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COLGATE - PALMOLIVE COMPANY

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NEW YORK , NEW YORK , ESTADOS UNIDOS DE AMERICA

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22. SANTAFE DE BOGOTA, D.C.

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☒ Capítulo II.

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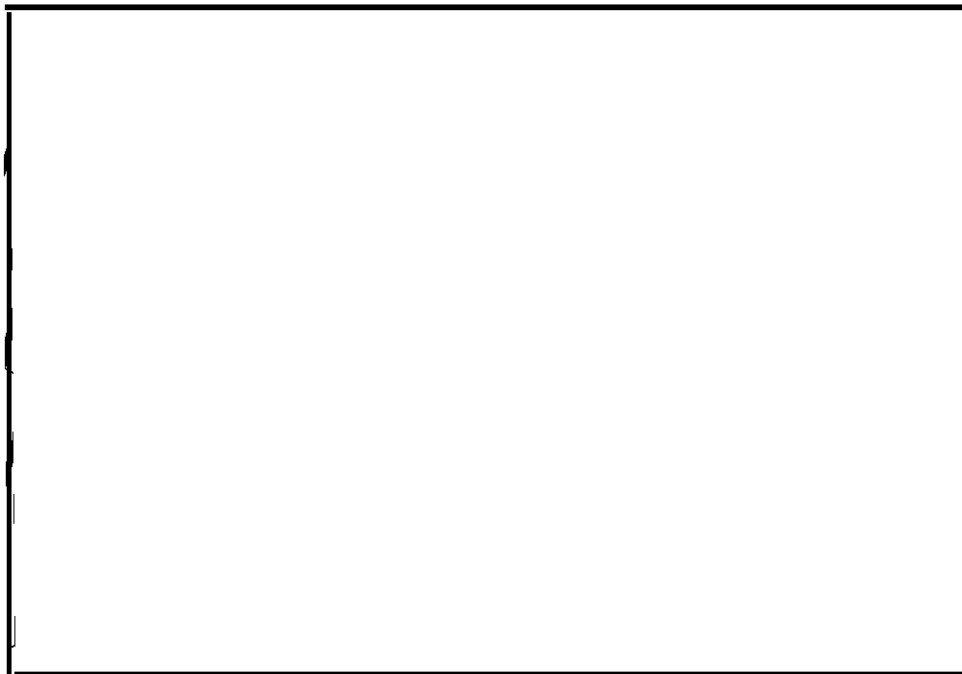
Instrucciones para el diligenciamiento del presente formulario, ver reverso de esta página.

10

ANEXOS

- ☒ Comprobante de pago de la tasa de presentación de la solicitud. \$443.000
- ☒ Documento que acredita la existencia y representación legal cuando el solicitante sea persona jurídica
- ☒ Poderes, si fuere el caso. Fotocopia Autenticada
- ☐ Documento de cesión del inventor al solicitante o a su causante.
- ☐ Declaraciones
- ☒ Copia de la solicitud internacional. (Resumen, descripción, reivindicaciones, dibujos)
- ☒ Traducción de la solicitud internacional al castellano. (Resumen, descripción, reivindicaciones, dibujos)
- ☒ Copia del examen preliminar efectuado por la IPEA.
- ☒ Traducción del examen preliminar efectuado por la IPEA
- ☐ De ser el caso, copia del contrato de acceso.
- ☐ De ser el caso, documento que acredite la licencia o autorización de uso de conocimientos tradicionales de las comunidades indígenas
- ☐ De ser el caso, certificado de depósito del material biológico.
- ☐ Arte final 12x12.
- ☐ De ser el caso, información sobre otras solicitudes de patente o títulos obtenidos en el extranjero por el mismo titular o su causante, relacionadas parcial o totalmente con la invención de esta solicitud.
- ☒ Otros: Tarjeta de Propietarios

11 FIGURA CARACTERÍSTICA:



12 Solicito la concesión de la patente.

NOMBRE: JUAN PABLO CADENA SARMIENTO

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Declarations under Rule 4.17:

- as to applicant's entitlement to apply for and be granted a
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- as to the applicant's entitlement to claim the priority of the
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ance Notes on Codes and Abbreviations" appearing at the begin-
ning of each regular issue of the PCT Gazette.

(54) Title: TWO-PHASE ROLL-ON COSMETIC PRODUCT

(57) Abstract: A two-phase, elastomer-free, low viscosity, high water roll-on antiperspirant and/or deodorant composition comprising: (A) a non-polar phase having a viscosity up to 300 centipoise and comprising: (a) 0.1-40 weight % of a volatile and/or a nonvolatile silicone selected from the group consisting of linear and cyclic organo-substituted polysiloxanes wherein the viscosity is less than 5 centistokes for volatile silicones and in the range of 5-30 centistokes for non-volatile silicones; (b) 0-25 weight % of a straight or branched chain hydrocarbon polymer which has an average molecular weight in the range of 450-6000 daltons; (c) 0-15 weight % of one or more of a selected low viscosity, lipophilic emollient; and (B) a polar phase having a viscosity in the range of 10-2,000 centipoise and comprising: (a) at least 5 weight % of an antiperspirant active; (b) an aqueous component comprising at least 40% water and a sufficient amount of a C2-3 alcohol, a glycol or a polyhydric alcohol so that the antiperspirant active is dissolved in the aqueous component; and (c) a selected thickening agent; wherein the ratio of oil phase to water phase is in the range of 15:85-40:60; and whereby the composition is able to form a temporarily stabilized emulsion after shaking for a period not exceeding 24 hours.

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Two-Phase Roll-on Cosmetic Product

Field of the Invention

This invention relates to a two-phase, elastomer-free, low viscosity, high water
5 roll-on cosmetic product, especially for use in the field of antiperspirants and/or
deodorants.

Background of the Invention

Current roll-on products in the market frequently involve emulsions and/or the
suspension of an antiperspirant active in the formulation. The products frequently
10 require the use of one or more surfactants to stabilize and/or compatibilize two non-
compatible phases. There are two issues associated with the use of surfactants. The
first issue is skin irritation. Unless the surfactant system is carefully selected, the use of
such materials may cause skin irritation. The second issue is efficacy. It may be the
case that in some systems, the use of a surfactant may interfere with the gel plug
15 formation by which many antiperspirant actives work to reduce perspiration.

Another group of benefits may also be achieved with the reduction and/or
elimination of surfactants in cosmetic products that contain an antiperspirant active.
These benefits include improving the dry feel of the product, reducing the amount of
non-white residue on skin and clothing, and reducing the tackiness of the product.

20 Two-phase systems have been seen in a few cosmetic applications including
liquids and solids. One commercial liquid two-phase product from The Dial
Corporation (Scottsdale, AZ) is Nature's Accents® Bath Treats, a bubble bath product
comprising water, cetearyl ethylhexanoate, sodium laureth sulfate, cocamidopropyl
betaine, fragrance, glycerin, sodium cocoyl glutamate (and) disodium cocoyl glutamate,
25 PEG-8, DMDM hydantoin, tetrasodium EDTA, hydrolyzed milk protein, honey extract,
and coloring agents. As a cleansing material this product is formulated with
surfactants. This product has a creamy milky top layer with a clear colored layer under
it.

A second commercial liquid two-phase product is Cloud Dance™ breeze
30 cologne spray distributed by CCA Industries, Inc. (East Rutherford, NJ). This product
lists the following ingredients: SD alcohol, 40D, hexamethyldisiloxane, fragrance,
distilled water, sodium chloride, coloring agents, and benzophenone-3. This product is
clear with two bands of differing colors.

There are patent references that describe two-phase or multiphase technology.
35 U.S. Patent 4,120,948 to Shelton describes a two-phase stick antiperspirant having (1) a

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substantially anhydrous antiperspirant phase comprising a water-insoluble, high melting point wax, a liquid emollient, and high levels of a particulate, antiperspirant active material and (2) a gel phase comprising a polyhydric alcohol gelled with either a fatty acid soap or a fatty acid amide.

5 U.S. Patent 4,438,095 to Grollier et al describes a liquid cosmetic composition comprising two separate liquid phases. The first phase is an aqueous phase in which at least one cationic polymer is dissolved. The composition contains no detergent agent or foaming agents.

10 U.S. Patent 4,767,741 to Komor et al teaches a two-phase liquid cosmetic composition comprising an oil phase, and organic liquid/water phase and insoluble solid particles absorbed on the interface between the two phases, wherein the solid particles are the in situ precipitation product of at least a first salt solution and a second salt solution (added to the oil phase and organic/water phase during blending thereof).

15 U.S. Patent 4,973,473 to Schneider et al teaches (in a preferred embodiment) a composition comprising two discrete gel phases. The composition includes an emollient complex containing a selected carboxylic acid amide(s), a mucopolysaccharide, at least one skin structuring protein and an astringent.

20 U.S. Patent 4,980,155 to Shah et al teaches a two-phase cosmetic composition comprising a color phase which includes a first phase comprising a film forming agent, at least one colorant, an emulsifier and water; and a second phase comprising a gel phase comprising a water soluble polymer and water. The phases are miscible with each other but are disposed in discrete side by side separate phases.

25 U.S. Patent 5,213,799 to Foring et al describes skin-treating compositions which comprise a transparent oil phase and a transparent aqueous phase, preferably with humectant effect, which permits a homogenous mixture when shaken together and thereafter separates again into two transparent phases. The cosmetic composition includes the use of 0.1-1.0 weight % of C12-C18 fatty acid triglycerol ester.

30 U.S. Patent 5,290,555 to Guthauser et al teaches compositions with structural color in which two phases are selected with the same refractive index but different dispersive power. Either or both of the phases may contain cosmetically active ingredients.

35 U.S. Patent 5,474,777 to Marion et al describes liquid cleansing compositions consisting of an oily phase and an aqueous phase, wherein the oily phase consists of at least one dialkylphosphate and, optionally, products miscible therein, and the aqueous phase contains one or more ionic surfactants.

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U.S. Patent 5,593,663 to Leng et al describes antiperspirant actives which are amphiphilic materials that, upon contact with perspiration, form a water-insoluble liquid crystal phase of greater than one-dimensional periodicity.

5 U.S. Patent 5,654,362 to Schultz et al describes silicone oils and solvents thickened by silicone elastomers and suitable for use in products such as antiperspirants and deodorants.

U.S. Patent 5,919,437 to Lee et al describes solid cosmetic compositions including cosmetic cream compositions containing silicone elastomers as gelling agents.

10 U.S. Phase 6,019,991 to Tanaka et al teaches a two-phase cosmetic composition comprising separate and distinct oil and aqueous phases which form a highly temporary clear emulsion when shaken together. A clear package is used. One phase may be colored while the other is usually water white.

15 U.S. Patent 6,180,587 to Fuller et al teaches a multiple phase composition comprising a lower aqueous phase comprising at least 1 weight % of a polymer or copolymer selected from the group consisting of polyacrylate, polystyrene sulfonate, polyvinyl-pyrrolidone, maleic anhydride and mixtures thereof and an upper aqueous phase having a cleansingly effective amount of a surfactant.

20 PCT case WO 00/67712 discloses a solid stick containing antiperspirant actives and formed with a core phase and an outer phase.

Conventional roll-on products used as antiperspirants and/or deodorants are usually emulsions or anhydrous suspensions. Emulsions can be oil-in-water or water-in-oil systems wherein one phase is dispersed in the other. In emulsions both phases remain together because of the addition of surfactants. Emulsion products tend to have
25 a wet feel, a higher level of tackiness and some irritation issues. Anhydrous suspensions are composed of powders suspended in anhydrous liquids. They typically include a relatively high percentage of suspending agents that contribute to white residues being left on skin and clothing. While the anhydrous suspension do not produce a wet feel, they exhibit other problems such as settling of the powder over time and leakage of the
30 carrier liquid, especially if the product is not continuously shaken.

The present invention reduces and/or eliminates some of the aforementioned problems. In particular, the compositions of the present invention are able to provide two phase antiperspirants and/or deodorants which have improved efficacy, reduced irritation on skin, reduced white residue on skin and clothing, and improved aesthetics
35 such as reducing the tackiness.

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Brief Summary of the Invention

This invention is a two phase, elastomer-free, low viscosity, high water roll-on cosmetic product, especially for use in the field of antiperspirants and/or deodorants. The roll-on product is made with a polar phase and a non-polar phase wherein a
5 cosmetically active ingredient effective as an antiperspirant and/or a deodorant is dissolved in one of the phases.

The composition is packaged in a conventional roll-on dispenser. Before the product is applied the container is shaken or agitated forcefully enough to temporarily mix the two phases. The product is applied while the two phases are mixed. The
10 following description includes both a formulation which comprises the ingredients listed and a composition which is made by combining the ingredients listed. Note that for the units used, centistoke = centipoise/density. Thus, when the density is close to 1, the centistoke and centipoise measurements will be about the same.

The non-polar phase can be clear, translucent or opaque, has a viscosity up to
15 200 centipoise (preferably less than 20 centipoise), and is made by combining the following ingredients:

(a) 0.1-40 weight % (more particularly 5-30%) of a volatile and/or a nonvolatile silicone selected from the group consisting of linear and cyclic organo-substituted polysiloxanes wherein the viscosity is less than 5 centistokes for volatile silicones and
20 in the range of 5-20 centistokes for non-volatile silicones;

(b) 0-25 weight % (more particularly 1-10%) of a straight or branched chain hydrocarbon polymer which has an average molecular weight in the range of 450-6000 daltons;

(c) 0-15 weight % (more particularly, 1-10% and, even more particularly, 1-
25 5%) of one or more low viscosity, lipophilic emollients selected from the group consisting of:

(i) 0-10 weight % (with a particular range being 1-8%) of a non-polar hydrocarbon (preferably branched such as with an "iso" group) having from 4-30 carbons (preferably 4-20 carbons and, more preferably, 6-20 carbons);

(ii) 0-10 weight % (with a particular range being 1-8%) of a benzoic acid ester selected from the group consisting of C12-C20 benzoate esters (for example, a C12-15 alkyl benzoate such as FINSOLV TN);
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(iii) 0-8 weight % (with a particular range being 4-6% and especially 5%) of a propoxylated fatty alcohol having 4-16 carbons and 2-14 moles of propoxylation (for example, PPG-3 myristyl ether);
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(d) optionally one or more ingredients selected from the group consisting of

(i) 0-0.2 weight % (particularly 0.001-0.01 weight %) of a silicone surfactant having an hydrophilic lipophilic balance ("HLB value") ≤ 13 (so as to temporarily stabilize the emulsion for ease of application, for example for a time not exceeding 24 hours, particularly not exceeding 15 hours (noting that compositions can be made whose stability is in a range as low as 1-20 minutes);

(ii) 0-2 weight % (particularly 0.1-1%) hydrophobically treated amorphous colloidal fumed silica;

(iii) 0- 2 weight % fragrance (particularly 0.5 to 1 weight %);

(iv) 0-1.00 weight % vitamins (particularly 0.01-1.00 weight %) (especially vitamin E or a precursor); and

(v) 0.0-0.002 weight % coloring agent (for example, a cosmetic pigment).

The polar phase can be clear, translucent or opaque. In general it may contain one or more members selected from water and or a polyhydric alcohol wherein the cosmetically active ingredients are dissolved in this polar phase. The polar phase should also have a viscosity in the range of 10 - 2,000 centipoise ("cps"). The polar phase comprises:

(a) at least 5 weight % of an antiperspirant active;

(b) an aqueous component comprising at least 40 % water and a sufficient amount of a C2-3 alcohol, a glycol or a polyhydric alcohol so that the antiperspirant active is dissolved in the aqueous component (for example, 40-70% water, and up to 20.00 weight % (maximum) of one or more of ethyl alcohol, isopropyl alcohol, a glycol selected from the group consisting of propylene glycol, dipropylene glycol, tripropylene glycol and methylpropylene glycol, and mixtures of any of the foregoing);

(c) a thickening agent selected from the group consisting of:

(i) 0.05-2.5 weight % of a water soluble cationic derivative selected from the group consisting of hydroxyethyl cellulose and its copolymers (preferably Polyquaternium-10 (Celquat SC 240 C from National Starch, Finderna, NJ)), and hydroxypropyl cellulose and its copolymers, provided that the viscosity of the polar phase does not exceed 2,000 cps; and

(ii) 0.1-5 weight % of a starch modified polymer which is a sodium hydroxypropyl starch phosphate (for example, Pure Gel® products from Grain

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Processing Corporation, Muscatine, Iowa, such as those sold under the B990, B992, B994, and B980 designations);

(d) optionally one or more ingredients selected from the group consisting of

5 (i) micas (≤ 1.0 weight %, with an average particle size in the range of 10-125 microns and preferably less than 30 microns);

(ii) suspending agents (for example, 1-3 weight % of Bentone 38 with the addition of a polar additive, for example 0.3 - 1.0 weight % of propylene carbonate);

10 (iii) antimicrobial agents (which may also be considered as a cosmetic ingredient if used in sufficient amount to inhibit bacteria growth under the arm), for example, a member of the group consisting of bacteriostatic quaternary ammonium compounds such as 2-amino-2-methyl-1-propanol (AMP), cetyl-trimethylammonium bromide, cetyl pyridinium chloride, 2, 4, 4'-trichloro-2'-hydroxydiphenylether (Triclosan), N-(4-chlorophenyl)-N'-(3,4-dichlorophenyl)urea (Triclocarban), silver halides, octoxyglycerin (Sensiva™ SC 50); 3,7,11,-trimethyldodeca-2,6,10-trienol
15 (Farnesol from Dragoco, Totowa, NJ); and various zinc salts (for example, zinc ricinoleate). The bacteriostat can, illustratively, be included in the composition in an amount of 0-5%, particularly 0.01-1.0% by weight, of the total weight of the composition (Triclosan, can illustratively be included in an amount of from 0.05 to about 0.5% by weight, of the total weight of the composition.);

20 (iv) masking agents in an amount of 0-5.0 weight % (particularly 0.05-2%) by weight based on the total weight of the composition particularly if an unscented product is desired;

(v) 0-5 weight % of one or more polymers of ethylene oxide, for example PEG-4, PEG-6, PEG-8, PEG-9, PEG-10, PEG-12, PEG 14, Carbowax PEG-200, Carbowax
25 PEG-300, Carbowax PEG-400, Carbowax PEG-600, particularly 0.1-1.0 weight of PEG-12; and

(vi) 0-0.5 weight % of a water soluble surfactant having an hydrophilic lipophilic balance ("HLB value") ≥ 10 (for example, a member of the group consisting of Ceteth-20 sucrose stearate, Oleath-10 (sold under the tradename Volpo 10 from Croda, Inc.,
30 New Jersey), Oleath-20 (sold under the trade name Volpo 20), PEG 7 glycerol cocoate, and sorbitan 20 ethylene oxide monolaurate);

wherein the ratio of oil phase to water phase is in the range of 15:85-40:60; and whereby the composition is able to form a temporarily stabilized emulsion when shaken with a period of stability not exceeding 24 hours.

Detailed Description of the Invention

5 For the volatile silicones used in this invention, linear or cyclic materials may be used alone or in combination. Linear volatile methyl siloxanes ("VMS") have the formula $(\text{CH}_3)_3\text{SiO}\{(\text{CH}_3)_2\text{SiO}\}_y\text{Si}(\text{CH}_3)_3$. The value of y is 0-5. Cyclic VMS have the formula $\{(\text{CH}_3)_2\text{SiO}\}_z$. The value of z is 3-6. Preferably, these volatile methyl siloxanes are linear or cyclic with a viscosity in the range of 0.5-5 centistokes
10 (with the "cst" unit being the same as mm^2/s).

