds
15 are given mainly as the CTFA name ("International Cosmetic Ingredient Dictionary").

Example 1: Lip gloss

Code	Composition (nom CTFA)	%
Phase A	Dimethicone (20 cSt)	qsp 100
	Polyglyceryl-2 diisostearate	10.0
	Diisostearyl malate	6.3
	Phenyltrimethicone I (20 cSt)	10.0
	Phenyltrimethicone II (1000 cSt)	10.0
	Isononyl isononanoate	15.5
	Dimethicone and Trimethylsiloxysilicate (MQ resin)	10.0
Phase B	Polyamidodimethylsiloxane (DP 15)	16.0
Phase C	Pigments	1.2

This lip gloss is obtained by heating the
 5 silicone polyamide to its softening point, then adding the
 hydrocarbon oils, a portion of the non-volatile silicone
 oils and the silicone resin. Similarly, the pigments and
 the other portion of the non-volatile silicone oils are
 mixed at room temperature, and the whole is subjected to a
 10 three-cylinder grinder. The ground material obtained is
 added to the silicone polyamide mixture obtained, then the
 whole is homogenized. The mixture then is cast in an
 appropriate mold.

The product obtained in this manner has, in
 15 particular excellent staying-power properties due to the
 combination, according to the invention, of a film-forming
 silicone resin and a special silicone polymer.

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CLAIMS

1. Cosmetic composition for care and/or makeup, comprising:

- 5 1) a liquid fatty phase comprising at least one
silicone oil, structured with a gelling
system comprising at least one polymer
(homopolymer or copolymer) with a weight-
average molecular mass ranging from 500 to
500,000, containing at least one moiety
10 comprising:
- at least one polyorganosiloxane group,
composed of 1 to 1000 organosiloxane
units in the chain of the moiety or in
the form of a graft, and
 - 15 - at least two groups capable of
establishing hydrogen interactions,
chosen from among the ester, amide,
sulfonamide, carbamate, thiocarbamate,
urea, thiourea, oxamido, guanidino,
20 biguanidino groups, and combinations
thereof, on condition that at least one
of the groups is other than an ester
group,

the polymer being solid at room temperature and soluble in
25 the liquid fatty phase at a temperature of 25 to 250° C, and

2) at least one film-forming silicone resin, the
liquid fatty phase, the gelling system and the film-forming
silicone resin forming a physiologically acceptable medium.

2. Composition according to claim 1, in which the liquid fatty phase comprises at least one volatile silicone oil.

5 3. Composition according to claim 1, in which the liquid fatty phase comprises at least one volatile silicone oil and at least one volatile non-silicone oil.

4. Composition according to claim 2 or 3, in which the
10 volatile silicone oil has a flash point equal to or in excess of 40° C and advantageously in excess of the softening point of the gelling system.

5. Composition according to claim 2, in which the
15 fatty phase consists solely of volatile silicone oil(s) having a flash point equal to or in excess of 40° C and advantageously in excess of the softening point of the gelling system.

20 6. Composition according to any one of claims 2 to 5, in which the volatile silicone oil is chosen from within the group consisting of the following compounds:
octyltrimethicone, hexyltrimethicone, octamethyl
cyclotetrasiloxane D4, dodecamethyl cyclohexasiloxane D6,
25 heptamethyl octyltrisiloxane, decamethyl tetrasiloxane, dodecamethyl pentasiloxane, 1.5 cSt polydimethylsiloxane, 2 cSt polydimethylsiloxane, 3 cSt polymethylsiloxane [sic], 5 cSt polydimethylsiloxane, and mixtures thereof.

7. Composition according to any one of claims 2 to 6,
in which the volatile oil has a flash point of 40 to 135° C.

8. Composition according to any one of the preceding
5 claims, in which the liquid fatty phase also contains a non-
volatile silicone oil.

9. Composition according to any one of claims 2 to 8,
in which the liquid fatty phase contains at least 30% and
10 better still at least 40% by weight of silicone oil.

10. Composition according to any one of claims 2 to 9,
in which the volatile oil represents from 3 to 89.4%,
preferably from 5 to 60%, for example from 5 to 10% of the
15 total weight of the composition.

11. Composition according to any one of claims 1 to 10,
comprising in addition solid particles chosen from among the
fillers; pigments, nacreous or otherwise; and mixtures
20 thereof.

12. Composition according to claim 11, in which the
solid particles are hydrophobic particles.

25 13. Composition according to claim 12, in which the
solid particles are hydrophilic particles, coated in a film
of hydrophobic compound.

14. Composition according to claim 11, in which the solid particles are hydrophilic particles and the composition further comprises at least one amphiphilic silicone.

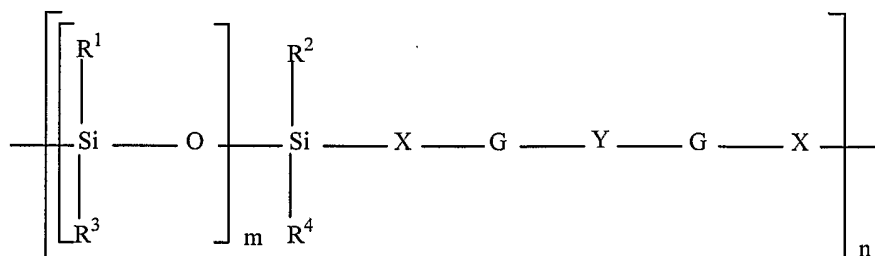
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15. Composition according to claim 12, in which the solid particles consist of powders or fibers of hydrophobic polymers or copolymers.

10

16. Composition according to one of claims 11 to 15, in which the particles are pigments chosen from among the zinc oxides, iron oxides, titanium oxides and mixtures thereof.

17. Composition according to any one of claims 1 to 16, in which the polymer used in the gelling system comprises at least one moiety corresponding to the formula:



(I)

in which:

20

1) R^1 , R^2 , R^3 and R^4 , identical or different, represent a group chosen from among:

- linear, branched or cyclic, saturated or unsaturated, C_1 to C_{40} hydrocarbon groups, which can contain in their chain one or more oxygen, sulfur and/or nitrogen atoms, and

25

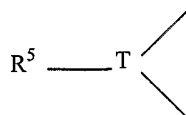
which can be partly or totally substituted with fluorine atoms,

- C₆ to C₁₀ aryl groups, possibly substituted with one or more C₁ to C₄ alkyl groups,
- polyorganosiloxane chains containing or not containing one or more oxygen, sulfur and/or nitrogen atoms;

2) the groups X, identical or different, represent a linear or branched C₁ to C₃₀ alkylenediyl group, which can contain in its chain one or more oxygen and/or nitrogen atoms;

3) Y is a saturated or unsaturated, C₁ to C₅₀ linear or branched divalent alkylene, arylene, cycloalkylene, alkylarylene or arylalkylene group, which can comprise one or more oxygen, sulfur and/or nitrogen atoms, and/or bear as substituent one of the following atoms or groups of atoms: fluorine, hydroxy, C₃ to C₈ cycloalkyl, C₁ to C₄₀ alkyl, C₅ to C₁₀ aryl, phenyl possibly substituted with 1 to 3 C₁ to C₃ alkyl groups, C₁ to C₃ hydroxyalkyl and C₁ to C₆ aminoalkyl, or

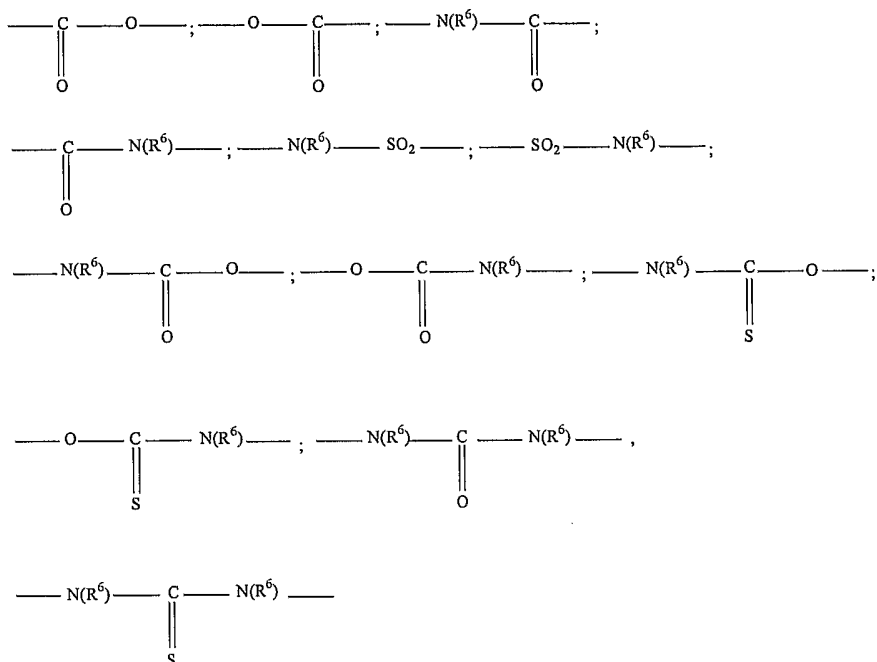
4) Y represents a group corresponding to the formula:



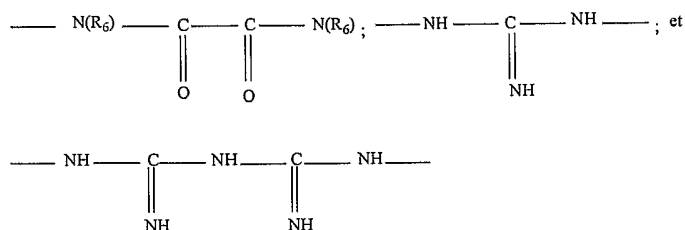
in which

- 5 - T represents a linear or branched, saturated or unsaturated, C₃ to C₂₄ trivalent or tetravalent hydrocarbon group, possibly substituted with a polyorganosiloxane chain, which can contain one or more atoms chosen from among O, N and S, or T represents a trivalent atom chosen from among N, P and Al, and
- 10 - R⁵ represents a linear or branched C₁ to C₅₀ alkyl group, or a polyorganosiloxane chain, which can comprise one or more ester, amide, urethane, thiocarbamate, urea, thiourea and/or sulfonamide groups which can be linked or not linked to another chain of the polymer,

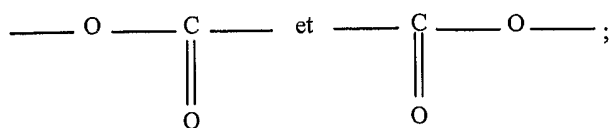
5) the groups G, identical or different, represent divalent groups chosen from among:



5



in which R^6 represents a hydrogen atom or a linear or branched C_1 to C_{20} alkyl group, on condition that at least 50% of the groups R^6 of the polymer represents a hydrogen atom and that at least two of the groups G of the polymer are a group other than:



6) n is an integer ranging from 2 to 500, preferably from 2 to 200, and m is an integer ranging from 1 to 1000, preferably from 1 to 700, and better still from 6 to 200.

5

18. Composition according to claim 17, in which Y represents a group chosen from among:

a) linear C₁ to C₂₀, preferably C₁ to C₁₀ alkylene groups,

10 b) C₃₀ to C₅₆ branched alkylene groups which can comprise rings and unconjugated unsaturations,

c) C₅-C₆ cycloalkylene groups,

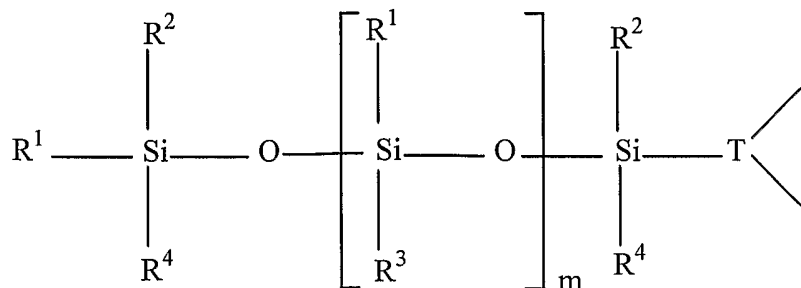
d) phenylene groups possibly substituted with one or more C₁ to C₄₀ alkyl groups,

15 e) C₁ to C₂₀ alkylene groups, comprising from 1 to 5 amide groups,

f) C₁ to C₂₀ alkylene groups comprising one or more substituents chosen from among the hydroxyl, C₃ to C₈ cycloalkane, C₁ to C₃ hydroxyalkyl and C₁ to C₆ alkylamine groups,

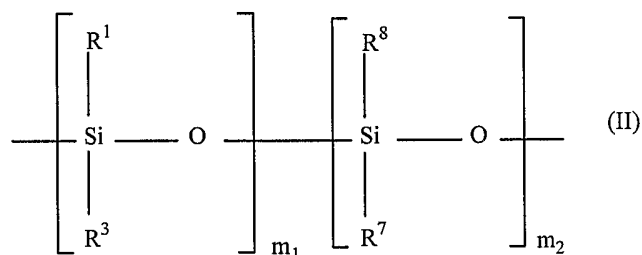
20

g) polyorganosiloxane chains of formula:



in which R^1 , R^2 , R^3 , R^4 , T and m are such as defined hereinabove.