Representative linear volatile methyl siloxanes (I) are hexamethyldisiloxane (MM) with a boiling point of 100 degrees C., viscosity of $0.65 \text{ mm}^2/\text{s}$, and formula $\text{Me}_3\text{SiOSiMe}_3$; octamethyltrisiloxane (MDM) with a boiling point of 152 degrees C., viscosity of $1.04 \text{ mm}^2/\text{s}$, and formula $\text{Me}_3\text{SiOMe}_2\text{SiOSiMe}_3$; decamethyltetrasiloxane
15 (MD_2M) with a boiling point of 194 degrees C., viscosity of $1.53 \text{ mm}^2/\text{s}$, and formula $\text{Me}_3\text{SiO}(\text{Me}_2\text{SiO})_2\text{SiMe}_3$; dodecamethylpentasiloxane (MD_3M) with a boiling point of 229 degrees C., viscosity of $2.06 \text{ mm}^2/\text{s}$, and formula $\text{Me}_3\text{SiO}(\text{Me}_2\text{SiO})_3\text{SiMe}_3$; tetradecamethylhexasiloxane (MD_4M) with a boiling point of 245 degrees C., viscosity of $2.63 \text{ mm}^2/\text{s}$, and formula $\text{Me}_3\text{SiO}(\text{Me}_2\text{SiO})_4\text{SiMe}_3$; and hexadecamethylhepta-
20 siloxane (MD_5M) with a boiling point of 270 degrees C., viscosity of $3.24 \text{ mm}^2/\text{s}$, and formula $\text{Me}_3\text{SiO}(\text{Me}_2\text{SiO})_5\text{SiMe}_3$.

Representative cyclic volatile methyl siloxanes (II) are hexamethyl- cyclotrisiloxane (D_3) a solid with a boiling point of 134 degrees C. and formula $\{(\text{Me}_2)\text{SiO}\}_3$; octamethylcyclotetrasiloxane (D_4) with a boiling point of 176 degrees
25 C., viscosity of $2.3 \text{ mm}^2/\text{s}$, and formula $\{(\text{Me}_2)\text{SiO}\}_4$; decamethylcyclopentasiloxane (D_5) with a boiling point of 210 degrees C., viscosity of $3.87 \text{ mm}^2/\text{s}$, and formula $\{(\text{Me}_2)\text{SiO}\}_5$; and dodecamethylcyclohexasiloxane (D_6) with a boiling point of 245 degrees C., viscosity of $6.62 \text{ mm}^2/\text{s}$, and formula $\{(\text{Me}_2)\text{SiO}\}_6$ (with a particular group of cyclics including D_5 and D_6 cyclomethicones).

30 Particular examples of suitable volatile silicones include DC-244 Fluid, DC-245 Fluid, DC 246 Fluid, DC-344 Fluid, DC-345 Fluid, DC 200 Fluid (with 0.65 cst viscosity) to DC 200 Fluid (with 5 cst viscosity), and DC-1184 Fluid (a mixture of low

molecular weight volatile and non-volatile silicones most of which are linear and volatile, such material has a boiling point greater than 35 degrees and a viscosity of about 1.6 centistokes) all of which are from Dow Corning Corp.), and especially decamethylcyclopentasiloxane (DC-245 Fluid).

- 5 Silicones are linear organo-substituted polysiloxanes which are polymers of silicon/oxygen with general structure:

(1) $(R^{20})_3SiO(Si(R^{21})_2O)_xSi(R^{22})_3$ where R^{20} , R^{21} and R^{22} can be the same or different and are each independently selected from the group consisting of phenyl and C1-C60 alkyl; or

- 10 (2) $HO(R^{24})_2SiO(Si(R^{25})_2O)_xSi(R^{26})_2OH$, where R^{24} , R^{25} and R^{26} can be the same or different and are each independently selected from the group consisting of phenyl and C1-C60 alkyl;

(with specific examples including dimethicone, dimethiconol behenate, C₃₀₋₄₅ alkyl methicone, stearoxytrimethylsilane, phenyl trimethicone and stearyl dimethicone).

- 15 In general, silicone copolyols useful in the present invention include copolyols of the following Formulae I and II. Formula I is:



Formula I

- wherein each of R^{10} , R^{11} , R^{12} , and R^{13} may be the same or different and each is selected from the group consisting of C1-C6 alkyl; R^b is the radical $-C_mH_{2m-}$; R^e is a terminating radical which can be hydrogen, a C1-C6 alkyl group, an ester group such as acyl, or an aryl group such as phenyl; m has a value in the range of 2-8; p and s have values such that the oxyalkylene segment $-(C_2H_4O)_p-(C_3H_6O)_s-$ has a molecular weight in the range of 200-5,000; the segment preferably having 50-100 mole percent of oxyethylene units, $-(C_2H_4O)_p-$, and 1-50 mole percent of oxypropylene units, $-(C_3H_6O)_s-$; x has a value of 8-400; and y has a value of 2-40. Preferably each of R^{10} , R^{11} , R^{12} , and R^{13} is a methyl group; R^e is hydrogen; m is 3 or 4 whereby the group R^b is most preferably the radical $-(CH_2)_3-$; and the values of p and s are such as to provide a molecular weight of the oxyalkylene segment, $-(C_2H_4O)_p-(C_3H_6O)_s-$, in the range of 1,000-3,000. Most preferably p and s are selected to have a value in the range of 18-28.
- 30 Formula II is

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Formula II

wherein r has a value in the range of 6-16; w has a value in the range of 6-100; z has a value in the range of 1-20, and the other moieties have the same definition as described for Formula I.

It should be understood that in both Formula I and II shown above, the siloxane-oxyalkylene copolymers of the present invention may, in alternate embodiments, take the form of endblocked polyethers in which the linking group (R^b), the oxyalkylene segments, and the terminating radical (R^q) occupy positions bonded to the ends of the siloxane chain, rather than being bonded to a silicon atom in the siloxane chain. Thus, one or more of the R^{10} , R^{11} , R^{12} , and R^{13} substituents which are attached to the two terminal silicon atoms at the end of the siloxane chain can be substituted with the segment $-(R^b-O-(C_2H_4O)_r-(C_3H_6O)_s-R^q)$ or with the segment $-(R^b-O-(C_2H_4O)_r-R^q)$. In some instances it may be desirable to provide the segment $-(R^b-O-(C_2H_4O)_r-(C_3H_6O)_s-R^q)$ or $-(R^b-O-(C_2H_4O)_r-R^q)$ at locations which are in the siloxane chain as well as at locations at one or both of the siloxane chain ends.

Particular examples of suitable dimethicone copolyols which are available either commercially or experimentally from a variety of suppliers include DOW CORNING® 5225C (from Dow Corning Corporation, Midland, MI) which is a 10% dimethicone copolyol in cyclomethicone; DOW CORNING® 2-5185C which is a 45-49% dimethicone copolyol in cyclomethicone; SILWET L-7622 (from Witco Corporation, Greenwich, CT); ABIL EM97 (from Goldschmidt Chemical Corporation, Hopewell, VA) which is a 85% dimethicone copolyol in D5 cyclomethicone; and FPD 4668 (from Shin-Etsu Corporation, Japan) which is a fluorine containing organopolysiloxane.

It should also be noted that various concentrations of dimethicone copolyols in cyclomethicone can be used. While a concentration of 10% in cyclomethicone (which can be D4, D5, D6 or mixtures thereof) is frequently commercially available, other concentrations can be obtained such as, for example, by stripping off the cyclomethicone or adding additional cyclomethicone. The higher concentration materials such as DOW CORNING® 2-5185C is of particular interest.

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In one particular embodiment 0.1-2% (particularly 0.1-0.5%) of a 10% silicone copolyol such as dimethicone copolyol in cyclomethicone (particularly a D5 or D6 cyclomethicone) mixture may be used, wherein the amount of the mixture added is selected so that the level of silicone copolyol in the cosmetic composition is in the range of 0 to about 0.2 weight % (particularly 0 to about 0.05 %) (for example, 0.25-0.4% of a 40-50% dimethicone copolyol in cyclomethicone mixture).

Hydrocarbons as used in this application are a group of compounds derived from petroleum and contain only carbon and hydrogen. Their structures can vary widely and include aliphatic, alicyclic and aromatic compounds. Specific examples include paraffin, petrolatum, hydrogenated polyisobutene, polybutene and mineral oil. Hydrocarbons of particular interest for use in this invention include isoparaffinic fluids having 4-30 carbons (especially 7-20 carbons) such as C7-8 isoparaffin, C8-9 isoparaffin, C10-11 isoparaffin, C11-12 isoparaffin, C11-13 isoparaffin, C13-14 isoparaffin, C12-20 isoparaffin, especially C11-12 isoparaffin (for example, Isopar H from Exxon Chemical Company, Baytown, TX), and other branched chain hydrocarbons such as isododecane (Permethyl 99A), isoeicosane (Permethyl 102A), isohexadecane (Permethyl 101A) (the Permethyls being available from Preperse, Inc., South Plainfield, NJ), and combinations of any of the foregoing.

Particular examples of benzoate esters which can be used in this invention include isostearyl benzoate, PPG-15 stearyl ether benzoate, octyldodecyl benzoate, and C12-15 alkyl benzoate and those described in U.S. Patent 4,791,097 and U.S. Patent 5,270,461, incorporated by reference herein with respect to the description of such esters. These include compositions of formula: PHENYL - C(O)OR³⁰ where R³⁰ is:

- (a) a branched or linear alkyl of 20-28 carbons; or
- (b) -CH(CH₃)-CH₂(O-CH(CH₃)CH₂)_n-O-R³¹, wherein n is 9-16 and R³¹ is a branched or linear alkyl of 3-22 carbons.

More particular examples of such benzoate esters include isostearyl benzoate, PPG-15 stearyl ether benzoate, octyldodecyl benzoate, and C12-15 alkyl benzoate (for example and preferably, FINSOLV TN from Finetex, Inc. (Elmwood Park, NJ).

Another particular group of such esters include those marketed by Finetex under the designations FINSOLV® TN (C12-15 alkyl benzoate), FINSOLV® SB (isostearyl benzoate), FINSOLV® P (PPG-15 stearyl ether benzoate), FINSOLV® BOD (octyl

dodecyl benzoate), FINSOLV® 116 (stearyl benzoate), FINSOLV® PL-62 (Poloxamer 182 benzoate) and FINSOLV® PL-355 (poloxamer 105 benzoate).

The antiperspirant active can be selected from the group consisting of any of the known antiperspirant active materials. These include, by way of example (and not of a limiting nature), aluminum chlorohydrate, aluminum chloride, aluminum dichlorohydrate, aluminum sesquichlorohydrate, zirconyl hydroxychloride, aluminum-zirconium glycine complex (for example, aluminum zirconium trichlorohydrate gly, aluminum zirconium pentachlorohydrate gly, aluminum zirconium tetrachlorohydrate gly and aluminum zirconium octochlorohydrate gly), aluminum chlorohydrate PG, aluminum chlorohydrate PEG, aluminum dichlorohydrate PG, and aluminum dichlorohydrate PEG. The aluminum-containing materials can be commonly referred to as antiperspirant active aluminum salts. Generally, the foregoing metal antiperspirant active materials are antiperspirant active metal salts. In the embodiments which are antiperspirant compositions according to the present invention, such compositions need not include aluminum-containing metal salts, and can include other antiperspirant active materials, including other antiperspirant active metal salts. Generally, Category I active antiperspirant ingredients listed in the Food and Drug Administration's Monograph on antiperspirant drugs for over-the-counter human use can be used. In addition, any new drug, not listed in the Monograph, such as aluminum nitrate hydrate and its combination with zirconyl hydroxychlorides and nitrides, or aluminum-stannous chlorohydrates, can be incorporated as an antiperspirant active ingredient in antiperspirant compositions according to the present invention.

Particular types of antiperspirant actives include aluminum zirconium trichlorohydrate and aluminum zirconium tetrachlorohydrate either with or without glycine. A particular antiperspirant active is aluminum zirconium glycine salts with enhanced efficacy due to improved distribution of the molecular species such as described in PCT publication number WO 92/19221, and/or solutions of such salts made with water and/or propylene glycol.

Antiperspirant actives can be incorporated into compositions according to the present invention in amounts in the range of 0.1 – 25% of the final composition, but the amount used will depend on the formulation of the composition. For example, at amounts in the lower end of the broader range (for example, 0.1 - 10% on an actives

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basis), a deodorant effect may be observed. At lower levels the antiperspirant active material will not substantially reduce the flow of perspiration, but will reduce malodor, for example, by acting as an antimicrobial material. At amounts of 10-25% (on an actives basis) such as 15 - 25%, by weight, of the total weight of the composition, an antiperspirant effect may be observed.

The glycol or polyglycol is selected from the group consisting of ethylene glycol, propylene glycol, 1,2-propanediol, diethylene glycol, triethylene glycol, tetraethylene glycol, dipropylene glycol, tripropylene glycol, methyl propanediol, 1,6-hexanediol, 1,3-butanediol, 1,4-butanediol, PEG-4 through PEG-100, PPG-9 through PPG-34, pentylene glycol, neopentyl glycol, trimethylpropanediol, 1,4-cyclohexanedimethanol, 2,2-dimethyl-1,3-propanediol, 2,2,4,4-tetramethyl-1,3-cyclobutanediol, and mixtures thereof. More particular examples of the glycol component include one or more members of the group consisting of propylene glycol, dipropylene glycol, tripropylene glycol, 2-methyl-1,3-propanediol, methyl propylene glycol, low molecular weight (less than 600) polyethylene glycol, low molecular weight (less than 600) polypropylene glycols, and mixtures of any of the foregoing. Propylene glycol is of particular interest because the antiperspirant active is more soluble in this type of glycol. Tripropylene glycol has lower irritancy, but the antiperspirant active is not as soluble in this glycol. Mixtures of glycols may be used to balance these desirable properties.

Compositions according to the present invention can be made by first preparing both phases separately and then combining them in the final container.

Non-polar phase- The linear or cyclic silicones and other non-polar ingredients are blended at room temperature in a vessel. Optionally, fragrances can be added at the end.

Polar phase- In general, all of the ingredients except Polymer JR (Polyquaternium-10) are mixed at 300-400 rpm in a separate beaker to make a clear product. Polymer JR is gradually added to the polar phase with stirring. The mixture is then heated to about 40-50 degrees C after the addition of Polymer JR. Stirring is continued until the polar phase is clear. The heat is turned off and the polar phase is allowed to cool to room temperature.

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After cooling of the polar phase is completed, the non-polar phase is added on top of the polar phase.

If a coloring agent is added, it is first dissolved in a selected amount of polar material such as water, or in a non-polar material such as PPG-3-myristyl ether, C12-15 alkyl benzoates (FINSOLV TN from Finetex, Inc.), and low molecular weight organo-substituted polysiloxanes such as polydimethylsiloxane (for example, DC 200 Fluid having a viscosity of 5 centistokes ("cst"); DC 245 Fluid having a viscosity of 3.87 cst, both of which are available from Dow Corning Corp.) and then added to the appropriate phase.

Each phase can be introduced into dispensing containers known to those skilled in the art for roll-ons. The product from the reservoir comes to the top rolling surface of the dispensing container, and from there may be applied to the skin in the axillary regions to deposit sufficient amounts of antiperspirant and/or deodorant active material to reduce body malodor and/or reduce perspiration in axillary regions of the human body.

The components of the conventional roll-on containers can be made of various materials and can have different shapes. The material of the container can be polypropylene, polyethylene terephthalate (PET), high-density polyethylene or glass. The applicator is usually a hollow ball made of polypropylene. The diameter can vary from 10.4 to 35.5 mm, depending on the design of the container. The ball can be assembled directly in the container or with a special insert (ball housing) depending also on the design of the container. The caps can be of different designs (usually made of polypropylene) with smooth or ribbed walls.

Examples of suitable roll-on dispensers include those described in U.S. Design Patent 402,550 to Poisson; U.S. 6,132,126 to Sheffer et al (an adjustable applicator); U.S. 4,030,844 to Lench et al; U.S. Patent 4,021,125 to Berghahn et al; U.S. Patent 4,033,700 to Spatz; U.S. Patent 5,553,957 to Dornbusch et al; WO 00/64302 to Hindustan Lever Ltd.; and WO 01/03541 to Chang; all of which are incorporated by reference herein to the extent they describe roll-on dispensers. These references also include the use of fumed silica.

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The invention may be seen in various forms. For example, one form of the invention has a low viscosity (less than 20 cps) non-polar phase and is free of fumed silica and clays. Alternatively, another choice for this first embodiment is a composition free of clay but which can contain silica. A second embodiment has a non-polar phase made with (a) 5-30% of a cyclomethicone or 5-25% cyclomethicone and up to 5 dimethicone (wherein the dimethicone has a viscosity of less than 5 cst); and (b) 1-10 % of a low viscosity, lipophilic emollient (especially C12-15 alkyl benzoate or PPG-3 myristyl ether). A third embodiment has a non-polar phase made with (a) 5-20% of a cyclomethicone and up to 10% dimethicone (wherein the dimethicone has a viscosity of less than 5 cst); and (b) 1-10 % of a low viscosity, lipophilic emollient (especially C12-15 alkyl benzoate or PPG-3 myristyl ether). A fourth embodiment has a non-polar phase made with (a) 5-30% of a cyclomethicone or 5-25% cyclomethicone and 5% dimethicone (wherein the dimethicone has a viscosity of less than 5 cst); (b) 1-8 of a low viscosity, lipophilic emollient (especially C12-15 alkyl benzoate or PPG-3 myristyl ether or a non-polar C6-20 hydrocarbon (especially one with an "iso" group)). A fifth embodiment is the same as the fourth embodiment and additionally is free of silica and clay. A sixth embodiment can be made with any of the foregoing embodiments in the non-polar phase and a polar phase made with 1-10 % anhydrous ethanol and up to 10% of a glycol as defined above (especially propylene glycol).

Various forms of the invention can be exemplified by the following formulations but these should not be construed as limitations on the invention. Note that all the formulations have the viscosities as noted.

Formulation 1-I

non-polar phase (viscosity less than 20 cps)

- 10-25 weight % pseudo silicone (mixture of mineral oil, dodecanoic acid, dodecyl ester, hexadecanoic acid, octadecyl ester, docosanoic acid octadecyl ester from Strahl & Pitech Inc., West Babylon, NY)
- 1-2 weight % cyclomethicone (Dow Corning Fluid 245)
- 1-3 weight % polybutene (Amoco Corp.)
- 1 - 10 weight % PPG-3 myristyl ether (Croda Oleochemicals Inc.)
- optionally 0.5 - 1.0-weight % fragrance.

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19polar phase

45 - 58 weight % of Al Zr tetrachlorohydrex gly (30% in water (Z-522 from Summit))

0.1- 0.5 weight % Polyquaternium-10 (Celquat SC 240 C)

2-10 weight % water

5 optionally 1-10 weight % ethanol

Formulation 2-Mnon-polar phase (viscosity less than 200 cps)0.5- 1 weight % Cab-O-Sil (hydrophobically modified amorphous colloidal silica,
Cabot Corp.)

10 2-20 weight % cyclomethicone (DC 245 Fluid)

10-26 weight % dimethicone from Dow Corning Corp.

optionally 0.5 - 1.0 weight % fragrance

polar phase

45 - 58 weight % of Al Zr tetrachlorohydrex gly (30% in water (Z-522 from Summit))

15 0.1- 0.5 weight % Polyquaternium-10 (Celquat SC 240 C)

2-10 weight % water

optionally 1-10 weight % ethanol

Formulation 3-AAnon-polar phase (viscosity less than 20 cps)

20 10-20 weight % cyclomethicone

0.05-0.5 weight % nonionic surfactant (e.g. Emulsogen SRO from Clariant Co., Wayne,
NJ)

0.5-1.0 weight % fragrance

0-5 weight % emollient (such as PPG-3 myristyl ether from Goldschmidt, Hopewell,

25 VA)

polar phase

50-70 weight % (29% active in water) antiperspirant active

10-15 weight % alcohol/glycol (1-10 % anhydrous ethanol + 0-10% propylene glycol)

1-10 weight % water

30 0.1-0.3 weight % thickener Polymer JR (Polyquaternium-10 from Amerchol, Edison,
NJ)

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Formulation 4-BB**non-polar phase (viscosity less than 20 cps)**

20-30 weight % cyclomethicone (DC Fluid 245 from Dow Corning, Midland, MI)

0.05-0.2 weight % fluorinated silicone surfactant (For example, FPD 4668 from Shin-

5 Btau Co., Japan)

0.5-1.0 weight % fragrance

0-5 weight % emollient (such as PPG-3 myristyl ether)

polar phase

50-60 weight % (29% active in water) antiperspirant active

10 5-15 weight % alcohol/glycol (1-10% anhydrous alcohol + 0-10% propylene glycol)

1-10 weight % water

0.1-0.3 weight % thickener (Polymer JR)

Formulation 5-CC**non-polar phase (viscosity less than 20 cps)**

15 20-35 weight % cyclomethicone/dimethicone (10-35% D5 cyclomethicone + 0-10% dimethicone (< 5 cst))

0.01-0.05 weight % silicone surfactant (For example 5225C, 10% in cyclomethicone from Dow Corning)

20 0.5-1.0 weight % fragrance

0-5 weight % emollient (such as FINSOLV TN from Finetex Inc., Elmwood Park, NJ)

polar phase

50-60 weight % (29% active in water) antiperspirant active

5-15 weight % alcohol/glycol (1-10% anhydrous ethanol + 0-10% propylene glycol)

25 1-10 weight % water

0.1-0.3 weight % thickener (Polymer JR)

Formulation 6-FF**non-polar phase (viscosity less than 20 cps)**

30 10-15 weight % cyclomethicone/dimethicone (5-15% D5 cyclomethicone + 0-10% dimethicone (< 5 cst))

0.01-0.05 weight % silicone surfactant (For example 5225C, 10% in cyclomethicone from Dow Corning)

0.5-1.0 weight % fragrance

0-5 weight % emollient (such as FINSOLV TN)

polar phase

60-70 weight % (29% active in water) antiperspirant active

10-20 weight % alcohol/glycol (2-10% anhydrous ethanol + 0-10% propylene glycol)

1-10 weight % water

5 0.1-0.5 weight % thickener (Polymer JR)

Formulation 7-GGnon-polar phase (viscosity less than 20 cps)

10-20 weight % cyclomethicone/dimethicone (5-10% D5 cyclomethicone + 0-10% dimethicone (< 5cst))

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0.5-1.0 weight % fragrance

1-10 weight % emollient (such as PPG-3 myristyl ether)

polar phase

50-70 weight % (29% active in water) antiperspirant active

15 10-20 weight % alcohol/glycol (2-10% anhydrous ethanol + 0-10% propylene glycol)

1-10 weight % water

0.1-0.5 weight % thickener (Polymer JR)

Formulation 8-HHnon-polar phase (viscosity less than 20 cps)

20 20-30 weight % cyclomethicone/dimethicone (10-30% D5 cyclomethicone + 0-10% dimethicone (< 5cst))

0.05-0.2 weight % silicone surfactant (For example 5225C, 10% in cyclomethicone from Dow Corning)

25 0.5-1.5 weight % fragrance

0-5 weight % emollient (such as FINSOLV TN)

polar phase

50-60 weight % (29% active in water) antiperspirant active

5-15 weight % alcohol/glycol (0-10% anhydrous ethanol + 3-10% propylene glycol)

30 1-10 weight % water

1-4 weight % thickener (Puregel 990, from Grain Processing Co., Iowa)

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EXAMPLES

The following Examples are offered as illustrative of the invention and are not to be construed as limitations thereon. In the Examples and elsewhere in the description of the invention, chemical symbols and terminology have their usual and customary meanings. Numbers for viscosities and molecular weights are averages. In the Examples as elsewhere in this application (a) values for n, m, etc. in formulas, molecular weights and degree of ethoxylation or propoxylation are averages; (b) temperatures are in degrees C unless otherwise indicated; and (c) the amounts of the components are in weight percents based on the standard described; if no other standard is described then the total weight of the composition is to be inferred. Various names of chemical components include those listed in the CTFA International Cosmetic Ingredient Dictionary (Cosmetics, Toiletry and Fragrance Association, Inc., 7th ed. 1997). Mixing techniques used to make the compositions are those conventionally used in the art including those described above.

Examples 1-9: General Method of Making Compositions

Compositions according to the present invention as seen in Examples 1-9 may be made as follows using the amounts and types of ingredients listed under the appropriate Example number. Total percent for each Example is 100%.

Non-polar phase – All of the ingredients for Part A are combined in a beaker and the mixture is stirred at 300-400 rpm using a Lightnin Mixer Model L 1003 until a homogeneous solution is obtained.

Polar phase – The ingredients for the polar phase are combined with stirring. If the polar phase contains a modified starch (such as hydroxypropyl starch phosphate), it must be pre-dispersed in a small part of the antiperspirant active solution. The pre-dispersed material is then added to the rest of the antiperspirant active solution with agitation and the mixture is heated to be at 85-95 degrees C. If the polar phase contains Polyquaternium-10, this is pre-dispersed in the active to form a homogeneous dispersion free of lumps. The mixture is then heated to a temperature in the range of 40-50 degrees C with agitation until a clear solution is obtained. If the final formulation contains a colorant it must be dissolved in the minimum amount of water and then added in the polar phase.

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23Combination of the phases in a container -

Each phase is poured into the container in the ratios indicated in the final composition. There is no special order of addition into the container. The polar phase will tend to go to the bottom.

- 5 The method described above can be used to make the following compositions wherein all amounts are weight % based on the total weight of the composition. For these Examples, cyclomethicone is DC 245 from Dow Corning; the surfactant is either a fluorinated silicone surfactant Shin-Etsu FPD-4668 from Shin-Etsu Silicones of America (Akron, Ohio) or Dimethicone copolyol/cyclomethicone 5225C (10%) from
- 10 Dow Corning; the emulsifier is a sorbitol ester of rapeseed oil (Emulsogen SRO from Clariant Corp., Germany); the silicone fluid is a dimethyl polysiloxane such as DC200 Fluid, 200 cst from Dow Corning, Midland Michigan; the hydrogenated polyisobutene 250 is a branched hydrocarbon from Fanning Corp., Illinois; the antiperspirant active is
- 15 Al-Zr tetrachlorohydrate gly with a metal:chloride ratio in the range of 0.9:1-1.2:1 as described in U.S. Patent 6,375,937 (obtained from Summit Research Laboratories, Huguenot, NY); a polymeric quaternium ammonium salt of hydroxyethyl cellulose reacted with a trimethyl ammonium substituted epoxide (Polymer JR from Amerchol); a modified starch based polymer, sodium hydroxypropyl starch phosphate (PureGel 990 from Grain Processing Corp.); and Oleath-10 (Volpo 10 from Croda, Inc., Parsippany,
- 20 New Jersey).

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Table A

Example	1	2	3	4	5	6	7	8	9
Part A									
Cyclomethicone	16.10	25.90	12.00	16.20	18.99	11.7	15.00	26.99	16.30
Dimethi-cone copolyol	0	0	0.02	0	0.01	0	0	0.01	0
Shin-Etsu FPD-4668	0	0.1	0	0	0	0	0	0	0
Emulsogen SRO	0.10	0	0	0	0	0	0	0	0
PPG-3 myristyl ether	3.00	3.00	0	3.00	0	2.5	2.00	2.00	2.80
Silicone fluid	0	0	16.98	0	20.00	0	0	0	0
Hydrogenated polyiso-butene 250	0	0	0	0	0	0	2.20	0	0
Fragrance	0.80	1.00	1.00	0.80	1.00	0.80	0.80	1.00	0.80
Part B									
AP active (28% in water)	67.00	55.00	55.00	70.50	50.00	66	60	55.60	65.98
Propylene glycol	4.00	0	0	5.00	0	0	0	0	9.70
Tripropylene glycol	0	0	0	0	0	9	7	0	0
Polymer JR	0.20	0.20	0.20	0.20	0.20	0.30	0.25	0	0.40
Alcohol (100%)	8.80	9.80	9.80	4.30	4.80	5	9	9.00	0
PureGel 990	0	0	0	0	0	0	0	2.40	0
Additional Water	0	5.00	5.00	0	5.00	4.70	3.75	3.00	4.00
Olcoath-10	0	0	0	0	0	0	0	0	0.02
Total	100	100	100	100	100	100	100	100	100
Total water content	48.24	44.6	44.6	50.8	41	52.2	46.9	43.03	51.5
Oil:Water	20:80	30:70	30:70	20:80	40:60	15:85	20:80	30:70	20:80

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CLAIMS

What is claimed is:

1. A two-phase, elastomer-free, low viscosity, high water roll-on antiperspirant and/or deodorant composition comprising:
 - 5 (A) a non-polar phase having a viscosity up to 200 centipoise and comprising:
 - (a) 0.1-40 weight % of a volatile and/or a nonvolatile silicone selected from the group consisting of linear and cyclic organo-substituted polysiloxanes wherein the viscosity is less than 5 centistokes for volatile silicones and in the range of 5-20 centistokes for non-volatile silicones;
 - 10 (b) 0-25 weight % of a straight or branched chain hydrocarbon polymer which has an average molecular weight in the range of 450-6000 daltons;
 - (c) 0-15 weight % of one or more low viscosity, lipophilic emollients selected from the group consisting of:
 - (i) 0-10 weight % of a non-polar hydrocarbon having from 4-30 carbons;
 - 15 (ii) 0-10 weight % of a benzoic acid ester selected from the group consisting of C12-C20 benzoate esters;
 - (iii) 0-8 weight % of a propoxylated fatty alcohol having 4-16 carbons and 2-14 moles of propoxylation;
 - (d) optionally one or more ingredients selected from the group consisting of
 - 20 (i) 0-0.2 weight % of a silicone surfactant having an hydrophilic lipophilic balance ≤ 13 ;
 - (ii) 0-2 weight % hydrophobically treated amorphous colloidal fumed silica;
 - (iii) 0- 2 weight % fragrance;
 - 25 (iv) 0-1.00 weight % vitamins; and
 - (v) 0.0-0.002 weight % coloring agent; and
 - (B) a polar phase having a viscosity in the range of 10 – 2,000 centipoise and comprising:
 - (a) at least 5 weight % of an antiperspirant active;
 - 30 (b) an aqueous component comprising at least 40 % water and a sufficient amount of a C2-3 alcohol, a glycol or a polyhydric alcohol so that the antiperspirant active is dissolved in the aqueous component;

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(c) a thickening agent selected from the group consisting of:

(i) 0.05-2.5 weight % of a water soluble cationic derivative selected from the group consisting of hydroxyethyl cellulose and its copolymers and hydroxypropyl cellulose and its copolymers, provided that the viscosity of the polar phase does not exceed 2,000 cps; and

(ii) 0.1-5 weight % of a starch modified polymer which is a sodium hydroxypropyl starch phosphate;

(d) optionally one or more ingredients selected from the group consisting of

(i) 0-1.0 weight % mica with an average particle size in the range of 10-125;

(ii) an effective amount of a suspending agent;

(iii) an effective amount of an antimicrobial agent;

(iv) 0-5.0 weight % masking agent;

(v) 0-1.0 weight % of a polymer of ethylene oxide; and

(vi) 0-0.5 weight % of a water soluble surfactant having an hydrophilic lipophilic balance ("HLB value") ≥ 10 ;

wherein the ratio of oil phase to water phase is in the range of 15:85-40:60; and

whereby the composition is able to form a temporarily stabilized emulsion after shaking for a period not exceeding 24 hours.

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2. A composition according to Claim 1 which is free of clay.

3. A composition according to Claim 1 which is free of clay and is free of silica.

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4. A composition according to Claim 1 wherein the period does not exceed 15 hours.

5. A composition according to Claim 1 wherein the period is in the range of 1-20 minutes.

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6. A composition according to Claim 1 comprising 5-30 weight % of a linear or cyclic organo-substituted polysiloxane having a viscosity less than 20 centistokes.

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7. A composition according to Claim 1 comprising 1-10 weight % of the hydrocarbon polymer.
- 5 8. A composition according to Claim 1 or 7 comprising 1-10 weight % of the lipophilic emollients.
9. A composition according to Claim 1 comprising 1-10 weight % of the lipophilic emollients wherein the lipophilic emollients are selected from the group consisting of :
10 (i) 1-8 weight % of the non-polar hydrocarbon; (ii) 1-8 weight % of the benzoic acid esters; and (iii) 4-6 weight % of the propoxylated fatty alcohol.
10. A composition according to Claim 1 further comprising 0.001-0.01 weight % of the silicone surfactant.
- 15 11. A composition according to Claim 1 further comprising 0.1-1 weight % of the hydrophobically treated amorphous colloidal fumed silica.
12. A composition according to Claim 1 comprising 40-70 weight % water and up to 20 weight % of one or more members selected from the group consisting of ethyl
20 alcohol, isopropyl alcohol, a glycol selected from the group consisting of propylene glycol, dipropylene glycol, tripropylene glycol and methylpropylene glycol, and mixtures of any of the foregoing.
13. A composition according to Claim 1 comprising:
25 10-27 weight % pseudo silicone as a mixture of mineral oil, dodecanoic acid, dodecyl ester, hexadecanoic acid, octadecyl ester, docosanoic acid octadecyl ester, 1-2 weight % cyclomethicone;
1-3 weight % polybutene;
1-10 weight % PPG-3 myristyl ether;
30 45 - 58 weight % of Al/Zr tetrachlorohydrate gly as 30% in water or its equivalent;
0.1- 0.5 weight % Polyquaternium-10;
2-10 weight % additional;
optionally 1-10 weight % ethanol; and
optionally 0.5 - 1.0 weight % fragrance.

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14. A composition according to Claim 1 comprising:
0.5- 1 weight % hydrophobically modified amorphous colloidal silica;
2-20 weight % cyclomethicone;
5 10-28 weight % dimethicone having a viscosity of 20 cst;
45 - 58 weight % of Al Zr tetrachlorohydrate gly as 30% in water or its equivalent;
0.1- 0.5 weight % Polyquaternium-10;
2-10 weight % additional water;
optionally 1-10 weight % ethanol; and
10 optionally 0.5 - 1.0 weight % fragrance.

15. A composition according to Claim 1 comprising:
10-20 weight % cyclomethicone;
0.05-0.5 weight % nonionic surfactant;
15 50-70 weight % antiperspirant active as 29% active in water or its equivalent;
10-15 weight % alcohol/glycol mixture as 1-10 % anhydrous ethanol + 0-10%
propylene glycol;
1-10 weight % additional water;
0.3-1 weight % Polyquaternium-10;
20 0.5-1.0 weight % fragrance; and
0-5 weight % emollient.

16. A composition according to Claim 1 comprising:
20-30 weight % cyclomethicone;
25 0.05-0.2 weight % fluorinated silicone surfactant;
50-60 weight % antiperspirant active as 29% active in water or its equivalent;
5-15 weight % alcohol/glycol mixture as 1-10 % anhydrous ethanol + 0-10% propylene
glycol;
1-10 weight % additional water;
30 0.1-0.3 weight % Polyquaternium-10;
0.5-1.0 weight % fragrance; and
0-5 weight % emollient.



17. A composition according to Claim 1 comprising:
20-35 weight % cyclomethicone/dimethicone as a mixture of 10-35% D5
cyclomethicone + 0-10% of dimethicone with a viscosity of < 5 cst;
- 5 0.01-0.05 weight % silicone surfactant;
50-60 weight % antiperspirant active as 29% active in water or its equivalent;
5-15 weight % alcohol/glycol mixture as 1-10 % anhydrous ethanol + 0-10% propylene
glycol;
1-10 weight % additional water;
- 10 0.1-0.3 weight % Polyquaternium-10;
0.5-1.0 weight % fragrance; and
0-5 weight % emollient.
18. A composition according to Claim 1 comprising:
- 15 10-15 weight % cyclomethicone/dimethicone as a mixture of 5-15% D5
cyclomethicone + 0-10% of dimethicone with a viscosity of < 5 cst;
0.01-0.05 weight % silicone surfactant;
60-70 weight % as 29% active in water or its equivalent;
10-20 weight % alcohol/glycol mixture as 2-10% anhydrous ethanol + 0-10%
- 20 propylene glycol;
1-10 weight % additional water;
0.1-0.5 weight % Polyquaternium-10;
0.5-1.0 weight % fragrance; and
0-5 weight % emollient.
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19. A composition according to Claim 1 comprising:
- 10-20 weight % cyclomethicone/dimethicone as a mixture of 5-10% D5
cyclomethicone + 0-10% of dimethicone with a viscosity of < 5 cst;
50-70 weight % as 29% active in water or its equivalent;
- 30 10-20 weight % alcohol/glycol mixture as 2-10% anhydrous ethanol + 0-10%
propylene glycol;
1-10 weight % additional water;

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0.1-0.5 weight % thickener;
0.5-1.0 weight % fragrance; and
1-10 weight % emollient.

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20. A composition according to Claim 1 comprising:

10-30 weight % cyclomethicone/dimethicone as a mixture of 10-30% D5

cyclomethicone + 0-10% of dimethicone with a viscosity of < 5 cst;

0.05-0.2 weight % silicone surfactant;

10 50-60 weight % as 29% active in water or its equivalent;

5-15 weight % alcohol/glycol mixture as 0-10% anhydrous ethanol + 3-10%
propylene glycol;

1-10 weight % additional water;

1-4 weight % thickener;

15 0.5-1.5 weight % fragrance; and

0-5 weight % emollient.

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B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 7 A61K

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

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

EPO-Internal, PAJ, MPI Data

C. DOCUMENTS CONSIDERED TO BE RELEVANT

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A	WO 96/23483 A (SQUIBB BRISTOL MYERS CO) 8 August 1996 (1996-08-08) examples 1-5	1-20
X	US 2002/155078 A1 (URRUTIA-GUTIERREZ ADRIANA ET AL) 24 October 2002 (2002-10-24) example IV	1-20

☐ Further documents are listed in the continuation of box C.☒ Patent family members are listed in annex.

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

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

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

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Declaraciones bajo la Regla 4.17:

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las "Notas de guía sobre Códigos y Abreviaturas" que
aparecen al comienzo de cada edición de la Gaceta del PCT

(54) Título: PRODUCTO COSMETICO DE DOS FASES PARA APLICAR MEDIANTE BOLA

(57) Resumen: una composición antitranspirante y/o desodorante de dos fases, libre de elastómero, de baja viscosidad, con alto contenido de agua para aplicar mediante aplicador con bola que comprende: (A) una fase no polar que tiene una viscosidad de hasta 200 centipoise y comprende: (a) 0.1 – 40% en peso de una silicona volátil y/o volátil seleccionada del grupo que consiste de polissiloxanos lineales y cíclicos organo sustituidos en donde la viscosidad es de menos de 5 centistokes para las siliconas volátiles y en el rango de 5 – 20 centistokes para las siliconas no volátiles; (b) 0 – 25% en peso de un polímero de cadena de hidrocarburo recta o ramificada el cual tiene un peso molecular promedio en el rango de 450 – 8000 daltons; (c) 0 – 15 % en peso de uno o más emolientes lipofílicos seleccionados de baja viscosidad; y (B) una fase polar que tiene una viscosidad en el rango de 10-2 000 centipoise y que comprende: (a) al menos 5% en peso de un activo antitranspirante; (b) un componente acuoso que comprende al menos 40% de agua y una cantidad suficiente de C2-3 alcohol, un glicol o alcohol polihídrico tal que el activo antitranspirante esta disuelto en el componente acuoso; y (c) un agente espesante seleccionado; en donde la proporción de fase de aceite a fase de agua está en el rango de 45:85 – 40:60; y en donde la composición es capaz de formar una emulsión temporalmente estabilizada después de agitación por un período que no excede las 24 horas.,

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RESUMEN

Una composición antitranspirante y/o desodorante de bolita, de dos fases, libre de elastómeros, de baja viscosidad y alto contenido de agua, que comprende:

(A) una fase no polar que tiene una viscosidad de hasta 200 centipoise y que comprende:

(a) 0,1-40% en peso de una silicona volátil y/o no volátil seleccionada del grupo consistente en polisiloxanos organosustituidos lineales y cíclicos en los cuales la viscosidad es inferior a 5 centistokes para las siliconas volátiles y en el intervalo de 5-20 centistokes para las siliconas no volátiles;

(b) 0-25% en peso de un polímero de hidrocarburo de cadena lineal o ramificada que tiene un peso molecular promedio en el intervalo de 450-6000 daltons; (c) 0-15% en peso de uno o más emolientes lipófilos seleccionados de baja viscosidad; y

(B) una fase polar que tiene una viscosidad en el intervalo de 10-2.000 centipoise y que comprende:

(a) por lo menos 5% en peso de un activo antitranspirante;

(b) un componente acuoso que comprende por lo menos 40% de agua y una cantidad suficiente de un alcohol C2-3, un glicol o un alcohol polihídrico de tal modo que el activo antitranspirante se disuelva en el componente acuoso; y (c) un agente de espesamiento seleccionado;

en donde la relación de la fase de aceite a la fase de agua está en el intervalo de 15:85-40:60; y

con lo cual la composición es capaz de formar una emulsión temporalmente estabilizada por un periodo que no pasa de 24 horas, después de ser sacudida.