19. Composition according to any one of claims 1 to 16,
5 in which the polymer used in the gelling system comprises at least one moiety corresponding to the formula (II):



in which

10 - R^1 and R^3 , identical or different, are such as defined hereinabove for formula (I) in claim 17,

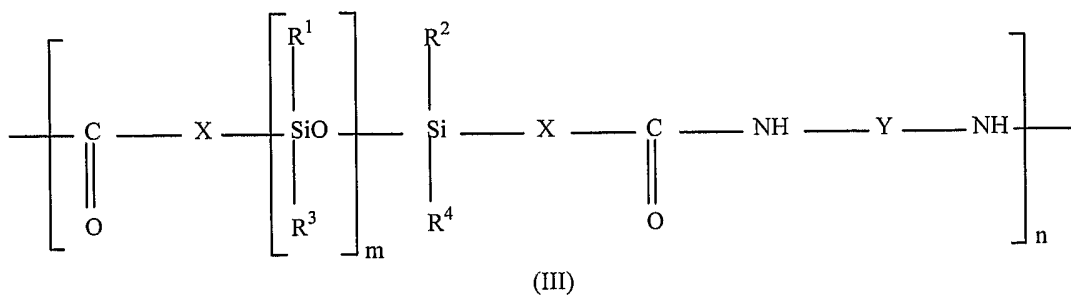
- R^7 represents a group such as defined hereinabove for R^1 and R^3 , or represents the group of formula $-X-G-R^9$ in which X and G are such as defined hereinabove for formula
15 (I) in claim 17, and R^9 represents a hydrogen atom or a linear, branched or cyclic, saturated or unsaturated, C_1 to C_{50} hydrocarbon group, possibly comprising in its chain one or more atoms chosen from among O, S and N, possibly substituted with one or more fluorine atoms and/or one or
20 more hydroxyl groups, or a phenyl group possibly substituted with one or more C_1 to C_4 alkyl groups,

- R^8 represents the group of formula $-X-G-R^9$ in which X, G and R^9 are such as defined hereinabove,

- m_1 is an integer ranging from 1 to 998, and

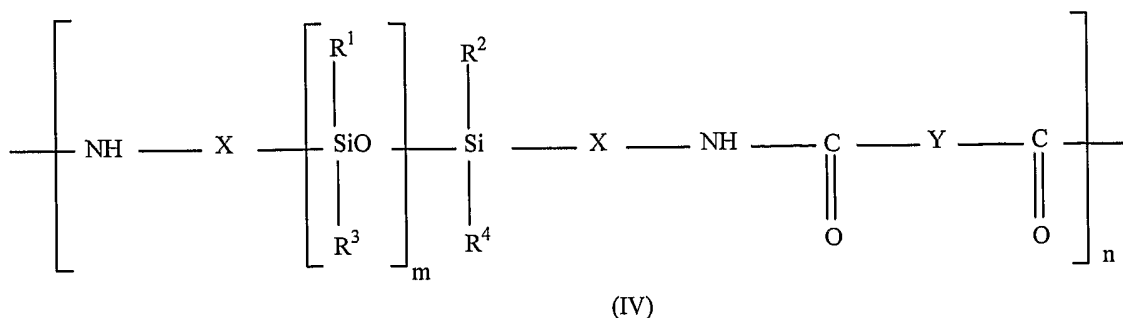
25 - m_2 is an integer ranging from 2 to 500.

20. Composition according to claim 17, in which the polymer comprises at least one moiety of formula (III) or IV):



5

or

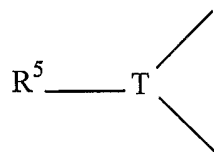


in which R^1 , R^2 , R^3 , R^4 , X , Y , m and n are such as defined in
 5 claim 14.

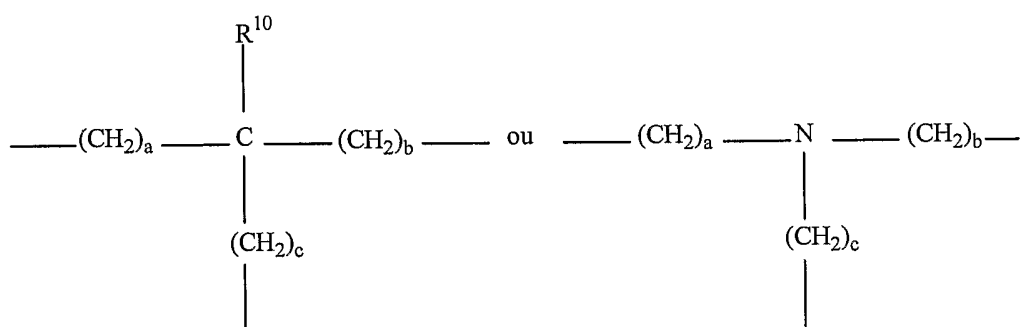
21. Composition according to any one of claims 17 and
 20, in which X and/or Y represent an alkylene group
 containing in its alkylene portion at least one of the
 10 following elements:

- 1) 1 to 5 amide, urea or carbamate groups.
- 2) a C_5 or C_6 cycloalkyl group, and
- 3) a phenylene group possibly substituted with 1 to 3,
 identical or different, C_1 to C_3 alkyl groups, and/or
 15 substituted with at least one element chosen from among the
 group consisting of:
 - a hydroxy group,
 - a C_3 to C_8 cycloalkyl group,
 - one to three C_1 to C_{40} alkyl groups,
 - 20 - a phenyl group possibly substituted with one to three
 C_1 to C_3 alkyl groups,
 - a C_1 to C_3 hydroxyalkyl group, and
 - a C_1 to C_6 aminoalkyl group.

22. Composition according to any one of claims 17 to
 25 20, in which Y represents:



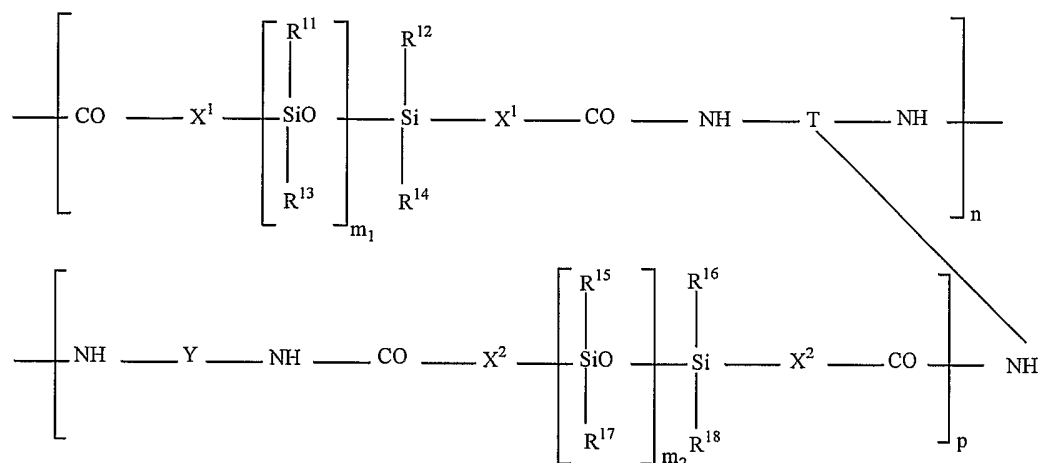
in which R^5 represents a polyorganosiloxane chain, and T
 5 represents a group of formula:



in which a, b and c are, independently, integers ranging
 10 from 1 to 10, and R^{10} is a hydrogen atom or a group such as
 those defined for R^1 , R^2 , R^3 and R^4 , in claim 17.