CAMPO DE LA INVENCION

Esta invención se refiere a un producto cosmético de bolita, de dos fases, libre de elastómeros, de baja viscosidad y alto contenido de agua, especialmente para ser usado en el campo de los antitranspirantes y/o desodorantes.

ANTECEDENTES DE LA INVENCION

Los productos de bolita actuales en el mercado involucran frecuentemente unas emulsiones y/o la suspensión de un activo antitranspirante en la formulación. Los productos requieren frecuentemente el uso de uno o más surfactantes para estabilizar y/o compatibilizar dos fases no compatibles. Hay dos asuntos asociados con el uso de surfactantes. El primer asunto es la irritación de la piel. A menos que el sistema surfactante sea cuidadosamente seleccionado, el uso de tales materiales puede causar irritación de la piel. El segundo asunto es la eficacia. Puede ocurrir que, en algunos sistemas, el uso de un surfactante pueda interferir con la formación de tarugos de gel mediante la cual muchos activos antitranspirantes trabajan para reducir la transpiración.

Otro grupo de beneficios pueden ser también logrados con la reducción y/o eliminación de los surfactantes en productos cosméticos que contienen un activo antitranspirante. Estos beneficios incluyen mejorar la sensación seca del producto, reducir la cantidad de residuo no blanco sobre la piel y la ropa, y reducir la pegajosidad del producto.

Unos sistemas de dos fases han sido observados en unas pocas aplicaciones cosméticas, incluyendo líquidos y sólidos. Un producto de dos fases líquido comercial de The Dial Corporation (Scottsdale, AZ) es Nature's Accents® Bath Treats,

un producto para baño de burbujas que comprende agua, etilhexanoato de cetearilo, laureth sulfato de sodio, cocamidopropil betaina, fragancia, glicerina, glutamato de cocoilo de sodio (y) glutamato de cocoilo de disodio, PEG-8, hidantoína DMDM, EDTA de tetrasodio, proteína de leche hidrolizada, extracto de miel y agentes colorantes. Como material limpiador, este producto es formulado con surfactantes. Este producto tiene una capa superior lechosa cremosa con una capa coloreada clara bajo la misma.

Un segundo producto líquido en dos fases, comercial, es el atomizador de colonia en brisa Cloud Dance™ distribuido por CCA Industries, Inc. (East Rutherford, NJ). Este producto enumera los siguientes ingredientes: alcohol SD, 40D, hexametil disiloxano, fragancia, agua destilada, cloruro de sodio, agentes colorantes y benzofenona-3. Este producto es transparente con dos bandas de diferentes colores.

Existen patentes de referencia que describen tecnología de dos fases o múltiples fases. La Patente de EE.UU. 4.120.948 de Shelton describe un antitranspirante en barra de dos fases que tiene (1) una fase antitranspirante sustancialmente anhidra que comprende una cera de alto punto de fusión, insoluble en agua, un emoliente líquido y altos niveles de un material activo antitranspirante particulado y (2) una fase de gel que comprende un alcohol polihídrico gelatinizado con un jabón de ácido graso o una amida de ácido graso.

La Patente de EE.UU. 4.438.095 de Grollier et al. describe una composición cosmética líquida que comprende dos fases líquidas separadas. La primera fase es una fase acuosa en la cual por lo menos un polímero catiónico es disuelto. La

composición no contiene agente detergente ni agentes espumantes.

La Patente de EE.UU. 4.767.741 de Komor et al. enseña una composición cosmética líquida de dos fases que comprende una fase de aceite y una fase de líquido orgánico/agua y partículas sólidas insolubles absorbidas en la interfaz entre las dos fases, en donde las partículas sólidas son el producto de la precipitación in situ de por lo menos una primera solución de sal y una segunda solución de sal (añadidas a la fase de aceite y la fase de líquido orgánico/agua durante el mezclado de las mismas).

La Patente de EE.UU. 4.973.473 de Schneider et al. enseña (en una realización preferida) una composición que comprende dos fases en gel discretas. La composición incluye un complejo emoliente que contiene una o más amidas de ácido carboxílico seleccionadas, un mucopolisacárido, por lo menos una proteína de estructuración de la piel y un astringente.

La Patente de EE.UU. 4.980.155 de Shah et al. enseña una composición cosmética de dos fases que comprende una fase coloreada que incluye una primera fase que comprende un agente de formación de película, por lo menos un colorante, un emulsor y agua; y una segunda fase que comprende una fase de gel que comprende un polímero soluble en agua y agua. Las fases son miscibles entre sí pero están dispuestas en fases separadas discretas una al lado de la otra.

La Patente de EE.UU. 5.213.799 de Foring et al. describe unas composiciones para el tratamiento de la piel que comprenden una fase de aceite transparente y una fase acuosa transparente, preferiblemente con efecto humectante, que

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permiten la formación de una mezcla homogénea cuando son sacudidas conjuntamente y posteriormente se separan nuevamente en dos fases transparentes. La composición cosmética incluye el uso de 0,1-1,0% en peso de un éster de triglicerol de ácido graso C12-C18.

La Patente de EE.UU. 5.290.555 de Guthauser et al. enseña unas composiciones con color estructural en las cuales se seleccionan dos fases con el mismo índice de refracción per diferente energía dispersante. Una o ambas fases pueden contener ingredientes cosméticamente activos.

La Patente de EE.UU. 5.474.777 de Marion et al. describe unas composiciones limpiadoras líquidas que consisten en una fase aceitosa y una fase acuosa, en donde la fase aceitosa consiste en por lo menos un fosfato de dialquilo y, opcionalmente, unos productos miscibles en la misma, y la fase acuosa contiene uno o más surfactantes iónicos.

La Patente de EE.UU. 5.593.663 de Leng et al. describe unos activos antitranspirantes que son materiales anfifílicos que, al contacto con la transpiración, forman una fase cristalina líquida insoluble en agua de periodicidad superior a la unidimensional.

La Patente de EE.UU. 5.654.362 de Schultz et al. describe unos aceites de silicona y solventes espesados por elastómeros de silicona y adecuados para ser usados en productos tales como antitranspirantes y desodorantes.

La Patente de EE.UU. 5.919.437 de Lee et al. describe unas composiciones cosméticas sólidas que incluyen unas composiciones cosméticas en crema que contienen elastómeros de silicona como agentes de gelación.

La Patente de EE.UU. 6.019.991 de Tanaka et al. enseña una composición cosmética de dos fases que comprende unas fases de aceite y agua separadas y distintas que forman una emulsión clara sumamente efímera cuando son sacudidas conjuntamente. Se usa un envase transparente. Una fase puede ser coloreada mientras que la otra es usualmente blanca como agua.

La Patente de EE.UU. 6.180.587 de Fuller et al. enseña una composición de múltiples fases que comprende una fase acuosa inferior que comprende por lo menos 1% en peso de un polímero o copolímero seleccionado del grupo consistente en poliacrilato, sulfonato de poliestireno, polivinil-pirrolidona, anhídrido maleico y mezclas de los mismos y una fase acuosa superior que tiene una cantidad de un surfactante efectiva para limpiar.

El caso PCT WO 00/67712 describe una barra sólida que contiene activos antitranspirantes y formada con una fase de núcleo y una fase externa.

Los productos de bolita convencionales usados como antitranspirantes y/o desodorantes son usualmente emulsiones o suspensiones anhidras. Las emulsiones pueden ser sistemas de aceite en agua o agua en aceite en los cuales una fase es dispersada en la otra. En las emulsiones ambas fases permanecen juntas debido a la adición de surfactantes. Los productos de emulsión tienden a tener una sensación húmeda, un nivel superior de pegajosidad y algunos problemas de irritación. Las suspensiones anhidras están compuestas por polvos suspendidos en líquidos anhidros. Típicamente incluyen un porcentaje relativamente elevado de agentes de suspensión que contribuyen a que unos residuos blancos sean dejados sobre la piel y la ropa. Aunque las suspensiones anhidras no

producen una sensación húmeda, exhiben otros problemas tales como sedimentación del polvo con el tiempo y filtración del líquido portador, especialmente si el producto no es sacudido continuamente.

La presente invención reduce y/o elimina algunos de los problemas antes mencionados. En particular, las composiciones de la presente invención son capaces de proporcionar antitranspirantes y/o desodorantes de dos fases que tienen una eficacia mejorada, una reducción de la irritación de la piel, una reducción de residuos blancos sobre la piel y la ropa y una estética mejorada, por ejemplo reduciendo la pegajosidad.

BREVE SUMARIO DE LA INVENCION

Esta invención es un producto cosmético de bolita ("roll-on") de dos fases, libre de elastómeros, de baja viscosidad y alto contenido de agua, especialmente para ser usado en el campo de los antitranspirantes y/o desodorantes. El producto de bolita es elaborado con una fase polar y una fase no polar, en donde el ingrediente cosméticamente activo efectivo como un antitranspirante y/o desodorante es disuelto en una de las fases.

La composición es envasada en un dispensador de bolita convencional. Antes de aplicar el producto, el recipiente es sacudido o agitado con fuerza suficiente para mezclar temporalmente las dos fases. El producto es aplicado mientras que las dos fases están mezcladas. La siguiente descripción incluye tanto una formulación que comprende los ingredientes indicados como una composición que es elaborada combinando los ingredientes indicados. Nótese que, para las unidades usadas, centistoke = centipoise/densidad. Así, cuando la densidad se

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aproxima a 1, las mediciones en centistokes y centipoise serán aproximadamente iguales.

La fase no polar puede ser transparente, translúcida u opaca, tiene una viscosidad de hasta 200 centipoise (preferiblemente inferior a 20 centipoise) y es elaborada combinando los siguientes ingredientes:

(a) 0,1-40% en peso (más particularmente 5-30%) de una silicona volátil y/o una silicona no volátil seleccionada del grupo consistente en polisiloxanos organo-sustituídos lineales y cíclicos en los cuales la viscosidad es inferior a 5 centistokes para las siliconas volátiles y está en el intervalo de 5-20 centistokes para las siliconas no volátiles;

(b) 0-25% en peso (más particularmente 1-10%) de un polímero de hidrocarburo de cadena lineal o ramificada que tiene un peso molecular promedio en el intervalo de 450-6000 daltons;

(c) 0-15% en peso (más particularmente 1-10% y, de mayor preferencia, 1-5%) de uno o más emolientes lipófilos de baja viscosidad seleccionados del grupo consistente en:

(i) 0-10% en peso (un intervalo particular siendo 1-8%) de un hidrocarburo no polar (preferiblemente ramificado tal como con un grupo "iso") que tiene 4-30 carbonos (preferiblemente 4-20 carbonos y, de preferencia, 6-20 carbonos);

(ii) 0-10% en peso (un intervalo particular siendo 1-8%) de un éster de ácido benzoico seleccionado del grupo consistente en ésteres de benzoato C12-C20 (por ejemplo, un benzoato de alquilo C12-15 tal como FINSOLV TN);

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(iii) 0-8% en peso (un intervalo particular siendo 4-6% y especialmente 5%) de un alcohol graso propoxilado que tiene 4-16 carbonos y 2-14 moles de propoxilación (p r ejemplo, éter de miristilo de PPG-3);

(d) opcionalmente uno o más ingredientes seleccionados del grupo consistente en

(i) 0-0,2% en peso (particularmente 0,001-0,01% en peso) de un surfactante de silicona que tiene un balance hidrófilo lipófilo ("valor HLB") ≤ 13 (de modo a estabilizar temporalmente la emulsión para facilidad de aplicación, por ejemplo por un tiempo que no pasa de 24 horas, particularmente que no pasa de 15 horas (haciend notar que se pueden elaborar unas composiciones cuya estabilidad está en un intervalo tan bajo como 1-20 minutos);

(ii) 0-2% en peso (particularmente 0,1-1%) de sílice humeada coloidal amorfa tratada de manera hidrófoba;

(iii) 0-2% en peso de fragancia (particularmente 0,5 a 1% en peso);

(iv) 0-1,00% en peso de vitaminas (particularmente 0,01-1,00% en peso) (especialmente vitamina E o un precursor); y

(v) 0,0-0,002% en peso de agente colorante (por ejemplo, un pigmento cosmético).

La fase polar puede ser transparente, translúcida u opaca. En general puede contener uno o más miembros seleccionados de agua y/o un alcohol polihídrico en donde los ingredientes cosméticamente activos son disueltos en esta fase polar. La

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fase polar también debería tener una viscosidad en el intervalo de 10-2.000 centipoise ("cps"). La fase polar comprende:

(a) por lo menos 5% en peso de un activo antitranspirante;

(b) un componente acuoso que comprende por lo menos 40% de agua y una cantidad suficiente de un alcohol C2-3, un glicol o un alcohol polihídrico, de modo que el activo antitranspirante se disuelva en el componente acuoso (por ejemplo, 40-70% de agua y hasta 20,00% en peso (máximo) de uno o más de alcohol etílico, alcohol isopropílico, un glicol seleccionado del grupo consistente en propilenglicol, dipropilenglicol, tripropilenglicol y metilpropilenglicol, y mezclas de cualesquiera de los precedentes);

(c) un agente de espesamiento seleccionado del grupo consistente en:

(i) 0,05-2,5% en peso de un derivado catiónico soluble en agua seleccionado del grupo consistente en hidroxietil celulosa y sus copolímeros (preferiblemente Poliquaternium-10 (Celquat SC 240 C de Nacional Starch, Finderne, NJ), e hidroxipropil celulosa y sus copolímeros, a condición de que la viscosidad de la fase polar no pase de 2.000 cps; y

(ii) 0,1-5% en peso de un polímero modificado con almidón que es un fosfato de almidón de hidroxipropilo de sodio (por ejemplo, los productos Pure Gel® de Grain Processing Corporation, Muscatine, Iowa, tales como aquéllos vendidos bajo las designaciones B990, B992, B994 y B980);

(d) opcionalmente uno o más ingredientes seleccionados del grupo consistente en

(i) micas ($\leq 1,0\%$ en peso, con un tamaño de partícula promedio en el intervalo de 10-125 micras y preferiblemente inferior a 30 micras);

(ii) agentes de suspensión (por ejemplo, 1-3% en peso de Bentone 38 con la adición de un aditivo polar, por ejemplo 0,3-1,0% en peso de carbonato de propileno);

(iii) agentes antimicrobianos (que también pueden ser considerados como un ingrediente cosmético si son usados en una cantidad suficiente para inhibir el crecimiento bacteriano bajo el brazo), por ejemplo, un miembro del grupo consistente en compuestos bacteriostáticos de amonio cuaternario tales como 2-amino-2-metil-1-propanol (AMP), bromuro de cetil-trimetilamonio, cloruro de cetil piridinio, 2,4,4'-tricloro-2'-hidroxidifeniléter (Triclosan), N-(4-clorofenil)-N'-(3,4-diclorofenil)urea (Triclocarban), haluros de plata, octoxiglicerina (Sensiva[™] SC 50); 3,7,11-trimetildodeca-2,6,10-trienol (Farnesol de Dragoco, Totowa, NJ); y varias sales de zinc (por ejemplo, ricinoleato de zinc). El bacteriostato puede ser incluido, de manera ilustrativa, en la composición en una cantidad de 0-5%, particularmente 0,01-1,0% en peso, del peso total de la composición (el Triclosan puede ser incluido de manera ilustrativa en una cantidad de desde 0,05% hasta aproximadamente 0,5% en peso, del peso total de la composición);

(iv) agentes de encubrimiento en una cantidad de 0-5,0% en peso (particularmente 0,05-2%) en peso en base al peso total de la composición, particularmente si se desea un producto no perfumado;

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(v) 0-5% en peso de uno o más polímeros de óxido de etileno, por ejemplo PEG-4, PEG-6, PEG-8, PEG-9, PEG-10, PEG-12, PEG-14, Carbowax PEG-200, Carbowax PEG-300, Carbowax PEG-400, Carbowax PEG 600, particularmente 0,1-1,0% en peso de PEG-12; y

(vi) 0-0,5% en peso de un surfactante soluble en agua que tiene un balance hidrófilo lipófilo ("valor HLB") ≥ 10 (por ejemplo, un miembro del grupo consistente en estearato de sucrosa ceteth-20, oleath-10 (vendido bajo la denominación comercial Volpo 10 por Croda, Inc., Nueva Jersey), oleath-20 (vendido bajo la denominación comercial Volpo 20), cocoato de glicerol de PEG 7, y monolaurato de óxido de etileno de sorbitan 20);

en donde la relación de la fase de aceite a la fase de agua está en el intervalo de 15:85-40:60; y

con lo cual la composición es capaz de formar una emulsión temporalmente estabilizada después de ser sacudida, con un período de estabilidad que no pasa de 24 horas.

DESCRIPCIÓN DETALLADA DE LA INVENCION

Para las siliconas volátiles usadas en esta invención, unos materiales lineales o cíclicos pueden ser usados solos o en combinación. Los siloxanos de metilo volátiles ("VMS" por sus siglas en inglés) lineales tienen la fórmula $(CH_3)_3SiO\{(CH_3)_2SiO\}_ySi(CH_3)_3$. El valor de y es 0-5. Los VMS cíclicos tienen la fórmula $\{(CH_3)_2SiO\}_z$. El valor de z es 3-6. Preferiblemente, estos siloxanos de metilo volátiles son lineales o cíclicos con una viscosidad en el intervalo de 0,5-5 centistokes (la unidad "cst" siendo igual a mm^2/s).

Unos siloxanos de metilo volátiles lineales representativos (I) son hexametildisiloxano (MM) con un punto de ebullición de 100°C, viscosidad de 0,65 mm²/s y fórmula Me₃SiOSiMe₃; octametiltrisiloxano (MDM) con un punto de ebullición de 152°C, viscosidad de 1,04 mm²/s y fórmula Me₃SiOMe₂SiOSiMe₃; decametiltetrasiloxano (MD₂M) con un punto de ebullición de 194°C, viscosidad de 1,53 mm²/s y fórmula Me₃SiO(Me₂SiO)₂SiMe₃; dodecametilpentasiloxano (MD₃M) con un punto de ebullición de 229°C, viscosidad de 2,06 mm²/s y fórmula Me₃SiO(Me₂SiO)₃SiMe₃; tetradecametilhexasiloxano (MD₄M) con un punto de ebullición de 245°C, viscosidad de 2,63 mm²/s y fórmula Me₃SiO(Me₂SiO)₄SiMe₃; y hexadecametilheptasiloxano (MD₅M) con un punto de ebullición de 270°C, viscosidad de 3,24 mm²/s y fórmula Me₃SiO(Me₂SiO)₅SiMe₃.

Unos siloxanos de metilo volátiles cíclicos representativos (II) son hexametilciclotrisiloxano (D₃), un sólido con un punto de ebullición de 134°C y fórmula {(Me₂)SiO}₃; octametilciclotetrasiloxano (D₄) con un punto de ebullición de 176°C, viscosidad de 2,3 mm²/s y fórmula {(Me₂)SiO}₄; decametilciclopentasiloxano (D₅) con un punto de ebullición de 210°C, viscosidad de 3,87 mm²/s y fórmula {(Me₂)SiO}₅; y dodecametilciclohexasiloxano (D₆) con un punto de ebullición de 245°C, viscosidad de 6,62 mm²/s y fórmula {(Me₂)SiO}₆ (un grupo particular de cíclicos incluyendo cicloticonas D5 y D6).

Unos ejemplos particulares de siliconas volátiles adecuadas incluyen Fluido DC-244, Fluido DC-245, Fluido DC-246, Fluido DC-344, Fluido DC-345, Fluido DC 200 (con viscosidad de 0,65 cst) hasta Fluido DC 200 (con viscosidad de 5 cst), y Fluido DC-1184 (una mezcla de siliconas volátiles y no volátiles de bajo peso molecular, la mayoría de las cuales son lineales y

volátiles, dicho material teniendo un punto de ebullición superior a 35 grados y una viscosidad de aproximadamente 1,6 centistokes), los cuales son todos de Dow Corning Corp., y especialmente decametilciclopentasiloxano (Fluido DC-245).

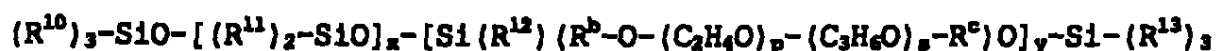
Las siliconas son polisiloxanos organo-sustituídos lineales que son polímeros de silicio/oxígeno con la estructura general:

(1) $(R^{20})_3SiO(Si(R^{21})_2O)_xSi(R^{22})_3$, en donde R^{20} , R^{21} y R^{22} pueden ser iguales o diferentes y cada uno es independientemente seleccionado del grupo consistente en fenilo y alquilo C1-C60;

(2) $HO(R^{24})_2SiO(Si(R^{25})_2O)_xSi(R^{26})_2OH$, en donde R^{24} , R^{25} y R^{26} pueden ser iguales o diferentes y cada uno es independientemente seleccionado del grupo consistente en fenil y alquilo C1-C60;

(unos ejemplos específicos incluyendo dimeticona, behenato de dimeticonol, meticona de alquilo C₃₀₋₄₅, estearoxitrimetilsilano, fenil trimeticona y estearil dimeticona).

En general, los copolíoles de silicona útiles en la presente invención incluyen copolíoles de las siguientes Fórmulas I y II. La Fórmula I es:



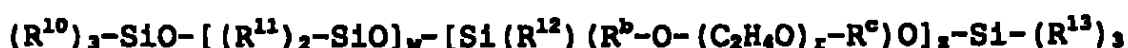
Fórmula I

en la cual R^{10} , R^{11} , R^{12} y R^{13} pueden ser iguales o diferentes y cada uno es seleccionado del grupo consistente en alquilo C1-C6; R^b es el radical $-C_nH_{2n}-$; R^c es un radical de terminación que puede ser hidrógeno, un grupo alquilo C1-C6, un grupo éster tal como acilo, o un grupo arilo tal como fenilo; m tiene un valor en el intervalo de 2-8; p y s tienen unos valores tales que el segmento de oxialquileno $-(C_2H_4O)_p-(C_3H_6O)_s-$ tiene un peso

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molecular en el intervalo de 200-5.000; el segmento teniendo preferiblemente 50-100 por ciento en mol de unidades de oxietileno, $-(C_2H_4O)_p-$, y 1-50 por ciento en mol de unidades de oxipropileno, $-(C_3H_6O)_s-$; x tiene un valor de 8-400; y tiene un valor de 2-40. Preferiblemente cada uno de R^{10} , R^{11} , R^{12} y R^{13} es un grupo metilo; R^c es hidrógeno; m, es 3 o 4 con lo cual el grupo R^b es de mayor preferencia el radical $-(CH_2)_3-$; y los valores de p y s son tales como para proporcionar un peso molecular del segmento de oxialquileno, $-(C_2H_4O)_p-(C_3H_6O)_s-$, en el intervalo de 1.000-3.000. De mayor preferencia p y s son seleccionados para tener un valor en el intervalo de 18-28. La Fórmula II es



Fórmula II

en la cual r tiene un valor en el intervalo de 6-16; w tiene un valor en el intervalo de 6-100; z tiene un valor en el intervalo de 1-20, y las otras porciones tienen la misma definición descrita para la Fórmula I.

Debe quedar entendido que en ambas Fórmulas I y II mostradas anteriormente, los copolímeros de siloxan - oxialquileno de la presente invención pueden, en realizaciones alternativas, tomar la forma de poliéteres de extremos bloqueados en los cuales el grupo de enlace (R^b), los segmentos de oxialquileno y el radical de terminación (R^c) ocupan posiciones unidas a los extremos de la cadena de siloxano, en vez de estar unidos a un átomo de silicio en la cadena de siloxano. Así, uno o más de los sustituyentes R^{10} , R^{11} , R^{12} y R^{13} que están unidos a los dos átomos de silicio terminales en el extremo de la cadena de siloxano pueden ser sustituidos con el

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segmento $-(R^b-O-(C_2H_4O)_p-(C_3H_6O)_s-R^c)$ o con el segmento $-(R^b-O-(C_2H_4O)_x-R^c)$. En algunos casos puede ser conveniente proporcionar el segmento $-(R^b-O-(C_2H_4O)_p-(C_3H_6O)_s-R^c)$ o $-(R^b-O-(C_2H_4O)_x-R^c)$ en lugares que están en la cadena de siloxano así como en lugares en uno o ambos extremos de la cadena de siloxano.

Unos ejemplos particulares de copolios de dimeticona adecuados que están a la disposición en el comercio o experimentalmente a partir de una variedad de proveedores incluyen DOW CORNING® 5225C (de Dow Corning Corporation, Midland, MI) que es un 10% de copoliol de dimeticona en ciclometicona; DOW CORNING® 2-5185C que es un 45-49% de copoliol de dimeticona en ciclometicona; SILWET L-7622 (de Witco Corporation, Greenwich, CT); ABIL EM97 (de Goldschmidt Chemical Corporation, Hopewell, VA) que es un 85% de copoliol de dimeticona en ciclometicona D5; y FPD 4668 (de Shin-Etsu Corporation, Japón) que es un rganopolisiloxano que contiene flúor.

También se debe notar que varias concentraciones de copolios de dimeticona en ciclometicona pueden ser usadas. Aunque una concentración de 10% en ciclometicona (que puede ser D4, D5, D6 o mezclas de las mismas) está frecuentemente a la disposición en el comercio, otras concentraciones pueden ser obtenidas, por ejemplo quitando ciclometicona o añadiendo ciclometicona adicional. Los materiales de concentraciones superiores, tales como DOW CORNING® 2-5185C son particularmente interesantes.

En una realización particular, 0,1-2% (particularmente 0,1-0,5%) de un 10% de copoliol de silicona tal como una mezcla de copoliol de dimeticona en ciclometicona (particularmente una ciclometicona D5 o D6) puede ser usado, en donde la cantidad de la

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tales ésteres. Estos incluyen composiciones de fórmula: fenil- $C(O)OR^{30}$ en donde R^{30} es:

(a) un alquilo ramificado o lineal de 20-28 carbonos; o

(b) $-CH(CH_3)-CH_2(O-CH(CH_3)CH_2)_n-O-R^{31}$, en donde n es 9-16 y R^{31} es un alquilo ramificado o lineal de 3-22 carbonos.

Unos ejemplos más particulares de tales ésteres de benzoato incluyen benzoato de isoestearilo, benzoato de éter de estearilo de PPG-15, benzoato de octildodecilo y benzoato de alquilo C12-15 (por ejemplo, y preferiblemente, FINSOLV TN de Finetex, Inc. (Elmwood Park, NJ)).

Otro grupo particular de tales ésteres incluyen aquéllos comercializados por Finetex bajo las designaciones FINSOLV® TN (benzoato de alquilo C12-15), FINSOLV® SB (benzoato de isoestearilo), FINSOLV® P (benzoato de éter de estearilo de PPG-15), FINSOLV® BOD (benzoato de octildodecilo), FINSOLV® 116 (benzoato de estearilo), FINSOLV® PL-62 (benzoato de poloxámero 182) y FINSOLV® PL-355 (benzoato de poloxámero 105).

El activo antitranspirante puede ser seleccionado del grupo consistente en cualquiera de los materiales activos antitranspirantes conocidos. Estos incluyen, a modo de ejemplo (y no de manera limitativa), clorhidrato de aluminio, cloruro de aluminio, diclorhidrato de aluminio, sesquiclorhidrato de aluminio, hidroxiclорuro de zirconilo, complejo de glicina de aluminio-zirconio (por ejemplo, triclorhidrex glicina de aluminio zirconio, pentaclorhidrex glicina de aluminio zirconio, tetraclorhidrex glicina de aluminio zirconio y octoclorhidrex glicina de aluminio zirconio), clorhidrex PG de aluminio, clorhidrex PEG de aluminio, diclorhidrex PG de aluminio y diclorhidrex PEG de aluminio. Los materiales que contienen

aluminio pueden ser mencionados comúnmente como sales de aluminio activas antitranspirantes. Generalmente los materiales activos antitranspirantes de metal precedentes son sales de metal activas antitranspirantes. En las realizaciones que son composiciones antitranspirantes de acuerdo con la presente invención, tales composiciones no necesitan incluir sales de metal que contienen aluminio, y pueden incluir otros materiales activos antitranspirantes, incluyendo otras sales de metal activas antitranspirantes. Generalmente, los ingredientes antitranspirantes activos de Categoría I indicados en la Monografía de la Food and Drug Administration sobre fármacos antitranspirantes para uso humano sin recípe pueden ser usados. Además, cualquier nuevo fármaco, no indicado en la Monografía, tal como nitratohidrato de aluminio y su combinación con nitruros e hidroxícloruros de zirconilo o clorhidratos de aluminio estañoso, pueden ser incorporados como un ingrediente activo antitranspirante en composiciones antitranspirantes de acuerdo con la presente invención.

Unos tipos particulares de activos antitranspirantes incluyen triclorhidrex de aluminio zirconio y tetraclorhidrex de aluminio zirconio con o sin glicina. Un activo antitranspirante particular es una sal de glicina de aluminio zirconio con eficiencia mejorada debido a una distribución mejorada de las especies moleculares, tal como se describe en la publicación PCT número WO 92/19221, y/o soluciones de tales sales elaboradas con agua y/o propilenglicol.

Los activos antitranspirantes pueden ser incorporados a las composiciones de acuerdo con la presente invención en cantidades en el intervalo de 0,1-25% de la composición final, pero la cantidad usada dependerá de la formulación de la composición. Por

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ejemplo, en cantidades en el extremo inferior del rango más amplio (por ejemplo, 0,1-10% en base a activos), un efecto desodorante puede ser observado. A niveles inferiores el material activo antitranspirante no reducirá sustancialmente el flujo de la transpiración, pero reducirá el mal olor, por ejemplo, actuando como un material antimicrobiano. En cantidades de 10-25% (en base a activos), tales como 15-25% en peso, del peso total de la composición, un efecto antitranspirante puede ser observado.

El glicol o poliglicol es seleccionado del grupo consistente en etilenglicol, propilenglicol, 1,2-propanodiol, dietilenglicol, trietilenglicol, tetraetilenglicol, dipropilenglicol, tripropilenglicol, metil propanodiol, 1,6-hexanodiol, 1,3-butanodiol, 1,4-butanodiol, PEG-4 a PEG-100, PPG-9 a PPG-34, pentilenglicol, neopentil glicol, trimetilpropanodiol, 1,4-ciclohexanodimetanol, 2,2-dimetil-1,3-propanodiol, 2,2,4,4-tetrametil-1,3-ciclobutanodiol y mezclas de los mismos. Unos ejemplos más particulares del componente de glicol incluyen uno o más miembros del grupo consistente en propilenglicol, dipropilenglicol, tripropilenglicol, 2-metil-1,3-propanodiol, metil propilenglicol, polietilenglicol de bajo peso molecular (inferior a 600), glicoles de polipropileno de bajo peso molecular (inferior a 600), y mezclas de cualesquiera de los precedentes. El propilenglicol es particularmente interesante debido a que el activo antitranspirante es más soluble en este tipo de glicol. El tripropilenglicol tiene menor carácter irritante, pero el activo antitranspirante no es tan soluble en este glicol. Unas mezclas de glicoles pueden ser usadas para balancear estas propiedades deseables.

Las composiciones de acuerdo con la presente invención pueden ser elaboradas preparando primero ambas fases por separado y entonces combinándolas en el recipiente final:

Fase no polar - Las siliconas lineales o cíclicas y otros ingredientes no polares son mezclados a temperatura ambiente en un recipiente. Opcionalmente, unas fragancias pueden ser añadidas al final.

Fase polar - En general, todos los ingredientes excepto el Polímero JR (Poliquaternium-10) son mezclados a 300-400 rpm en un cubilete separado para elaborar un producto claro. El Polímero JR es gradualmente añadido a la fase polar con agitación. La mezcla es entonces calentada hasta aproximadamente 40-50°C después de la adición de Polímero JR. La agitación se continúa hasta que la fase polar es transparente. El calor es apagado y se deja que la fase polar se enfríe hasta la temperatura ambiente.

Después de completar el enfriamiento de la fase polar, la fase no polar es añadida sobre la parte superior de la fase polar.

Si se añade un agente colorante, es primero disuelto en una cantidad seleccionada de material polar tal como agua, o en un material no polar tal como éter de miristilo de PPG-3, benzoato de alquilo C12-15 (FINSOLV TN de Finetex, Inc.) y polisiloxanos organo-sustituídos de bajo peso molecular tales como polidimetilsiloxano (por ejemplo, Fluido DC 200 que tiene una viscosidad de 5 centistokes ("cst"); Fluido DC 245 que tiene una viscosidad de 3,87 cst, ambos disponibles de Dow Corning Corp.) y entonces añadido a la fase apropiada.

Cada fase puede ser introducida a unos recipientes dispensadores conocidos por aquéllos versados en el arte para productos de helita. El producto del depósito llena a la

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superficie giratoria superior del recipiente dispensador, y de ahí puede ser aplicado a la piel en las regiones de la axila para depositar suficientes cantidades de material activo antitranspirante y/o desodorante para reducir el mal olor corporal y/o reducir la transpiración en las regiones de la axila del cuerpo humano.

Los componentes de los recipientes de bolita convencionales pueden ser elaborados a partir de varios materiales y pueden tener formas diferentes. El material del recipiente puede ser polipropileno, tereftalato de polietileno (PET por sus siglas en inglés), polietileno de alta densidad o vidrio. El aplicador es usualmente una bola hueca elaborada a partir de polipropileno. El diámetro puede variar desde 10,4 hasta 35,5 mm, dependiendo del diseño del recipiente. La bola puede ser ensamblada directamente en el recipiente o con un inserto especial (envoltura de bola) dependiendo también del diseño del recipiente. Las tapas pueden tener diferentes diseños (usualmente elaboradas a partir de polipropileno) con paredes lisas o acanaladas.

Unos ejemplos de dispensadores de bolita adecuados incluyen aquéllos descritos en la Patente de Diseño de EE.UU. 402.550 de Poisson; EE.UU. 6.132.126 de Sheffer et al. (un aplicador ajustable); EE.UU. 4.030.844 de Lench et al.; Patente de EE.UU. 4.021.125 de Berghahn et al.; Patente de EE.UU. 4.033.700 de Spatz; Patente de EE.UU. 5.553.957 de Dornbusch et al.; WO 00/64302 de Hindustan Lever Ltd.; y WO 01/03541 de Chang; las cuales son todas incorporadas en la presente por referencia en la medida que describan dispensadores de bolita. Estas referencias también incluyen el uso de sílice humeada.

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La invención puede ser considerada de varias formas. Por ejemplo, una forma de la invención tiene una fase no polar de baja viscosidad (inferior a 20 cps) y está libre de sílice humeada y arcillas. Alternativamente, otra elección para esta primera realización es una composición libre de arcilla pero que puede contener sílice. Una segunda realización tiene una fase no polar elaborada con (a) 5-30% de una ciclometicona o 5-25% de ciclometicona y hasta 5% de dimeticona (en donde la dimeticona tiene una viscosidad inferior a 5 cst); y (b) 1-10% de un emoliente lipófilo de baja viscosidad (especialmente benzoato de alquilo C12-15 o éter de miristilo de PPG-3). Una tercera realización tiene una fase no polar elaborada con (a) 5-20% de una ciclometicona y hasta 10% de dimeticona (en donde la dimeticona tiene una viscosidad inferior a 5 cst); y (b) 1-10% de un emoliente lipófilo de baja viscosidad (especialmente benzoat de alquilo C12-15 o éter de miristilo de PPG-3). Una cuarta realización tiene una fase no polar elaborada con (a) 5-30% de una ciclometicona o 5-25% de ciclometicona y 5% de dimeticona (en donde la dimeticona tiene una viscosidad inferior a 5 cst); (b) 1-8% de un emoliente lipófilo de baja viscosidad (especialmente benzoato de alquilo C12-15 o éter de miristilo de PPG-3 o un hidrocarburo C6-20 no polar (especialmente uno con un grupo "iso")). Una quinta realización es igual a la cuarta realización y adicionalmente está libre de sílice y arcilla. Una sexta realización puede ser elaborada con cualquiera de las realizaciones precedentes en la fase no polar y una fase polar elaborada con 1-10% de etanol anhidro y hasta 10% de un glicol como se definió anteriormente (especialmente propilenglicol).

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Unos ejemplos de varias formas de la invención pueden ser dados por las siguientes formulaciones, pero éstas no deben ser consideradas como limitaciones de la invención. Nótese que todas las formulaciones tienen las viscosidades indicadas.

Formulación 1-L

fase no polar (viscosidad inferior a 20 cps)

10-25% en peso de pseudo-silicona (mezcla de aceite mineral, ácido dodecanoico, éster dodecilico, ácido hexadecanoico, éster octadecilico, ácido docosanoico, éster octadecilic de Strahl & Pitsch Inc., West Babylon, NY)

1-2% en peso de ciclometicona (Fluido 245 de Dow Corning)

1-3% en peso de polibuteno (Amoco Corp.)

1-10% en peso de éter de miristilo de PPG-3 (Croda Oleochemicals Inc.)

opcionalmente 0,5-1,0% en peso de fragancia.

fase polar

45-58% en peso de tetraclorhidrex glicina de Al Zr (30% en agua (Z-522 de Summit))

0,1-0,5% en peso de Poliquaternium-10 (Celquat SC 240 C)

2-10% en peso de agua

opcionalmente 1-10% en peso de etanol

Formulación 2-M

fase no polar (viscosidad inferior a 200 cps)

0,5-1% en peso de Cab-O-Sil (sílice coloidal amorfa modificada de manera hidrófoba, Cabot Corp.)

2-20% en peso de ciclometicona (Fluido DC 245)

10-26% en peso de dimeticona de Dow Corning Corp.

opcionalmente 0,5-1,0% en peso de fragancia.