23. Composition according to any one of claims 17 to
 20, in which R^1 , R^2 , R^3 and R^4 represent, independently, a
 15 linear or branched, C_1 to C_{40} alkyl group, preferably a CH_3 ,
 C_2H_5 , n- C_3H_7 or isopropyl group, a polyorganosiloxane chain or
 a phenyl group possibly substituted with one to three methyl
 or ethyl groups.

24. Composition according to any one of claims 1 to 16, in which the polymer used in the gelling system comprises at least one moiety of formula:

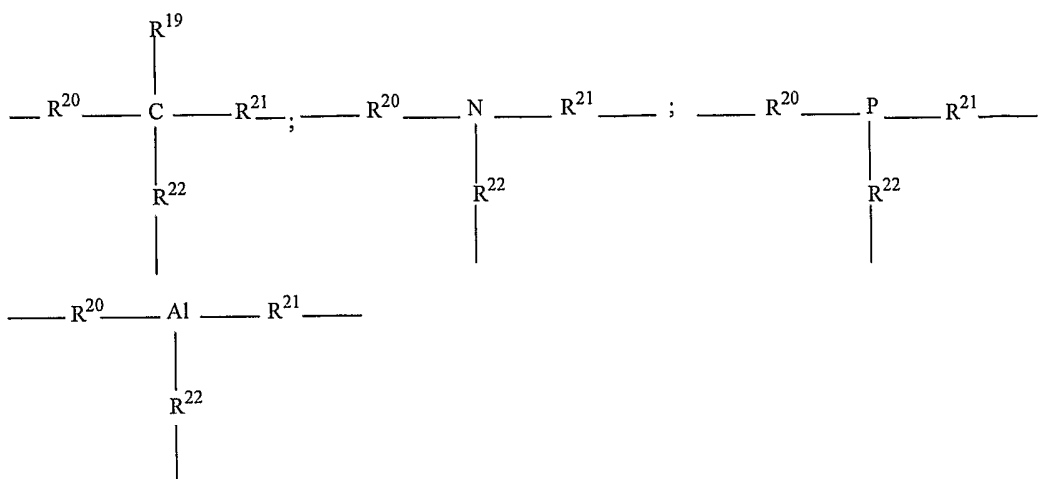


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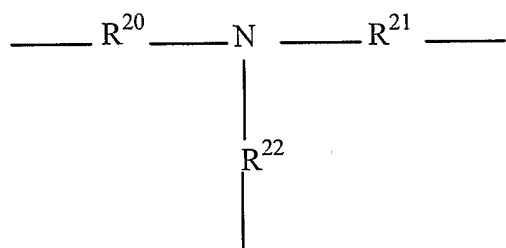
(VII)

in which X^1 and X^2 which are identical or different, have the meaning given for X in claim 17, n, Y and T are such as defined in claim 17, R^{11} to R^{18} are groups chosen from within the same group as R^1 to R^4 of claim 17, m_1 and m_2 are numbers falling in the range from 1 to 1000, and p is an integer ranging from 2 to 500.

25. Composition according to claim 24, in which:
- p is in the range from 1 to 25, better still from 1 to 7,
 - R^{11} to R^{18} are methyl groups,
 - T corresponds to one of the following formulas:

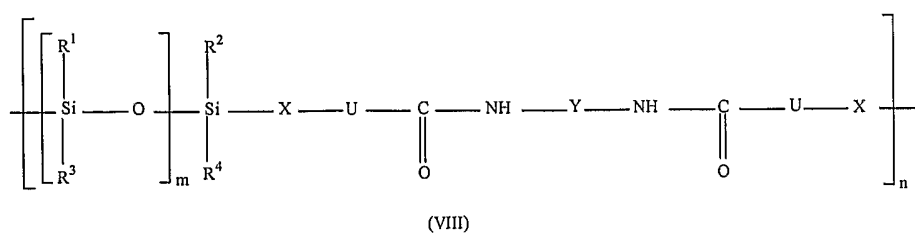


in which R^{19} is a hydrogen atom or a group chosen from among the groups defined for R^1 to R^4 , and R^{20} , R^{21} and R^{22} are,
 5 independently, linear or branched alkylene groups, and more preferably to the formula:



- 10 in particular with R^{20} , R^{21} and R^{22} representing $-\text{CH}_2-\text{CH}_2-$,
- m_1 and m_2 are in the range from 15 to 500, and better still from 15 to 45,
 - X^1 and X^2 represent $-(\text{CH}_2)_{10}-$, and
 - T represents $-\text{CH}_2-$.

15 26. Composition according to any one of claims 1 to 16, in which the polymer used in the gelling system comprises at least one moiety corresponding to the following formula:

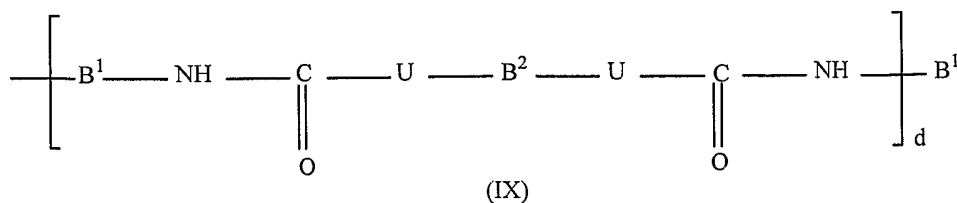


in which R^1 , R^2 , R^3 , R^4 , X , Y , m and n have the meanings given hereinabove for formula (I) in claim 17, and U represents -

5 O- or -NH- or

Y represents a C_5 to C_{12} cycloaliphatic or aromatic group which can be substituted with a C_1 to C_{15} alkyl group or a C_5 to C_{10} aryl group, for example a radical chosen from among the methylene-4-4-bicyclohexyl radical, the radical
 10 derived from isophorone diisocyanate, the 2,4- and 2,6-tolylenes, 1,5-naphthylene, p-phenylene and 4,4'-biphenylenemethane, or Y represents a linear or branched C_1 to C_{40} alkylene radical, or a C_4 to C_{12} cycloalkylene radical, or