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fase polar

45-58% en peso de tetraclorhidrex glicina de Al Zr (30% en agua
(Z-522 de Summit))

0,1-0,5% en peso de Poliquaternium-10 (Celquat SC 240 C)

2-10% en peso de agua

opcionalmente 1-10% en peso de etanol

Formulación 3-AA

fase no polar (viscosidad inferior a 20 cps)

10-20% en peso de ciclometicona

0,05-0,5% en peso de surfactante no iónico (por ejemplo,
Emulsogen SRO de Clariant Co., Wayne, NJ)

0,5-1,0% en peso de fragancia

0-5% en peso de emoliente (tal como éter de miristilo de PPG-3
de Goldschmidt, Hopewell, VA)

fase polar

50-70% en peso (29% activo en agua) de activo antitranspirante

10-15% en peso de alcohol/glicol (1-10% de etanol anhidro + 0-
10% de propilenglicol)

1-10% en peso de agua

0,1-0,3% en peso de espesador Polímero JR (Poliquaternium-10
de Amerchol, Edison, NJ)

Formulación 4-BB

fase no polar (viscosidad inferior a 20 cps)

20-30% en peso de ciclometicona (Fluido DC 245 de Dow Corning,
Midland, MI)

0,05-0,2% en peso de surfactante de silicona fluorada (p r
ejemplo, FPD 4668 de Shin-Etsu Co., Japón)

0,5-1,0% en peso de fragancia

0-5% en peso de emoliente (tal como éter de miristilo de PPG-3)

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fase polar

50-60% en peso (29% activo en agua) de activo antitranspirante

5-15% en peso de alcohol/glicol (1-10% de etanol anhidro + 0-10% de propilenglicol)

1-10% en peso de agua

0,1-0,3% en peso de espesador (Polímero JR)

Formulación 5-CC

fase no polar (viscosidad inferior a 20 cps)

20-35% en peso de ciclometicona/dimeticona (10-35% de ciclometicona D5 + 0-10% de dimeticona (< 5 cst))

0,01-0,05% en peso de surfactante de silicona (por ejemplo, 5225C, 10% en ciclometicona, de Dow Corning)

0,5-1,0% en peso de fragancia

0-5% en peso de emoliente (tal como FINSOLV TN de Finetex Inc., Elmwood Park, NJ)

fase polar

50-60% en peso (29% activo en agua) de activo antitranspirante

5-15% en peso de alcohol/glicol (1-10% de etanol anhidro + 0-10% de propilenglicol)

1-10% en peso de agua

0,1-0,3% en peso de espesador (Polímero JR)

Formulación 6-FF

fase no polar (viscosidad inferior a 20 cps)

10-15% en peso de ciclometicona/dimeticona (5-15% de ciclometicona D5 + 0-10% de dimeticona (< 5 cst))

0,01-0,05% en peso de surfactante de silicona (por ejemplo, 5225C, 10% en ciclometicona, de Dow Corning)

0,5-1,0% en peso de fragancia

0-5% en peso de emoliente (tal como FINSOLV TN)

fase polar

60-70% en peso (29% activo en agua) de activo antitranspirante
10-20% en peso de alcohol/glicol (2-10% de etanol anhidro + 0-10% de propilenglicol)
1-10% en peso de agua
0,1-0,5% en peso de espesador (Polímero JR)

Formulación 7-GG

fase no polar (viscosidad inferior a 20 cps)

10-20% en peso de ciclometicona/dimeticona (5-10% de ciclometicona D5 + 0-10% de dimeticona (< 5 cst))
0,5-1,0% en peso de fragancia
1-10% en peso de emoliente (tal como éter de miristilo PPG-3)

fase polar

50-70% en peso (29% activo en agua) de activo antitranspirante
10-20% en peso de alcohol/glicol (2-10% de etanol anhidro + 0-10% de propilenglicol)
1-10% en peso de agua
0,1-0,5% en peso de espesador (Polímero JR)

Formulación 8-HH

fase no polar (viscosidad inferior a 20 cps)

20-30% en peso de ciclometicona/dimeticona (10-30% de ciclometicona D5 + 0-10% de dimeticona (< 5 cst))
0,05-0,2% en peso de surfactante de silicona (por ejemplo, 5225C, 10% en ciclometicona, de Dow Corning)
0,5-1,5% en peso de fragancia
0-5% en peso de emoliente (tal como FINSOLV TN)

fase polar

50-60% en peso (29% activo en agua) de activo antitranspirante

5-15% en peso de alcohol/glicol (0-10% de etanol anhidro + 3-10% de propilenglicol)

1-10% en peso de agua

1-4% en peso de espesador (Puregel 990, de Grain Processing Co., Iowa)

EJEMPLOS

Los siguientes ejemplos son ofrecidos como ilustrativos de la invención y no deben ser considerados como limitaciones de la misma. En los Ejemplos y en cualquier otra parte en la descripción de la invención, los símbolos químicos y la terminología tienen sus significados usuales y acostumbrados. Los números para las viscosidades y los pesos moleculares son promedios. En los Ejemplos, al igual que en cualquier otra parte en esta solicitud, (a) los valores para n, m, etc. en las fórmulas, los pesos moleculares y el grado de etoxilación o propoxilación son promedios; (b) las temperaturas están en grados C a menos que se indique lo contrario; y (c) las cantidades de los componentes están en porcentajes en peso en base al patrón descrito; si no se describe otro patrón entonces el peso total de la composición debe ser inferido. Varios nombres de componentes químicos incluyen aquéllos indicados en el Diccionario Internacional de Ingredientes Cosméticos de la CTFA (Cosmetics, Toiletry and Fragrance Association, Inc., 7ª ed., 1997). Las técnicas de mezclado usadas para elaborar las composiciones son aquéllas usadas convencionalmente en el arte, incluyendo aquéllas descritas anteriormente.

Ejemplos 1-9: Método General para Elaborar las Composiciones

Las composiciones de acuerdo con la presente invención, según se observan en los Ejemplos 1-9, pueden ser elaboradas

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como sigue usando las cantidades y tipos de ingredientes indicados bajo el número de Ejemplo apropiado. El porcentaje total para cada Ejemplo es 100%.

Fase no polar - Todos los ingredientes para la Parte A son combinados en un cubilete y la mezcla es agitada a 300-400 rpm usando una Mezcladora Lightnin Modelo L 1003 hasta que se obtiene una solución homogénea.

Fase polar - Los ingredientes para la fase polar son combinados con agitación. Si la fase polar contiene un almidón modificado (tal como fosfato de almidón de hidroxipropilo), éste debe ser dispersado previamente en una pequeña parte de la solución de activo antitranspirante. El material dispersado previamente es entonces añadido al resto de la solución de activo antitranspirante con agitación y la mezcla es calentada para estar a 85-95°C. Si la fase polar contiene Poliquaternium-10, éste es dispersado previamente en el activo para formar una dispersión homogénea libre de grumos. La mezcla es entonces calentada hasta una temperatura en el intervalo de 40-50°C con agitación hasta obtener una solución clara. Si la formulación final contiene un colorante, éste debe ser disuelto en la mínima cantidad de agua y entonces añadido en la fase polar.

Combinación de las fases en un recipiente

Cada fase es vertida al recipiente en las relaciones indicadas en la composición final. No hay un orden especial de adición al recipiente. La fase polar tenderá a ir al fondo.

El método descrito anteriormente puede ser usado para elaborar las siguientes composiciones en las cuales todas las cantidades son en % en peso en base al peso total de la composición. Para estos Ejemplos la ciclometicona es DC 245

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de Dow Corning; el surfactante es un surfactante de silicona fluorada Shin-Etsu FPD-4668 de Shin-Etsu Silicones of America (Akron, Ohio) o Copoliol de dimeticona/ciclometicona 5225C (10%) de Dow Corning; el emulsor es un éster de sorbitol de aceite de colza (Emulsogen SRO de Clariant Corp., Alemania); el fluido de silicona es un dimetil polisíloxano tal como Fluido DC200, 200 cst de Dow Corning, Midland, Michigan; el poliisobuteno hidrogenado 250 es un hidrocarburo ramificado de Fanning Corp., Illinois; el activo antitranspirante es tetraclorhidrex glicina de Al-Zr con una relación metal:cl ruro en el intervalo de 0,9:1-1,2:1 como se describe en la Patente de EE.UU. 6.375.937 (obtenida de Summit Research Laboratories, Huguenot, NY); una sal de amonio cuaternario polimérico de hidroxietil celulosa reaccionada con un epóxido sustituido con trimetil amonio (Polímero JR de Amerchol); un polímero basado en almidón modificado, fósforo de almidón de hidroxipropilo de sodio (PureGel 990 de Grain Processing Corp.); y Oleath-10 (Volpo 10 de Croda, Inc., Parsippany, Nueva Jersey).

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Tabla A

Ejemplo	1	2	3	4	5	6	7	8	9
Parte A									
Ciclotetrasiloxano	16,10	25,90	12,00	16,20	18,99	11,7	15,00	26,99	16,30
Copolíol de dimeticona	0	0	0,02	0	0,01	0	0	0,01	0
Shin-Etsu FPD-4660	0	0,1	0	0	0	0	0	0	0
Emulsogen SMO	0,10	0	0	0	0	0	0	0	0
Éter de miristilo de PPG-3	3,00	3,00	0	3,00	0	2,5	2,00	2,00	2,80
Fluido de silicona	0	0	16,98	0	20,00	0	0	0	0
Poliisobuteno hidrogenado 250	0	0	0	0	0	0	2,20	0	0
Fragancia	0,80	1,00	1,00	0,80	1,00	0,80	0,80	1,00	0,80
Parte B									
Activo AP (28% en agua)	67,00	55,00	55,00	70,50	50,00	66	60	55,60	65,98
Propilenglicol	4,00	0	0	5,00	0	0	0	0	9,70
Tripropilenglicol	0	0	0	0	0	9	7	0	0
Polímero JR	0,20	0,20	0,20	0,20	0,20	0,30	0,25	0	0,40
Alcohol (100%)	8,80	9,80	9,80	4,30	4,80	5	9	9,00	0
PureGel 990	0	0	0	0	0	0	0	2,40	0
Agua adicional	0	5,00	5,00	0	5,00	4,70	3,75	3,00	4,00
Oleath-10	0	0	0	0	0	0	0	0	0,02
Total	100	100	100	100	100	100	100	100	100
Contenido total de agua	48,24	44,6	44,6	50,8	41	52,2	46,9	43,03	51,5
Aceite:Agua	20:80	30:70	30:70	20:80	40:60	15:85	20:80	30:70	20:80

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REIVINDICACIONES

1. Una composición antitranspirante y/o desodorante de b lita de dos fases, libre de elastómeros, de baja viscosidad y alto contenido de agua, que comprende:

(A) una fase no polar que tiene una viscosidad de hasta 200 centipoise y que comprende:

(a) 0,1-40% en peso de una silicona volátil y/o una silicona no volátil seleccionada del grupo consistente en polisiloxanos organo-sustituidos lineales y cíclicos en los cuales la viscosidad es inferior a 5 centistokes para las siliconas volátiles y está en el intervalo de 5-20 centistokes para las siliconas no volátiles;

(b) 0-25% en peso de un polímero de hidrocarburo de cadena lineal o ramificada que tiene un peso molecular promedio en el intervalo de 450-6000 daltons;

(c) 0-15% en peso de uno o más emolientes lipófilos de baja viscosidad seleccionados del grupo consistente en:

(i) 0-10% en peso de un hidrocarburo no polar que tiene 4-30 carbonos;

(ii) 0-10% en peso de un éster de ácido benzoico seleccionado del grupo consistente en ésteres de benzoato C12-C20;

(iii) 0-8% en peso de un alcohol graso propoxilado que tiene 4-16 carbonos y 2-14 moles de propoxilación;

(d) opcionalmente uno o más ingredientes seleccionados del grupo consistente en

(i) 0-0,2% en peso de un surfactante de silicona que tiene un balance hidrófilo lipófilo ≤ 13 ;

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(ii) 0-2% en peso de sílice humeada coloidal amorfa tratada de manera hidrófoba;

(iii) 0-2% en peso de fragancia;

(iv) 0-1,00% en peso de vitaminas; y

(v) 0,0-0,002% en peso de agente colorante; y

(B) una fase polar que tiene una viscosidad en el intervalo de 10-2.000 centipoise y que comprende:

(a) por lo menos 5% en peso de un activo antitranspirante;

(b) un componente acuoso que comprende por lo menos 40% de agua y una cantidad suficiente de un alcohol C2-3, un glicol un alcohol polihídrico, de modo que el activo antitranspirante se disuelva en el componente acuoso;

(c) un agente de espesamiento seleccionado del grupo consistente en:

(i) 0,05-2,5% en peso de un derivado catiónico soluble en agua seleccionado del grupo consistente en hidroxietil celulosa y sus copolímeros e hidroxipropil celulosa y sus copolímeros, a condición de que la viscosidad de la fase polar no pase de 2.000 cps; y

(ii) 0,1-5% en peso de un polímero modificado con almidón que es un fosfato de almidón de hidroxipropilo de sodio;

(d) opcionalmente uno o más ingredientes seleccionados del grupo consistente en

(i) 0-1,0% en peso de mica con un tamaño de partícula promedio en el intervalo de 10-125 micras;

(ii) una cantidad efectiva de un agente de suspensión;

(iii) una cantidad efectiva de un agente antimicrobiano;

(iv) 0-5,0% en peso de un agente de encubrimiento;

(v) 0-1,0% en peso de un polímero de óxido de etileno;

y

(vi) 0-0,5% en peso de un surfactante soluble en agua

que tiene un balance hidrófilo lipófilo ("valor HLB") ≥ 10 ; en donde la relación de la fase de aceite a la fase de agua está en el intervalo de 15:85-40:60; y con lo cual la composición es capaz de formar una emulsión temporalmente estabilizada después de ser sacudida, con un período de estabilidad que no pasa de 24 horas.

2. Una composición de acuerdo con la Reivindicación 1, que está libre de arcilla.

3. Una composición de acuerdo con la Reivindicación 1, que está libre de arcilla y está libre de sílice.

4. Una composición de acuerdo con la Reivindicación 1, en la cual el período no pasa de 15 horas.

5. Una composición de acuerdo con la Reivindicación 1, en la cual el período está en el intervalo de 1-20 minutos.

6. Una composición de acuerdo con la Reivindicación 1, que comprende 5-30% en peso de un polisiloxano organo-sustituido lineal o cíclico que tiene una viscosidad inferior a 20 centistokes.

7. Una composición de acuerdo con la Reivindicación 1, que comprende 1-10% en peso del polímero de hidrocarburo.

8. Una composición de acuerdo con la Reivindicación 1 o 7, que comprende 1-10% en peso de emolientes lipófilos.

9. Una composición de acuerdo con la Reivindicación 1, que comprende 1-10% en peso de los emolientes lipófilos, en donde los emolientes lipófilos son seleccionados del grupo

consistente en: (i) 1-8% en peso de hidrocarburo no polar; (ii) 1-8% en peso de ésteres del ácido benzoico; y (iii) 4-6% en peso de alcohol graso propoxilado.

10. Una composición de acuerdo con la Reivindicación 1, que comprende adicionalmente 0,001-0,01% en peso de surfactante de silicona.

11. Una composición de acuerdo con la Reivindicación 1, que comprende adicionalmente 0,1-1% en peso de sílice humeada coloidal amorfa tratada de manera hidrófoba.

12. Una composición de acuerdo con la Reivindicación 1, que comprende 40-70% en peso de agua y hasta 20% en peso de un más miembros seleccionados del grupo consistente en alcohol etílico, alcohol isopropílico, un glicol seleccionado del grupo consistente en propilenglicol, dipropilenglicol, tripropilenglicol y metil propilenglicol, y mezclas de cualesquiera de los precedentes.

13. Una composición de acuerdo con la Reivindicación 1, que comprende:

10-27% en peso de pseudo-silicona como una mezcla de aceite mineral, ácido dodecanoico, éster dodecílico, ácido hexadecanoico, éster octadecílico, ácido docosanoico, éster octadecílico;

1-2% en peso de ciclometicona;

1-3% en peso de polibuteno;

1-10% en peso de éter de miristilo de PPG-3;

45-58% en peso de tetraclorhidrex glicina de Al/Zr como 30% en agua o su equivalente;

0,1-0,5% en peso de Poliquaternium-10;

2-10% en peso de agua adicional;

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opcionalmente 1-10% en peso de etanol; y
opcionalmente 0,5-1,0% en peso de fragancia.

14. Una composición de acuerdo con la Reivindicación 1, que comprende:

0,5-1% en peso de sílice coloidal amorfa modificada de manera hidrófoba;

2-20% en peso de ciclometicona;

10-28% en peso de dimeticona que tiene una viscosidad de 20 cst;

45-58% en peso de tetraclorhidrex glicina de Al 2r como 30% en agua o su equivalente;

0,1-0,5% en peso de Poliquaternium-10;

2-10% en peso de agua adicional;

opcionalmente 1-10% en peso de etanol; y

opcionalmente 0,5-1,0% en peso de fragancia.

15. Una composición de acuerdo con la Reivindicación 1, que comprende:

10-20% en peso de ciclometicona;

0,05-0,5% en peso de surfactante no iónico;

50-70% en peso de activo antitranspirante como 29% de activo en agua o su equivalente;

10-15% en peso de mezcla de alcohol/glicol como 1-10% de etanol anhidro + 0-10% de propilenglicol;

1-10% en peso de agua adicional;

0,3-1% en peso de Poliquaternium-10;

0,5-1,0% en peso de fragancia; y

0-5% en peso de emoliente.

16. Una composición de acuerdo con la Reivindicación 1, que comprende:

20-30% en peso de ciclometicona;

0,05-0,2% en peso de surfactante de silicona fluorada;

50-60% en peso de activo antitranspirante como 29% de activo en agua o su equivalente;

5-15% en peso de mezcla de alcohol/glicol como 1-10% de etanol anhidro + 0-10% de propilenglicol;

1-10% en peso de agua adicional;

0,1-0,3% en peso de Poliquaternium-10;

0,5-1,0% en peso de fragancia; y

0-5% en peso de emoliente.

17. Una composición de acuerdo con la Reivindicación 1, que comprende:

20-35% en peso de ciclometicona/dimeticona como una mezcla de 10-35% de ciclometicona D5 + 0-10% de dimeticona con una viscosidad de < 5 cst;

0,01-0,05% en peso de surfactante de silicona;

50-60% en peso de activo antitranspirante como 29% de activo en agua o su equivalente;

5-15% en peso de mezcla de alcohol/glicol como 1-10% de etanol anhidro + 0-10% de propilenglicol;

1-10% en peso de agua adicional;

0,1-0,3% en peso de Poliquaternium-10;

0,5-1,0% en peso de fragancia; y

0-5% en peso de emoliente.

18. Una composición de acuerdo con la Reivindicación 1, que comprende:

10-15% en peso de ciclometicona/dimeticona como una mezcla de 5-15% de ciclometicona D5 + 0-10% de dimeticona con una viscosidad de < 5 cst;

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70

0,01-0,05% en peso de surfactante de silicona;

60-70% en peso de activo antitranspirante como 29% de activo en agua o su equivalente;

10-20% en peso de mezcla de alcohol/glicol como 2-10% de etanol anhidro + 0-10% de propilenglicol;

1-10% en peso de agua adicional;

0,1-0,5% en peso de Poliquaternium-10;

0,5-1,0% en peso de fragancia; y

0-5% en peso de emoliente.

19. Una composición de acuerdo con la Reivindicación 1, que comprende:

10-20% en peso de ciclometicona/dimeticona como una mezcla de 5-10% de ciclometicona D5 + 0-10% de dimeticona con una viscosidad de < 5 cst;

50-70% en peso de activo antitranspirante como 29% de activo en agua o su equivalente;

10-20% en peso de mezcla de alcohol/glicol como 2-10% de etanol anhidro + 0-10% de propilenglicol;

1-10% en peso de agua adicional;

0,1-0,5% en peso de espesador;

0,5-1,0% en peso de fragancia; y

1-10% en peso de emoliente.

20. Una composición de acuerdo con la Reivindicación 1, que comprende:

10-30% en peso de ciclometicona/dimeticona como una mezcla de 10-30% de ciclometicona D5 + 0-10% de dimeticona con una viscosidad de < 5 cst;

0,05-0,2% en peso de surfactante de silicona;

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50-60% en peso de activo antitranspirante como 29% de activo en
agua o su equivalente;

5-15% en peso de mezcla de alcohol/glicol como 0-10% de etan l
anhidro + 3-10% de propilenglicol;

1-10% en peso de agua adicional;

1-4% en peso de espesador;

0,5-1,5% en peso de fragancia; y

0-5% en peso de emoliente.

PATENT COOPERATION TREATY

AS: 98471

TLR

From the
INTERNATIONAL PRELIMINARY EXAMINING AUTHORITY

PCT 72 *77*

To:

PARK, Ellen K.
COLGATE-PALMOLIVE COMPANY
909 River Road
P.O. Box 1343
Piscataway, New Jersey 08855-1343
ETATS-UNIS D'AMERIQUE

APR 11 2005

NOTIFICATION OF TRANSMITTAL OF
THE INTERNATIONAL PRELIMINARY
REPORT ON PATENTABILITY
(PCT Rule 71.1)

Date of mailing
(day/month/year) 05.04.2005

Applicant's or agent's file reference
8789-00

IMPORTANT NOTIFICATION

International application No.
PCT/US2004/001218

International filing date (day/month/year)
16.01.2004

Priority date (day/month/year)
17.01.2003

Applicant
COLGATE-PALMOLIVE COMPANY

1. The applicant is hereby notified that this International Preliminary Examining Authority transmits herewith the international preliminary report on patentability and its annexes, if any, established on the international application.
2. A copy of the report and its annexes, if any, is being transmitted to the International Bureau for communication to all the elected Offices.

3. Where required by any of the elected Offices, the International Bureau will prepare an English translation of the report (but not of any annexes) and will transmit such translation to those Offices.

4. REMINDER

The applicant must enter the national phase before each elected Office by performing certain acts (filing translations and paying national fees) within 30 months from the priority date (or later in some Offices) (Article 39(1)) (see also the reminder sent by the International Bureau with Form PCT/AB/501).

Where a translation of the international application must be furnished to an elected Office, that translation must contain a translation of any annexes to the international preliminary report on patentability. It is the applicant's responsibility to prepare and furnish such translation directly to each elected Office concerned.

For further details on the applicable time limits and requirements of the elected Offices, see Volume II of the PCT Applicant's Guide.

The applicant's attention is drawn to Article 33(5), which provides that the criteria of novelty, inventive step and industrial applicability described in Article 33(2) to (4) merely serve the purposes of international preliminary examination and that "any Contracting State may apply additional or different criteria for the purposes of deciding whether, in that State, the claimed inventions is patentable or not" (see also Article 27(5)). Such additional criteria may relate, for example, to exemptions from patentability, requirements for enabling disclosure, clarity and support for the claims.

Name and mailing address of the international preliminary examining authority:



European Patent Office
D-80288 Munich
Tel. +49 89 2399 - 0 Tlx 523856 epmu d
Fax +49 89 2399 - 4465

Authorized Officer

Hick, N
Tel. +49 89 2399-7736





PCT

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY
(Chapter II of the Patent Cooperation Treaty)

(PCT Article 36 and Rule 70)

7A
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Applicant's or agent's file reference 6789-00	FOR FURTHER ACTION See Form PCT/PEA/16	
International application No. PCT/US2004/001218	International filing date (day/month/year) 16.01.2004	Priority date (day/month/year) 17.01.2003
International Patent Classification (IPC) or national classification and IPC A61K7/00, A61K7/32		
Applicant COLGATE-PALMOLIVE COMPANY		
1. This report is the international preliminary examination report, established by this International Preliminary Examining Authority under Article 35 and transmitted to the applicant according to Article 36. 2. This REPORT consists of a total of 5 sheets, including this cover sheet. 3. This report is also accompanied by ANNEXES, comprising: a. ☐ sent to the applicant and to the International Bureau a total of sheets, as follows: ☐ sheets of the description, claims and/or drawings which have been amended and are the basis of this report and/or sheets containing rectifications authorized by this Authority (see Rule 70.16 and Section 807 of the Administrative Instructions). ☐ sheets which supersede earlier sheets, but which this Authority considers contain an amendment that goes beyond the disclosure in the international application as filed, as indicated in item 4 of Box No. I and the Supplemental Box. b. ☐ (sent to the International Bureau only) a total of (indicate type and number of electronic carrier(s)) , containing a sequence listing and/or tables related thereto, in computer readable form only, as indicated in the Supplemental Box Relating to Sequence Listing (see Section 802 of the Administrative Instructions).		
4. This report contains indications relating to the following items: ☒ Box No. I Basis of the opinion ☐ Box No. II Priority ☐ Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability ☐ Box No. IV Lack of unity of invention ☒ Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement ☐ Box No. VI Certain documents cited ☐ Box No. VII Certain defects in the international application ☒ Box No. VIII Certain observations on the international application		
Date of submission of the demand 17.11.2004	Date of completion of this report 05.04.2005	
Name and mailing address of the international preliminary examining authority:  European Patent Office D-80289 Munich Tel. +49 89 2369 - 0 Tlx: 523656 epmu d Fax: +49 89 2369 - 4485	Authorized Officer Mitchell, G Telephone No. +49 89 2369-6678 	

**INTERNATIONAL PRELIMINARY REPORT
ON PATENTABILITY**

International application No.
PCT/US2004/001218

Box No. I Basis of the report

1. With regard to the language, this report is based on the international application in the language in which it was filed, unless otherwise indicated under this item.
- ☐ This report is based on translations from the original language into the following language, which is the language of a translation furnished for the purposes of:
- ☐ international search (under Rules 12.3 and 23.1(b))
 - ☐ publication of the international application (under Rule 12.4)
 - ☐ international preliminary examination (under Rules 55.2 and/or 55.3)
2. With regard to the elements* of the international application, this report is based on *(replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report)*:

Description, Pages

1-20 as originally filed

Claims, Numbers

1-20 as originally filed

- ☐ a sequence listing and/or any related table(s) - see Supplemental Box Relating to Sequence Listing
3. ☐ The amendments have resulted in the cancellation of:
- ☐ the description, pages
 - ☐ the claims, Nos.
 - ☐ the drawings, sheets/figs
 - ☐ the sequence listing (specify):
 - ☐ any table(s) related to sequence listing (specify):
4. ☐ This report has been established as if (some of) the amendments annexed to this report and listed below had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).
- ☐ the description, pages
 - ☐ the claims, Nos.
 - ☐ the drawings, sheets/figs
 - ☐ the sequence listing (specify):
 - ☐ any table(s) related to sequence listing (specify):

* If item 4 applies, some or all of these sheets may be marked "superseded."

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**INTERNATIONAL PRELIMINARY REPORT
N PATENTABILITY**

International application No.
PCT/US2004/001218

Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Yes: Claims	1-20
	No: Claims	
Inventive step (IS)	Yes: Claims	1-20
	No: Claims	
Industrial applicability (IA)	Yes: Claims	1-20
	No: Claims	

2. Citations and explanations (Rule 70.7):

see separate sheet

Box No. VIII Certain observations on the International application

The following observations on the clarity of the claims, description, and drawings or on the question whether the claims are fully supported by the description, are made:

see separate sheet

**INTERNATIONAL PRELIMINARY
REPORT ON PATENTABILITY
(SEPARATE SHEET)**

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International application No.

PCT/US2004/001218

Re Item V

Reasoned statement with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

Reference is made to the following documents:

D1: US 2002/155078 A1 (URRUTIA-GUTIERREZ ADRIANA ET AL) 24 October 2002 (2002-10-24)

D2: US-A-5 393 518 (KWASS JILL A) 28 February 1995 (1995-02-28)

The present application is for a two-phase antiperspirant and/or deodorant composition comprising (A) a non-polar phase which comprises (a) 0.1-40 weight % of a volatile and/or a nonvolatile silicone selected from linear and cyclic organo-substituted polysiloxanes and (B) a polar phase comprising; (a) at least 5 weight % of an antiperspirant active; (b) aqueous component comprising at least 40 % water and a sufficient amount of alcohol (C2-3), glycol or polyhydric alcohol to solubilise the antiperspirant; and (c) a thickening agent (as defined in claim 1).

D1, the closest prior art, discloses a two-phase roll-on cosmetic that differs from that of the present application in that the non-polar phase comprises a cross-linked or partially cross-linked non-emulsifying elastomer (paragraph 0023- 0042).

D2 discloses a clear roll-on antiperspirant composition (see examples 1-5) which differ from that defined in claim 1 in the absence of a thickening agent.

Thus, novelty can presently be acknowledged (Art. 33(2) PCT).

In view of the prior art the technical problem of the present application is the provision of an alternative roll-on composition.

The feature of the composition of the present application of being elastomer-free has been proven to have improved antiperspirant release activity (technical data in support of this activity have been provided, which will remain on file and which will need to be resubmitted in the regional phase). Moreover, D2 concerns a water-in-oil emulsion which is a one

phase clear antiperspirant. The antiperspirant active is present in the water phase and in order to be released the stable emulsion must become sufficiently unstable to allow the water droplets to break and release the active. The present application is for a two phase system which is far less stable than the emulsion of D2.

Thus, the requirements of inventive step (Art. 33(3) PCT) are considered to have been met.

Re Item VIII

Certain observations on the international application

1. Claim 1- "whereby the composition is able to form a temporarily stabilised emulsion after shaking for a period not exceeding 24 hours": Claim 4: "wherein the period does not exceed 15 hours": and claim 5- "wherein the period is in the range of 1-20 minutes": are defined by results to be achieved and as such are considered to be unclear (Art. 6 PCT).
2. Claims 13, 14, 20 comprise discrepancies between the claims and the description which render the subject-matter unclear (Art. 6 PCT):
Claim 13: "10-27 weight % pseudo silicone"; and "2-10 weight % additional", should probably be followed by "water".
Claim 14: "10-28 weight % dimethicone"
Claim 20: "10-30 weight % cyclomethicone/dimethicone"; and "50-60 weight % as 29% active in water" should probably comprise "antiperspirant".
3. The term "incorporated herein by reference" is used in the description. If the documents mentioned are to be incorporated, the disclosure thereof should be included expressis verbis in the description under the conditions set out in the PCT Guidelines C-II, 4.18 or the phrase "incorporated herein by reference" should be deleted.

TRATADO DE COOPERACIÓN DE PATENTES

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Remitente:

OFICINA ENCARGADA DEL EXAMEN PRELIMINAR INTERNACIONAL

A:

PARK, ELLEN, K.
Colgate-Palmolive Company
909 River Road
P. O. Box 1343
Piscataway, NJ 08855-1343
ESTADOS UNIDOS DE AMERICA

PCT

NOTIFICACION DE TRANSMISION DEL INFORME DEL EXAMEN PRELIMINAR INTERNACIONAL

(Regla 71.1 PCT)

Fecha de envío
(Día/Mes/Año)

05.04.2005

No. de Expediente del Solicitante o Apoderado

6789-00

COMUNICACIÓN IMPORTANTE

No. de Solicitud Internacional

PCT/US2004/001218

Fecha Internacional de Presentación (día/mes/año)

16.01.2004

Fecha de Prioridad (día/mes/año)

17.01.2003

Solicitante

COLGATE-PALMOLIVE COMPANY

1. Se comunica al solicitante que la oficina encargada del examen preliminar internacional le envía con el presente el informe de examen preliminar internacional, elaborado para la solicitud internacional, en caso dado con los anexos correspondientes.

2. Una copia del informe, en caso dado con los anexos correspondientes, se hace llegar a la Oficina Internacional para su envío posterior a todas las oficinas seleccionadas.

3. A solicitud de una oficina seleccionada, la Oficina Internacional preparará una traducción del informe (pero no de los anexos) al inglés y le remitirá a esta oficina.

4. RECORDATORIO

Para ingresar en la fase nacional el solicitante, dentro de los 30 meses a partir de la fecha de prioridad (o en algunas oficinas incluso después), tiene que realizar ante cada oficina seleccionada ciertos actos (entrega de traducciones y desembolso de honorarios nacionales) (Artículo 39 (1)) (véase también la información remitida por la Oficina Internacional en el Formulario PCT/IB/301).

Si se tiene que enviar a una oficina seleccionada una traducción de la solicitud internacional, entonces esta traducción tiene que incluir traducciones de todos los anexos al informe de examen preliminar internacional. Es obligación del solicitante elaborar dichas traducciones y hacerlas llegar directamente a las oficinas seleccionadas respectivas.

Mayores detalles en cuanto a los plazos normativos y los requisitos de las oficinas seleccionadas se desprenden del Volumen II de la guía PCT para solicitantes.

Nombre y dirección postal de la autoridad que realiza el examen preliminar internacional:

Oficina Europea de Patentes
D-80298 Munich
Tel. +49 89 2399 - 0 Txc 523565 empu d
Fax: +49 89 2399 - 4465

Funcionario Autorizado

Hick, N

Teléfono No. +49 89 2399-8102

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**TRATADO SOBRE COOPERACIÓN INTERNACIONAL
EN MATERIA DE PATENTES**

PCT

**INFORME DE EXAMEN PRELIMINAR INTERNACIONAL
(Artículo 38 y Regla 70 PCT)**

No. de Expediente del Solicitante o Apoderado 6789-00	PROCEDIMIENTO POSTERIOR Véase Formulario PCT/IPEA/418				
No. Solicitud Internacional PCT/US2004/001218	<table style="width: 100%;"> <tr> <td style="width: 50%;">Fecha Internacional de Presentación (día/mes/año)</td> <td style="width: 50%;">Fecha de Prioridad (día/mes/año)</td> </tr> <tr> <td style="text-align: center;">16.01.2004</td> <td style="text-align: center;">17.01.2003</td> </tr> </table>	Fecha Internacional de Presentación (día/mes/año)	Fecha de Prioridad (día/mes/año)	16.01.2004	17.01.2003
Fecha Internacional de Presentación (día/mes/año)	Fecha de Prioridad (día/mes/año)				
16.01.2004	17.01.2003				
Clasificación Internacional de Patente (IPC) o Clasificación Nacional e IPC A61K 7/00, A61K 7/32					
Solicitante COLGATE-PALMOLIVE COMPANY					

1. Este informe de examen preliminar internacional fue elaborado por la Oficina Encargada del Examen Preliminar Internacional y se envía al solicitante según Artículo 38.
2. Este INFORME comprende un total de 5 hojas, incluyendo esta portada
3. Este INFORME también viene acompañado de ANEXOS que comprenden:
 - a. ☐ (enviados al solicitante y a la Oficina Internacional) un total de _____ hojas, como sigue:
 - ☐ hojas de la descripción, reivindicaciones y/o dibujos que han sido corregidas y son la base para este informe y/o hojas que contienen rectificaciones autorizadas por esta Autoridad (ver regla 70.16 y Sección 807 de las Instrucciones Administrativas)
 - ☐ hojas que sustituyen hojas anteriores, pero las cuales esta Autoridad considera contienen una corrección que va más allá de lo divulgado en la solicitud internacional como se presentó, según se indica en el ítem 4 de la casilla I y la Casilla Suplementaria.
 - b. ☐ (enviados solamente a la Oficina Internacional) un total de _____ (indique tipo y número de portador(es) electrónico(s)) _____, que contienen un listado de una secuencia y/o tablas relacionadas con el mismo, solo en forma legible por computador, como se indica en la casilla suplementaria Relacionada con el Listado de la Secuencia (ver Sección 802 de las Instrucciones Administrativas).

4. Este informe contiene datos con respecto a los siguientes puntos:

☒	Casilla No. I	Base del informe
☐	Casilla No. II	Prioridad
☐	Casilla No. III	Sin elaboración de un dictamen sobre novedad, actividad inventiva y posibilidad de aplicación industrial
☐	Casilla No. IV	Uniformidad deficiente de la invención
☒	Casilla No. V	Declaración justificada según Artículo 35(2) con respecto a la novedad, la actividad inventiva y la posibilidad de aplicación industrial; documentos y explicaciones que sustentan esta declaración
☐	Casilla No. VI	Ciertos documentos enumerados
☐	Casilla No. VII	Ciertas deficiencias del registro internacional
☒	Casilla No. VIII	Ciertas observaciones relacionadas con la solicitud internacional

Fecha de presentación de la petición 17.11.2004	Fecha de la preparación de este informe 05.04.2005
Nombre y dirección postal de la autoridad que realiza el examen preliminar internacional: Oficina Europea de Patentes D-80298 Munich Tel. +49 89 2399 - 0 Tx: 523565 empu d Fax: +49 89 2399 - 4465	Funcionario Autorizado Mitchell, G Teléfono No. +49 89 2399-8102

Formulario PCT/IPEA/409 (hoja de portada) (Enero 2004)

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**INFORME DEL EXAMEN PRELIMINAR INTERNACIONAL
SOBRE PATENTABILIDAD**

Solicitud Internacional No.
PCT/US2004/001218

Casilla No. I. Base para este informe.

1. Respecto al idioma, este informe se basa en la solicitud internacional en el idioma en el que fue presentada a menos que se indique lo contrario en este ítem.

☐ Este informe se basa en traducciones del idioma original al siguiente idioma, el cual es el idioma de una traducción presentada con el propósito de:

☐ la búsqueda internacional (bajo las Reglas 12.3 y 23.1 (b))

☐ la publicación de la solicitud internacional (bajo la Regla 12.4)

☐ el examen preliminar internacional (bajo las Reglas 55.2 y/o 55.3)

2. Respecto a los elementos* de la solicitud internacional, este informe se basa en *(hojas de reemplazo que han sido presentadas a la Oficina receptora en respuesta a una invitación bajo el Artículo 14 se referencian en este informe como "presentadas originalmente" y no se anexan en este informe)*:

Descripción, páginas:

1 – 20 como se entregaron originalmente

Reivindicaciones, No.:

1 – 20 como se entregaron originalmente

☐ un listado de la secuencia y/o cualquier tabla relacionada – ver casilla suplementaria para el listado de la secuencia

3. ☐ Las correcciones han resultado en la cancelación de:

☐ la descripción, páginas:

☐ las reivindicaciones, Nos.

☐ los dibujos, hojas/figuras

☐ el listado de la secuencia (*especifique*):

☐ cualquier tabla relacionada con el listado de la secuencia (*especifique*):

4. ☐ Este informe se ha establecido como si (algunas de) las correcciones anexas a este informe y enumeradas debajo no hubieran sido hechas, ya que se ha considerado que van más allá de la divulgación como se presentó, como se indica en la casilla suplementaria (Regla 70.2(c)).

☐ la descripción, páginas:

☐ las reivindicaciones, Nos.

☐ los dibujos, hojas/figuras

☐ el listado de la secuencia (*especifique*):

☐ cualquier tabla relacionada con el listado de la secuencia (*especifique*):

* Si el ítem 4 aplica, alguna o todas estas hojas pueden ser marcadas "suprimida".

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**INFORME DEL EXAMEN PRELIMINAR INTERNACIONAL
SOBRE PATENTABILIDAD**

No de Solicitud Internacional
PCT/US2004/001218

Casilla No. V. Declaración justificada bajo el Artículo 35(2) con respecto a la novedad, el nivel inventivo o la aplicabilidad industrial; las citas y explicaciones que sustentan dicha declaración.

1. DECLARACIÓN

Novedad (N)	Si: Reivindicaciones	1 – 20
	No: Reivindicaciones	
Nivel inventivo (IS)	Si: Reivindicaciones	1 – 20
	No: Reivindicaciones	
Aplicabilidad industrial (IA)	Si: Reivindicaciones	1 – 20
	No: Reivindicaciones	

2. CITAS Y EXPLICACIONES

Ver hoja aparte

Casilla No. VIII Ciertas observaciones sobre la solicitud internacional

Se hacen las siguientes observaciones sobre la claridad de las reivindicaciones, descripción y dibujos o sobre la pregunta si las reivindicaciones están completamente sustentadas por la descripción:

ver hoja aparte

Re Item V

Declaración justificada bajo el Artículo 35(2) con respecto a la novedad, el nivel inventivo o la aplicabilidad industrial; las citas y explicaciones que sustentan dicha declaración.

Se Hace referencia a los siguientes documentos:

D1: US 2002/155078 A1 (URRUTIA-GUTIERREZ ADRIANA Y COLABORADORES) 24 de Octubre de 2002 (2002-10-24).

D2: US-A-5 393 518 (KWASS JILL A) 28 de Febrero de 1995 (1998-02-28)

La presente solicitud es por una composición antitranspirante y/o desodorante de dos fases que comprende (A) una fase no polar que comprende (a) 0.1-40 % en peso de una silicona volátil y/o no volátil seleccionada de polisiloxanos organo-sustituidos lineales y cíclicos y (B) una fase polar que comprende: (a) al menos 5% en peso de un activo antitranspirante; (b) componente acuoso que comprende al menos 40% de agua y una cantidad suficiente de alcohol (C2-3), glicol o alcohol polihídrico para solubilizar el antitranspirante; y (c) un agente espesante (como se define en la reivindicación 1).

D1, el arte previo más cercano, divulga un cosmético de dos fases en roll-on que difiere de la presente solicitud en que la parte no polar comprende un elastómero entrecruzado o parcialmente entrecruzado que no emulsifica (párrafo 0023-0042)

D2 divulga una composición antitranspirante en roll-on (ver ejemplos 1 – 5) los cuales difieren del definido en la reivindicación 1 en la ausencia del agente espesante.

Por lo tanto la novedad puede ser reconocida (Art. 33(2) del PCT).

En vista del arte previo el problema técnico de la presente solicitud es el proporcionar una composición roll-on alternativa.

La característica de la composición de la presente solicitud de ser libre de elastómeros a demostrado tener una actividad liberadora de antitranspirante mejorada (se ha proporcionado información técnica que sustenta esta actividad, la cual permanecerá en archivo y la cual al ser necesitada será vuelta a presentar en la fase nacional). Además, D2 tiene que ver con una emulsión de agua en aceite que es

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un antitranspirante de una sola fase. La actividad antitranspirante esta presente en la fase acuosa y con el fin de liberarla la emulsión estable debe volverse suficientemente inestable para permitir que la gotas de agua se rompan y liberen el componente activo. La presente solicitud es un sistema de dos fases el cual es mucho menos estable que la emulsión de D2.

Por lo tanto se considera que se han cumplido los requerimientos de nivel inventivo (Art. 33(3) del PCT).

Re Ítem VIII

Ciertas observaciones sobre la solicitud Internacional

1. Reivindicación 1 – "por lo que la composición es capaz de formar una emulsión temporalmente estabilizada después de agitar por un periodo que no excede las 24 horas"; Reivindicación 4: "en donde el periodo no excede las 15 horas"; y reivindicación 5 – "en donde el periodo esta en el rango de 1 – 20 minutos", están definidas por un resultado a alcanzar y como tal se consideran poco claras (Art. 6 del PCT).
2. Las reivindicaciones 13, 14, 20 comprenden discrepancias entre las reivindicaciones y la descripción que hacen la materia poco clara (Art. 6 del PCT):
Reivindicación 13: "10-27 % en peso de pseudo silicona"; y "2-10 % en peso adicional", probablemente debería venir seguido de "agua".
Reivindicación 14: "10-28 % en peso de dimeticona"
Reivindicación 20: "10-30% en peso de ciclometicona/dimeticona"; y "60-60% en peso como 29% de activo en agua" debería probablemente comprender "antitranspirante".
3. El término "incorporado aquí como referencia" se usa en la descripción. Si los documentos mencionados han de ser incorporados, la divulgación de los mismos debe incluirse de forma expresa en la descripción bajo las condiciones establecidas en la Guía del PCT C-II, 4, 18 o la frase "incorporado aquí como referencia" deberá ser borrada.