15 Y represents a polyurethane or polyurea sequence corresponding to the condensation of several diisocyanate molecules with one or more molecules of coupling agents of the diol or diamine type, corresponding to the formula:



20

in which B¹ is a group chosen from among the groups given hereinabove for Y, U is -O- or -NH-, and B² is chosen from among:

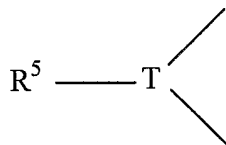
• linear or branched C₁ to C₄₀ alkylene groups, which
5 possibly can bear an ionizable group such as a carboxylic or sulfonic acid group, or a neutralizable or quaternizable tertiary amine group,

• C₅ to C₁₂ cycloalkylene groups, possibly bearing alkyl substituents, for example one to three methyl or ethyl
10 groups, or alkylene, for example the diol radical: cyclohexanedimethanol,

• phenylene groups which possibly can bear C₁ to C₃ alkyl substituents, and

• groups of formula:

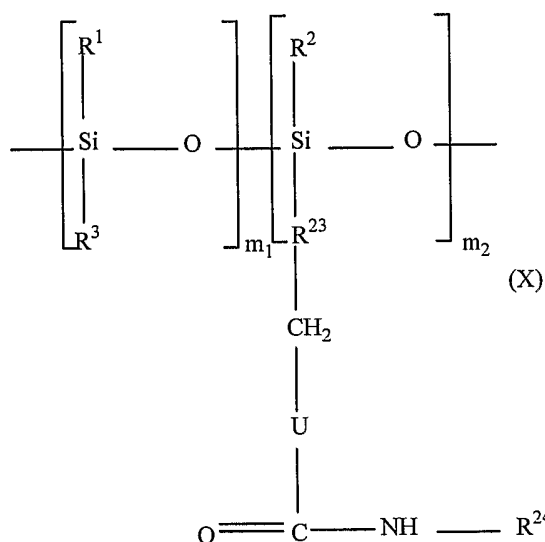
15



in which T is a trivalent hydrocarbon radical which can contain one or more hetero atoms such as oxygen, sulfur and nitrogen and R⁵ is a polyorganosiloxane chain or linear or branched C₁ to C₅₀ alkyl chain.

5

27. Composition according to any one of claims 1 to 16, in which the polymer used in the gelling system comprises at least one moiety of formula:



in which R^1 , R^2 , R^3 , m_1 and m_2 have the meanings given for formula (I) in claim 17,

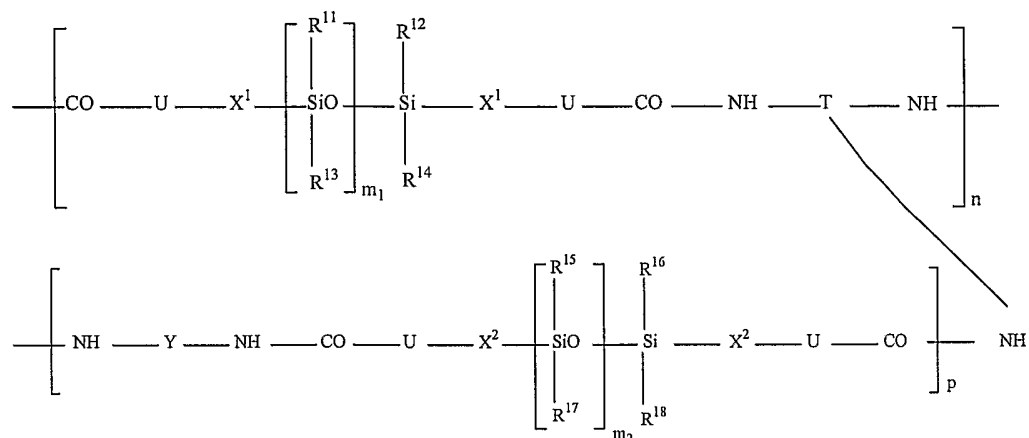
- U represents O or NH,

15 - R²³ represents a C₁ to C₄₀ alkylene group, possibly
comprising one or more hetero atoms chosen from among O and
N, or a phenylene group, and

- R^{24} is chosen from among the linear, branched or cyclic, saturated or unsaturated C_1 to C_{50} alkyl groups, and the phenyl groups possibly substituted with one to three C_1 to C_3 alkyl groups.

28. Composition according to any one of claims 1 to 16, in which the polymer used in the gelling system comprises at least one moiety of formula:

5



(XIII)

in which X^1 and X^2 which are identical or different, have the meaning given for X in claim 17, n, Y and T are such as defined in claim 17, R^{11} to R^{18} are groups chosen from within the same group as R^1 to R^4 of claim 17, m_1 and m_2 are numbers falling in the range from 1 to 1000, and p is an integer ranging from 2 to 500.

29. Composition according to any one of claims 17 to 28, in which the polymer used in the gelling system furthermore comprises a hydrocarbon moiety comprising two groups capable of establishing hydrogen interactions, chosen from among the ester, amide, sulfonamide, carbamate, thiocarbamate, urea, thiourea, oxamido, guanidino and biguanidino groups, or combinations thereof.

30. Composition according to claim 29, in which the copolymer is a block copolymer, a sequenced copolymer or a grafted copolymer.

5 31. Composition according to any one of the preceding claims, in which the polymer represents from 0.5 to 80% of the total weight of the composition, preferably from 2 to 60% and better from 5 to 40% of the total weight of the composition.

10

32. Composition according to any one of the preceding claims, in which the liquid fatty phase also contains a non-silicone oil.

15

33. Composition according to any one of the preceding claims, in which the liquid fatty phase represents from 5 to 99% of the total weight of the composition, and better from 20 to 75% of the total weight of the composition.

20

34. Composition according to any one of the preceding claims, in which said at least one film-forming silicone resin is chosen from among the silsesquioxanes, siloxysilicates, and silicone resins obtained by hydroxysililation.

25

35. Composition according to claim 34, in which said silsesquioxanes comprise repeating moieties of formula $(\text{RSiO}_{3/2})_x$, in which x is less than 2000.

36. Composition according to claim 35, in which x is less than or equal to 500.

37. Composition according to claim 34, in which said
5 silsesquioxanes are chosen from among the polymethylsilsesquioxanes comprising repeating moieties of formula $(\text{CH}_3\text{SiO}_{3/2})$.

38. Composition according to claim 34, in which said
10 siloxysilicates are chosen from among the trimethylsiloxysilicates.

39. Composition according to claim 38, in which said trimethylsiloxysilicates comprise repeating moieties of
15 formula $[(\text{CH}_3)_3\text{-Si-O}]_x\text{-(SiO}_{4/2})_y$, in which x ranges from 50 to 80 and y ranges from 50 to 80.

40. Composition according to claim 37, in which said polymethylsilsesquioxanes comprise repeating moieties of
20 formula $(\text{CH}_3\text{SiO}_{3/2})$ further comprising up to 1% of repeating polymerized moieties of formula $(\text{CH}_3)_2\text{SiO}_{2/2}$.

41. Composition according to any one of claims 1 to 40, in which said at least one film-forming silicone resin
25 comprises at least two moieties chosen from among M, D, T and Q and said at least two moieties satisfy the relationship
 $\text{RnSiO}_{(4-n)/2}$, in which n has a value ranging from 1.0 to 1.50.

42. Composition according to claim 41, in which said at least one film-forming silicone resin is a solid at 25° C.

5 43. Composition according to claim 41, in which said at least one film-forming silicone resin has a weight-average molecular mass ranging from 1000 to 10,000 gram/mole.

10 44. Composition according to any one of claims 1 to 43, in which said at least one film-forming silicone resin comprises repeating M moieties and repeating Q moieties.

15 45. Composition according to claim 44, in which the ratio of the M moieties to the Q moieties is 0.7:1.

20 46. Composition according to any one of claims 1 to 34, in which the film-forming silicone resin is resin obtained by hydroxysililation.

25 47. Composition according to claim 46, in which the resin obtained by hydroxysililation is chosen from among the resins able to be obtained from a silicone prepolymer of the polydialkylsiloxane type comprising hydrogenosiloxane moieties pendent or at the end of the chain, which have reacted with an organic compound comprising at least 2 unsaturations of the vinyl, allyl or methallyl type.

48. Composition according to claim 47, in which said organic compound is chosen from among a diene such as hexadiene, heptadiene, octadiene, a silicon chain comprising at least 2 vinyl or allyl groups pendent or end, or even a
5 polyalkylene, preferably hydrophilic (for example with a polyoxyethylene or polyoxyethylene-polypropylene group with 1 to 40 oxyethylene or oxypropylene moieties, comprising at least 2 double bonds pendent or at the end of the chain (and better at the end of the chain).

10

49. Composition according to claim 46, in which the resin obtained by hydroxysililation is chosen from among the resins able to be obtained by addition and crosslinking reaction, in the presence of a platinum catalyst, of at least:

a) an organopolysiloxane having at least two C_2 to C_6 lower alkenyl groups per molecule; and

b) an organopolysiloxane having at least two hydrogen atoms bonded to one silicon atom per molecule.

10

50. Composition according to claim 46, in which the resin obtained by hydroxysililation is chosen from among the organopolysiloxanes containing R_2SiO and $RSiO_{1.5}$ moieties and possibly $R_3SiO_{0.5}$ and/or SiO_2 moieties in which the R radicals, independently of each other, represent a hydrogen, an alkyl such as methyl, ethyl or propyl, an aryl such as phenyl or tolyl, an unsaturated aliphatic group such as vinyl, the ratio by weight of the R_2SiO moieties over the $RSiO_{1.5}$ moieties ranging from 1/1 to 30/1.

15

51. Composition according to claim 46, in which the resin obtained by hydroxysililation is chosen from among the organopolysiloxanes insoluble and expansible in silicone oil, able to be obtained by addition of an organohydrogenopolysiloxane (1) and an organopolysiloxane (2) having unsaturated aliphatic groups such that the quantity of hydrogen or of unsaturated aliphatic groups in (1) and (2) ranges between 1 and 20% mol when the organopolysiloxane is

20

noncyclic and between 1 and 50% mol when the organopolysiloxane is cyclic.

52. Composition according to any one of claims 50 and 51, in which the These organopolysiloxanes possibly can comprise from 1 to 40 oxyalkylene and more especially oxypropylene and/or oxyethylene groups, and in particular from 1 to 20 oxyalkylene groups, all or a portion of these groups preferably being oxyethylene [sic].

10

53. Composition according to any one of the preceding claims in which the film-forming silicone resin is crosslinked.

54. Composition according to any one of the preceding claims, in which the film-forming silicone resin further comprises a hydrophilic group or groups or grafts, in particular of the polyoxyalkylene type, such as POE, PPO or POE/PPO.

20

55. Composition according to any one of claims 1 to 54, in which said at least one film-forming silicone resin is present in the composition in a quantity ranging from 0.5 to 20%, preferably from 1% to 10% by weight, with respect to the total weight of the composition.

25

56. Composition according to any one of the preceding claims, in which the silicone polymer/film-forming silicone resin mass ratio lies in the range from 20 to 0.15 and better from 15 to 1.5.

5

57. Composition according to any one of the preceding claims, characterized in that it further comprises at least one cosmetic or dermatological active substance.

10

58. Composition according to claim 57, characterized in that the active substance is chosen from among the essential oils, vitamins, moisturizers, filters, healing agents and ceramides.

15

59. Composition according to any one of the preceding claims, characterized in that it comprises at least one additive chosen from among the dyes soluble in polyols or in the fatty phase, antioxidants, preservatives, fragrances, liposoluble polymers, in particular hydrocarbons such as the polyalkylenes or vinyl poly Laurate, the gelling agents of the liquid fatty phase, gums, resins, surfactants such as tri-oleyl phosphate, additional cosmetic or dermatological active substances chosen, for example, from within the group

20

consisting of water, emollients, moisturizers, vitamins, liquid lanolin, essential fatty acids, sunscreens which are lipophilic or soluble in polyols, lipid vesicles, and mixtures thereof.

5

60. Composition according to any one of the preceding claims, characterized in that it further comprises a coloring agent.

10

61. Composition according to any one of the preceding claims, characterized in that it exists in the form of a rigid gel, and in particular an anhydrous stick.

15

62. Structured solid composition for making-up of the skin, the lips and/or phaneric structures containing at least one pigment in sufficient quantity for making up the skin, lips and/or phaneric structures, and a continuous liquid fatty phase comprising at least one silicone oil, structured with at least one polymer (homopolymer or copolymer) with a weight-average molecular mass ranging from 500 to 500,000, containing at least one moiety comprising:

20

- at least one polyorganosiloxane group, composed of 1 to 1000 organosiloxane units in the chain of the moiety or in the form of a graft, and

25

- at least two groups capable of establishing hydrogen interactions chosen from among ester, amide, sulfonamide, carbamate, thiocarbamate, urea, thiourea, oxamido,

guanidino, biguanidino groups, and combinations thereof, on condition that at least one group is other than an ester group,
the polymer being solid at room temperature and soluble in
5 the liquid fatty phase at a temperature of 25 to 250°C,
the liquid fatty phase consisting in whole or in part of silicone oil(s),
said composition containing a film-forming silicone resin and existing in the form of a solid, and the pigment, the
10 liquid fatty phase, the film-forming silicone resin and the polymer forming a physiologically acceptable medium.

63. Composition according to claim 62, characterized in that it is self-supporting.

15

64. Structured composition for lipstick, containing at least one pigment in sufficient quantity for making up the lips, and a continuous liquid fatty phase comprising at least one silicone oil, structured with at least one polymer
20 (homopolymer or copolymer) with a weight-average molecular mass ranging from 500 to 500,000, containing at least one moiety comprising:

- at least one polyorganosiloxane group, composed of 1 to 1000 organosiloxane units in the chain of the moiety
25 or in the form of a graft, and
- at least two groups capable of establishing hydrogen interactions, chosen from among ester, amide, sulfonamide, carbamate, thiocarbamate, urea, thiourea, oxamido, guanidino, biguanidino groups, and

combinations thereof, on condition that at least one group is other than an ester group, the polymer being solid at room temperature and soluble in the liquid fatty phase at a temperature of 25 to 250° C, the liquid fatty phase consisting in whole or in part of silicone oil(s), said composition containing a film-forming silicone resin and existing in the form of a solid, and the pigment, the liquid fatty phase, the polymer and the film-forming silicone resin forming a physiologically acceptable medium.

65. Composition according to any one of claims 1 to 64, characterized in that it exists in the form of a cake mascara, an eyeliner, a foundation, a lipstick, a blusher, a makeup-removal product, a makeup product for the body, an eye shadow or face powder, a concealer.

66. Makeup stick for the skin, lips and/or phaneric structures, and in particular the lips, containing at least one pigment in sufficient quantity for making up the skin, lips

and/or phaneric structures, and a continuous liquid fatty phase comprising at least one silicone oil, structured with at least one polymer (homopolymer or copolymer) with a weight-average molecular mass ranging from 500 to 500,000, containing at least one moiety comprising:

- at least one polyorganosiloxane group, composed of 1 to 1000 organosiloxane units in the chain of the moiety or in the form of a graft, and
- at least two groups capable of establishing hydrogen interactions, chosen from among ester, amide, sulfonamide, carbamate, thiocarbamate, urea, thiourea, oxamido, guanidino, biguanidino groups, and combinations thereof, on condition that at least one group is other than an ester group,

the polymer being solid at room temperature and soluble in the liquid fatty phase at a temperature of 25 to 250° C, the liquid fatty phase consisting in whole or in part of silicone oil(s), the composition further containing a film-forming silicone resin, the pigment, the fatty phase, the polymer and the film-forming silicone resin forming a physiologically acceptable medium.

67. Cosmetic process for care, makeup or treatment of keratinous matter in humans, consisting in the application to

the keratinous matter of a cosmetic composition according to one of the preceding claims.

68. Use of a sufficient quantity of at least one
5 polymer (homopolymer or copolymer) with a weight-average molecular mass ranging from 500 to 500,000, containing at least one moiety comprising:

- at least one polyorganosiloxane group, composed of 1 to 1000 organosiloxane units in the chain of the moiety
10 or in the form of a graft, and
- at least two groups capable of establishing hydrogen interactions, chosen from among ester, amide, sulfonamide, carbamate, thiocarbamate, urea, thiourea, oxamido, guanidino, biguanidino groups, and
15 combinations thereof, on condition that at least one group is other than an ester group,

the polymer being solid at room temperature and soluble in the liquid fatty phase at a temperature of 25 to 250° C, in a cosmetic composition or for the manufacture of a
20 physiologically acceptable composition, containing a) a continuous liquid fatty phase comprising at least one silicone oil, the liquid fatty phase consisting in whole or in part of silicone oil(s) having a flash point equal to or in excess of 40° C and b) of a film-forming silicone resin
25 for structuring said composition in the form of a self-supporting solid with a hardness ranging from 20 to 2000 gf and preferably from 20 to 900 gf and better from 20 to 600 gf.

69. Use of the combination a) of a continuous liquid fatty phase comprising at least one silicone oil, basically structured with a sufficient quantity of at least one polymer (homopolymer or copolymer) with a weight-average
5 molecular mass ranging from 500 to 500,000, containing at least one moiety comprising:

- at least one polyorganosiloxane group, composed of 1 to 1000 organosiloxane units in the chain of the moiety or in the form of a graft, and
- 10 - at least two groups capable of establishing hydrogen interactions, chosen from among ester, amide, sulfonamide, carbamate, thiocarbamate, urea, thiourea, oxamido, guanidino, biguanidino groups, and combinations thereof, on condition that at least one
15 group is other than an ester group,

the polymer being solid at room temperature and soluble in the liquid fatty phase at a temperature of 25 to 250° C, the liquid fatty phase consisting in whole or in part of volatile oil(s) having a flash point equal to or in excess
20 of 40° C and b) of a film-forming silicone resin, in a cosmetic composition or for the manufacture of a physiologically acceptable composition, glossy and/or non-migrating and/or without transfer.

25 70. Use of a sufficient quantity of at least one polymer (homopolymer or copolymer) with a weight-average molecular mass ranging from 500 to 500,000, containing at least one moiety comprising:

- at least one polyorganosiloxane group, composed of 1 to 1000 organosiloxane units in the chain of the moiety or in the form of a graft, and
- at least two groups capable of establishing hydrogen interactions, chosen from among ester, amide, sulfonamide, carbamate, thiocarbamate, urea, thiourea, oxamido, guanidino, biguanidino groups, and combinations thereof, on condition that at least one group is other than an ester group,

the polymer being solid at room temperature and soluble in the liquid fatty phase at a temperature of 25 to 250° C, in a cosmetic composition or for the manufacture of a physiologically acceptable composition, containing a continuous liquid fatty phase comprising at least one silicone oil and at least one film-forming silicone resin for structuring said composition in the form of a self-supporting solid.

71. Use of the combination a) of a continuous liquid fatty phase, comprising at least one silicone oil, basically structured with a sufficient quantity of at least one polymer (homopolymer or copolymer) with a weight-average molecular mass ranging from 500 to 500,000, containing at least one moiety comprising:

- at least one polyorganosiloxane group, composed of 1 to 1000 organosiloxane units in a chain of the moiety or in the form of a graft, and

- at least two groups capable of establishing hydrogen interactions, chosen from among ester, amide, sulfonamide, carbamate, thiocarbamate, urea, thiourea, oxamido, guanidino, biguanidino groups, and combinations thereof, on condition that at least one group is other than an ester group,

the polymer being solid at room temperature and soluble in the liquid fatty phase at a temperature of 25 to 250° C, the liquid fatty phase consisting in whole or in part of volatile oil(s) having a flash point equal to or in excess of 40° C, and b) of a film-forming silicone resin, in a cosmetic composition or for the manufacture of a physiologically acceptable composition, as an agent for limiting the migration of said composition and/or improving the non-transfer of the composition.

72. Use of the combination a) of a continuous liquid fatty phase comprising at least one silicone oil, basically structured with a sufficient quantity of at least one polymer (homopolymer or copolymer) with a weight-average molecular mass ranging from 500 to 500,000, containing at least one moiety comprising:

- at least one polyorganosiloxane group, composed of 1 to 1000 organosiloxane units in a chain of the moiety or in the form of a graft, and
- at least two groups capable of establishing hydrogen interactions, chosen from among ester, amide, sulfonamide, carbamate, thiocarbamate,

urea, thiourea, oxamido, guanidino, biguanidino groups, and combinations thereof, on condition that at least one group is other than an ester group,

5 the polymer being solid at room temperature and soluble in the liquid fatty phase at a temperature of 25 to 250° C, the liquid fatty phase consisting in whole or in part of volatile oil(s) and b) of a film-forming silicone resin, in a cosmetic composition or for the manufacture of a
10 physiologically acceptable composition, as an agent for improving the staying power of a deposit of said composition.

73. Use according to any one of claims 68 to 72,
15 in which the composition has a hardness from 20 to 2000 gf, preferably from 20 to 900 gf, and better from 20 to 600 gf.

74. Cosmetic process for limiting the migration of a cosmetic composition containing a liquid fatty phase comprising at least one silicone oil, consisting a) in structuring said fatty phase with a sufficient quantity of
5 at least one polymer (homopolymer or copolymer) with a weight-average molecular mass ranging from 500 to 500,000, containing at least one moiety comprising:

- at least one polyorganosiloxane group, composed of 1 to 1000 organosiloxane units in the chain of
10 the moiety or in the form of a graft, and
- at least two groups capable of establishing hydrogen interactions, chosen from among ester, amide, sulfonamide, carbamate, thiocarbamate, urea, thiourea, oxamido, guanidino, biguanidino
15 groups, and combinations thereof, on condition that at least one group is other than an ester group,

the polymer being solid at room temperature and soluble in the liquid fatty phase at a temperature of 25 to 250° C,

20 the liquid fatty phase consisting in whole or in part of silicone oil(s) and b) in adding at least one film-forming silicone resin.

75. Cosmetic process for improving the staying
25 power of a deposit of a cosmetic composition containing a liquid fatty phase comprising at least one silicone oil, consisting a) in structuring said fatty phase with a sufficient quantity of at least one polymer (homopolymer or

copolymer) with a weight-average molecular mass ranging from 500 to 500,000, containing at least one moiety comprising:

- at least one polyorganosiloxane group, composed of 1 to 1000 organosiloxane units in the chain of the moiety or in the form of a graft, and
- at least two groups capable of establishing hydrogen interactions, chosen from among ester, amide, sulfonamide, carbamate, thiocarbamate, urea, thiourea, oxamido, guanidino, biguanidino groups, and combinations thereof, on condition that at least one group is other than an ester group,

the polymer being solid at room temperature and soluble in the liquid fatty phase at a temperature of 25 to 250° C,

- the liquid fatty phase consisting in whole or in part of silicone oil(s) and containing at least one film-forming silicone resin.

76. Cosmetic process for reducing the transfer of a cosmetic composition containing a liquid fatty phase comprising at least one silicone oil, consisting a) in structuring said fatty phase with a sufficient quantity of at least one polymer (homopolymer or copolymer) with a weight-average molecular mass ranging from 500 to 500,000, containing at least one moiety comprising:

- at least one polyorganosiloxane group, composed of 1 to 1000 organosiloxane units in the chain of the moiety or in the form of a graft, and

- at least two groups capable of establishing hydrogen interactions, chosen from among ester, amide, sulfonamide, carbamate, thiocarbamate, urea, thiourea, oxamido, guanidino, biguanidino groups, and combinations thereof, on condition that at least one group is other than an ester group,

the polymer being solid at room temperature and soluble in the liquid fatty phase at a temperature of 25 to 250° C,

the liquid fatty phase consisting in whole or in part of volatile silicone oil(s) and b) in adding at least one film-forming silicone resin to the composition.

INTERNATIONAL SEARCH REPORT

International application No.

PCT/US03/16209

A. CLASSIFICATION OF SUBJECT MATTER

IPC(7) : A61K 9/00, 7/42, 7/021, 7/025, 31/74

US CL : 424/400, 401, 59, 63, 64, 78.02, 78.03, 78.08; 514/844

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)

U.S. : 424/400, 401, 59, 63, 64, 78.02, 78.03, 78.08; 514/844

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched
HACHK'S CHEMICAL DICTIONARYElectronic data base consulted during the international search (name of data base and, where practicable, search terms used)
Please See Continuation Sheet**C. DOCUMENTS CONSIDERED TO BE RELEVANT**

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 5,919,441 A (MENDOLIA et al) 6 July 1999 (06.07.1999), column 6, lines 37-55, column 14, lines 57-61, column 18-20-25, and columns 19-20.	1, 3, 62--64, 66-76
Y	US 6,060,072 A (KONIK et al) 9 May 2000 (09.05.2000), column 3, lines 4-14 and column 2, lines 1-15	4-5



Further documents are listed in the continuation of Box C.



See patent family annex.

* Special categories of cited documents:		"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
"A"	document defining the general state of the art which is not considered to be of particular relevance	"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
"E"	earlier application or patent published on or after the international filing date	"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
"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)	"&"	document member of the same patent family
"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		

Date of the actual completion of the international search

21 August 2003 (21.08.2003)

Date of mailing of the international search report

29 OCT 2003

Name and mailing address of the ISA/US

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INTERNATIONAL SEARCH REPORT

International application No.

PCT/US03/16209

Box I Observations where certain claims were found unsearchable (Continuation of Item 1 of first sheet)

This international report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☐ Claim Nos.:
because they relate to subject matter not required to be searched by this Authority, namely:
2. ☐ Claim Nos.:
because they relate to parts of the international application that do not comply with the prescribed requirements to such an extent that no meaningful international search can be carried out, specifically:
3. ☒ Claim Nos.: 6-61, 65
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

Box II Observations where unity of invention is lacking (Continuation of Item 2 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

1. ☐ As all required additional search fees were timely paid by the applicant, this international search report covers all searchable claims.
2. ☐ As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.
3. ☐ As only some of the required additional search fees were timely paid by the applicant, this international search report covers only those claims for which fees were paid, specifically claims Nos.:
4. ☐ No required additional search fees were timely paid by the applicant. Consequently, this international search report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

Remark on Protest

☐
☐

The additional search fees were accompanied by the applicant's protest.

No protest accompanied the payment of additional search fees.

INTERNATIONAL SEARCH REPORT

PCT/US03/16209

Continuation of Item 4 of the first sheet:

The text contains too many words. The new text is: Cosmetic Composition Structured With Silicone Polymers and Film-Forming Resin.

Continuation of B. FIELDS SEARCHED Item 3:

WEST, MEDLINE, STN

search terms: polyorganosiloxane, silicone resin, film-forming, cosmetics