4. TRANSMITTAL LETTER TO THE
UNITED STATES RECEIVING OFFICE

Date	16 January 2004
International Application No.	
Attorney Docket No.	IR 6789-00

I. Certification under 37 CFR 1.10 (if applicable)

EV 380773972 US
Express Mail mailing number

16 January 2004
Date of Deposit

I hereby certify that the application/correspondence attached hereto is being deposited with the United States Postal Service "Express Mail Post Office to Addressee" service under 37 CFR 1.10 on the date indicated above and is addressed to Assistant Commissioner for Patents, Washington, D.C. 20231.

<i>Carol Stanley</i>
Signature of person mailing correspondence

Carol Stanley
Typed or printed name of person mailing correspondence

II. ☒ New International Application

TITLE	TWO-PHASE ROLL-ON COSMETIC PRODUCT
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Earliest priority date (Day/Month/Year)
17 January 2003

SCREENING DISCLOSURE INFORMATION: In order to assist in screening the accompanying international application for purposes of determining whether a license for foreign transmittal should and could be granted and for other purposes, the following information is supplied. (Note: check as many boxes as apply):

- A. ☐ The invention disclosed was not made in the United States.
- B. ☐ There is no prior U.S. application relating to this invention.
- C. ☒ The following prior U.S. application(s) contain subject matter which is related to the invention disclosed in the attached international application. (NOTE: priority to these applications may or may not be claimed on form PCT/RO/101 (Request) and this listing does not constitute a claim for priority).

application no.	US8N 10/346,834	filed on	17 January 2003
application no.		filed on	

- D. ☐ The present international application ☐ is identical ☐ contains less subject matter than that found in the prior U.S. application(s) identified in paragraph C.
- E. ☐ The present international application ☐ contains additional subject matter not found in the prior U.S. application(s) identified in paragraph C. above. The additional subject matter is found on pages and ☐ DOES NOT ALTER ☐ MIGHT BE CONSIDERED TO ALTER the general nature of the invention in a manner which would require the U.S. application to have been made available for inspection by the appropriate defense agencies under 35 U.S.C. 181 and 37 CFR 5.1. See 37 CFR 5.15

III. ☐ A Response to an Invitation from the RO/US. The following document(s) is (are) enclosed:

- A. ☐ A Request for An Extension of Time to File a Response
- B. ☐ A Power of Attorney (General or Regular)
- C. ☐ Replacement pages:

pages		of the request (PCT/RO/101)	pages		of the figures
pages		of the description	pages		of the abstract
pages		of the claims			

- D. ☐ Submission of Priority Documents

Priority document		Priority document	
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- E. ☐ Fees as specified on attached Fee Calculation sheet form PCT/RO/101 annex

IV. ☐ A Request for Rectification under PCT 91 ☐ A Petition ☐ A Sequence Listing Diskette

V. ☐ Other (please specify):

The person
signing this
form is the:

☐ Applicant		Rosemary M. Milano
☒ Attorney/Agent (Reg. No.) 29,874		Typed Name of signer
☐ Common Representative		<i>[Signature]</i> Signature

EV360773972US

PCT REQUEST

Original (for SUBMISSION)

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0	For receiving Office use only	
0-1	International Application No.	
0-2	International Filing Date	
0-3	Name of receiving Office and "PCT International Application"	
0-4	Form - PCT/RO/101 PCT Request	
0-4-1	Prepared Using	PCT-SAFE [EASY mode] Version 3.50 (Build 0002.153)
0-5	Petition The undersigned requests that the present international application be processed according to the Patent Cooperation Treaty	
0-6	Receiving Office (specified by the applicant)	United States Patent and Trademark Office (USPTO) (RO/US)
0-7	Applicant's or agent's file reference	6789-00
I	Title of Invention	TWO-PHASE ROLL-ON COSMETIC PRODUCT
II	Applicant	
II-1	This person is:	applicant only
II-2	Applicant for	all designated States
II-4	Name:	COLGATE-PALMOLIVE COMPANY
II-5	Address:	300 Park Avenue New York, New York 10022 United States of America
II-6	State of nationality	US
II-7	State of residence	US
II-8	Telephone No.	732-878-7153
II-9	Facsimile No.	732-878-7853
III-1	Applicant and/or inventor	
III-1-1	This person is:	inventor only
III-1-4	Name (LAST, First)	FEI, Lin
III-1-5	Address:	91 Stillwell Road Kendall Park, New Jersey 08824 United States of America

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III-2	Applicant and/or inventor	
III-2-1	This person is:	inventor only
III-2-4	Name (LAST, First)	CHOPRA, Suman
III-2-5	Address:	505 Major Road Dayton, New Jersey 08810 United States of America
III-3	Applicant and/or inventor	
III-3-1	This person is:	inventor only
III-3-4	Name (LAST, First)	PATEL, Neeta
III-3-5	Address:	Mayflower Apt. D9 290 River Road Piscataway, New Jersey 08854 United States of America
IV-1	Agent or common representative; or address for correspondence The person identified below is hereby/ has been appointed to act on behalf of the applicant(s) before the competent International Authorities as:	agent
IV-1-1	Name (LAST, First)	MIANO, Rosemary, M.
IV-1-2	Address:	Colgate-Palmolive Company 909 River Road Piscataway, New Jersey 08855 United States of America
IV-1-3	Telephone No.	732-878-7153
IV-1-4	Facsimile No.	732-878-7853
IV-1-5	e-mail	rosemary_miano@colpal.com
IV-1-6	Agent's registration No.	29,674
V	DESIGNATIONS	
V-1	The filing of this request constitutes under Rule 4.2(a), the designation of all Contracting States bound by the PCT on the international filing date, for the grant of every kind of protection available and, where applicable, for the grant of both regional and national patents.	
VI-1	Priority claim of earlier national application	
VI-1-1	Filing date	17 January 2003 (17.01.2003)
VI-1-2	Number	10/346,834
VI-1-3	Country	US

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VI-2	Priority document request The receiving Office is requested to prepare and transmit to the International Bureau a certified copy of the earlier application(s) identified above as item(s):	VI-1	
VII-1	International Searching Authority Chosen	European Patent Office (EPO) (ISA/EP)	
VIII	Declarations	Number of declarations	
VIII-1	Declaration as to the identity of the inventor	-	
VIII-2	Declaration as to the applicant's entitlement, as at the international filing date, to apply for and be granted a patent	1	
VIII-3	Declaration as to the applicant's entitlement, as at the international filing date, to claim the priority of the earlier application	1	
VIII-4	Declaration of inventorship (only for the purposes of the designation of the United States of America)	-	
VIII-5	Declaration as to non-prejudicial disclosures or exceptions to lack of novelty	-	

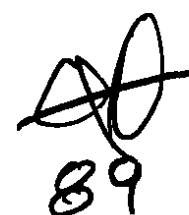
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VII-2-1	Declaration: Entitlement to apply for and be granted a patent Declaration as to the applicant's entitlement, as at the international filing date, to apply for and be granted a patent (Rules 4.17(ii) and 51bis.1(a)(ii)). In a case where the declaration under Rule 4.17(iv) is not appropriate: Name (LAST, First)	in relation to this international application COLGATE-PALMOLIVE COMPANY is entitled to apply for and be granted a patent by virtue of the following:
VII-2-1(iv)		an assignment from FEI Lin to COLGATE-PALMOLIVE COMPANY, dated 04 March 2003 (04.03.2003)
VII-2-1(iv)		an assignment from CHOPRA Suman to COLGATE-PALMOLIVE COMPANY, dated 04 March 2003 (04.03.2003)
VII-2-1(iv)		an assignment from PATEL Neeta to COLGATE-PALMOLIVE COMPANY, dated 04 March 2003 (04.03.2003)
VII-2-1(iv)	This declaration is made for the purposes of:	all designations

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VII-3-1	Declaration: Entitlement to claim priority Declaration as to the applicant's entitlement, as at the international filing date, to claim the priority of the earlier application specified below, where the applicant is not the applicant who filed the earlier application or where the applicant's name has changed since the filing of the earlier application (Rules 4.17(III) and 51bis.1(e)(II)) Name:	in relation to this international application COLGATE-PALMOLIVE COMPANY is entitled to claim priority of earlier application No. 10/346,834 by virtue of the following:
VIII-3-1(iv)		an assignment from FEI Lin to COLGATE-PALMOLIVE COMPANY, dated 04 March 2003 (04.03.2003)
VIII-3-1(v)		an assignment from CHOPRA Suman to COLGATE-PALMOLIVE COMPANY, dated 04 March 2003 (04.03.2003)
VIII-3-1(v)		an assignment from PATEL Neeta to COLGATE-PALMOLIVE COMPANY, dated 04 March 2003 (04.03.2003)
VIII-3-1(x)	This declaration is made for the purposes of:	all designations

PCT REQUEST

Original (for SUBMISSION)

At
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IX	Check list	number of sheets	electronic file(s) attached
IX-1	Request (including declaration sheets)	6	-
IX-2	Description	20	-
IX-3	Claims	6	-
IX-4	Abstract	1	✓
IX-5	Drawings	0	-
IX-7	TOTAL	33	
	Accompanying items	paper document(s) attached	electronic file(s) attached
IX-8	Fee calculation sheet	✓	-
IX-17	PCT-SAFE physical media	-	✓
IX-18	Figure of the drawings which should accompany the abstract		
IX-20	Language of filing of the international application	English	
X-1	Signature of applicant, agent or common representative	 MIANO, Rosemary, M.	
X-1-1	Name:		
X-1-2	Name of signatory		
X-1-3	Capacity		

FOR RECEIVING OFFICE USE ONLY

10-1	Date of actual receipt of the purported international application	
10-2	Drawings:	
10-2-1	Received	
10-2-2	Not received	
10-3	Corrected date of actual receipt due to later but timely received papers or drawings completing the purported international application	
10-4	Date of timely receipt of the required corrections under PCT Article 11(2)	
10-5	International Searching Authority	ISA/EP
10-6	Transmittal of search copy delayed until search fee is paid	

FOR INTERNATIONAL BUREAU USE ONLY

11-1	Date of receipt of the record copy by the International Bureau	
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Two-Phase Roll-on Cosmetic Product

Field of the Invention

5 This invention relates to a two-phase, elastomer-free, low viscosity, high water roll-on cosmetic product, especially for use in the field of antiperspirants and/or deodorants.

Background of the Invention

10 Current roll-on products in the market frequently involve emulsions and/or the suspension of an antiperspirant active in the formulation. The products frequently require the use of one or more surfactants to stabilize and/or compatibilize two non-compatible phases. There are two issues associated with the use of surfactants. The first issue is skin irritation. Unless the surfactant system is carefully selected, the use of such materials may cause skin irritation. The second issue is efficacy. It may be the case that in some systems, the use of a surfactant may interfere with the gel plug
15 formation by which many antiperspirant actives work to reduce perspiration.

Another group of benefits may also be achieved with the reduction and/or elimination of surfactants in cosmetic products that contain an antiperspirant active. These benefits include improving the dry feel of the product, reducing the amount of non-white residue on skin and clothing, and reducing the tackiness of the product.

20 Two-phase systems have been seen in a few cosmetic applications including liquids and solids. One commercial liquid two-phase product from The Dial Corporation (Scottsdale, AZ) is Nature's Accents® Bath Treats, a bubble bath product comprising water, cetearyl ethylhexanoate, sodium laureth sulfate, cocamidopropyl betaine, fragrance, glycerin, sodium cocoyl glutamate (and) disodium cocoyl glutamate, PEG-8, DMDM hydantoin, tetrasodium EDTA, hydrolyzed milk protein, honey extract,
25 and coloring agents. As a cleansing material this product is formulated with surfactants. This product has a creamy milky top layer with a clear colored layer under it.

30 A second commercial liquid two-phase product is Cloud Dance™ breeze cologne spray distributed by CCA Industries, Inc. (East Rutherford, NJ). This product lists the following ingredients: SD alcohol, 40D, hexamethyldisiloxane, fragrance, distilled water, sodium chloride, coloring agents, and benzophenone-3. This product is clear with two bands of differing colors.

There are patent references that describe two-phase or multiphase technology.
35 U.S. Patent 4,120,948 to Shelton describes a two-phase stick antiperspirant having (1) a

substantially anhydrous antiperspirant phase comprising a water-insoluble, high melting point wax, a liquid emollient, and high levels of a particulate, antiperspirant active material and (2) a gel phase comprising a polyhydric alcohol gelled with either a fatty acid soap or a fatty acid amide.

5 U.S. Patent 4,438,095 to Grollier et al describes a liquid cosmetic composition comprising two separate liquid phases. The first phase is an aqueous phase in which at least one cationic polymer is dissolved. The composition contains no detergent agent or foaming agents.

10 U.S. Patent 4,767,741 to Komor et al teaches a two-phase liquid cosmetic composition comprising an oil phase, and organic liquid/water phase and insoluble solid particles absorbed on the interface between the two phases, wherein the solid particles are the in situ precipitation product of at least a first salt solution and a second salt solution (added to the oil phase and organic/water phase during blending thereof).

15 U.S. Patent 4,973,473 to Schneider et al teaches (in a preferred embodiment) a composition comprising two discrete gel phases. The composition includes an emollient complex containing a selected carboxylic acid amide(s), a mucopolysaccharide, at least one skin structuring protein and an astringent.

20 U.S. Patent 4,980,155 to Shah et al teaches a two-phase cosmetic composition comprising a color phase which includes a first phase comprising a film forming agent, at least one colorant, an emulsifier and water; and a second phase comprising a gel phase comprising a water soluble polymer and water. The phases are miscible with each other but are disposed in discrete side by side separate phases.

25 U.S. Patent 5,213,799 to Foring et al describes skin treating compositions which comprise a transparent oil phase and a transparent aqueous phase, preferably with humectant effect, which permits a homogenous mixture when shaken together and thereafter separates again into two transparent phases. The cosmetic composition includes the use of 0.1-1.0 weight % of C12-C18 fatty acid triglycerol ester.

30 U.S. Patent 5,290,555 to Guthauser et al teaches compositions with structural color in which two phases are selected with the same refractive index but different dispersive power. Either or both of the phases may contain cosmetically active ingredients.

35 U.S. Patent 5,474,777 to Marion et al describes liquid cleansing compositions consisting of an oily phase and an aqueous phase, wherein the oily phase consists of at least one dialkylphosphate and, optionally, products miscible therein, and the aqueous phase contains one or more ionic surfactants.

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U.S. Patent 5,593,663 to Leng et al describes antiperspirant actives which are amphiphilic materials that, upon contact with perspiration, form a water-insoluble liquid crystal phase of greater than one-dimensional periodicity.

- 5 U.S. Patent 5,654,362 to Schultz et al describes silicone oils and solvents thickened by silicone elastomers and suitable for use in products such as antiperspirants and deodorants.

U.S. Patent 5,919,437 to Lee et al describes solid cosmetic compositions including cosmetic cream compositions containing silicone elastomers as gelling agents.

- 10 U.S. Phase 6,019,991 to Tanaka et al teaches a two-phase cosmetic composition comprising separate and distinct oil and aqueous phases which form a highly temporary clear emulsion when shaken together. A clear package is used. One phase may be colored while the other is usually water white.

- 15 U.S. Patent 6,180,587 to Fuller et al teaches a multiple phase composition comprising a lower aqueous phase comprising at least 1 weight % of a polymer or copolymer selected from the group consisting of polyacrylate, polystyrene sulfonate, polyvinyl-pyrrolidone, maleic anhydride and mixtures thereof and an upper aqueous phase having a cleansingly effective amount of a surfactant.

- 20 PCT case WO 00/67712 discloses a solid stick containing antiperspirant actives and formed with a core phase and an outer phase.

- 25 Conventional roll-on products used as antiperspirants and/or deodorants are usually emulsions or anhydrous suspensions. Emulsions can be oil-in-water or water-in-oil systems wherein one phase is dispersed in the other. In emulsions both phases remain together because of the addition of surfactants. Emulsion products tend to have a wet feel, a higher level of tackiness and some irritation issues. Anhydrous suspensions are composed of powders suspended in anhydrous liquids. They typically include a relatively high percentage of suspending agents that contribute to white residues being left on skin and clothing. While the anhydrous suspension do not produce a wet feel, they exhibit other problems such as settling of the powder over time and leakage of the carrier liquid, especially if the product is not continuously shaken.
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- 35 The present invention reduces and/or eliminates some of the aforementioned problems. In particular, the compositions of the present invention are able to provide two phase antiperspirants and/or deodorants which have improved efficacy, reduced irritation on skin, reduced white residue on skin and clothing, and improved aesthetics such as reducing the tackiness.

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Brief Summary of the Invention

This invention is a two phase, elastomer-free, low viscosity, high water roll-on cosmetic product, especially for use in the field of antiperspirants and/or deodorants.

5 The roll-on product is made with a polar phase and a non-polar phase wherein a cosmetically active ingredient effective as an antiperspirant and/or a deodorant is dissolved in one of the phases.

10 The composition is packaged in a conventional roll-on dispenser. Before the product is applied the container is shaken or agitated forcefully enough to temporarily mix the two phases. The product is applied while the two phases are mixed. The following description includes both a formulation which comprises the ingredients listed and a composition which is made by combining the ingredients listed. Note that for the units used, centistoke = centipoise/density. Thus, when the density is close to 1, the centistoke and centipoise measurements will be about the same.

15 The non-polar phase can be clear, translucent or opaque, has a viscosity up to 200 centipoise (preferably less than 20 centipoise), and is made by combining the following ingredients:

(a) 0.1-40 weight % (more particularly 5-30%) of a volatile and/or a nonvolatile silicone selected from the group consisting of linear and cyclic organo-substituted polysiloxanes wherein the viscosity is less than 5 centistokes for volatile silicones and in the range of 5-20 centistokes for non-volatile silicones;

(b) 0-25 weight % (more particularly 1-10%) of a straight or branched chain hydrocarbon polymer which has an average molecular weight in the range of 450-6000 daltons;

25 (c) 0-15 weight % (more particularly, 1-10% and , even more particularly, 1-5%) of one or more low viscosity, lipophilic emollients selected from the group consisting of:

(i) 0-10 weight % (with a particular range being 1-8%) of a non-polar hydrocarbon (preferably branched such as with an "iso" group) having from 4-30 carbons (preferably 4-20 carbons and, more preferably, 6-20 carbons);

30 (ii) 0-10 weight % (with a particular range being 1-8%) of a benzoic acid ester selected from the group consisting of C12-C20 benzoate esters (for example, a C12-15 alkyl benzoate such as FINSOLV TN);

(iii) 0-8 weight % (with a particular range being 4-6% and especially 5%) of a propoxylated fatty alcohol having 4-16 carbons and 2-14 moles of propoxylation (for example, PPG-3 myristyl ether);

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(d) optionally one or more ingredients selected from the group consisting of

(i) 0-0.2 weight % (particularly 0.001-0.01 weight %) of a silicone surfactant having an hydrophilic lipophilic balance ("HLB value") ≤ 13 (so as to temporarily stabilize the emulsion for ease of application, for example for a time not exceeding 24 hours, particularly not exceeding 15 hours (noting that compositions can be made whose stability is in a range as low as 1-20 minutes);

(ii) 0-2 weight % (particularly 0.1-1%) hydrophobically treated amorphous colloidal fumed silica;

(iii) 0- 2 weight % fragrance (particularly 0.5 to 1 weight %);

(iv) 0-1.00 weight % vitamins (particularly 0.01-1.00 weight %) (especially vitamin E or a precursor); and

(v) 0.0-0.002 weight % coloring agent (for example, a cosmetic pigment).

The polar phase can be clear, translucent or opaque. In general it may contain one or more members selected from water and or a polyhydric alcohol wherein the cosmetically active ingredients are dissolved in this polar phase. The polar phase should also have a viscosity in the range of 10 - 2,000 centipoise ("cps"). The polar phase comprises:

(a) at least 5 weight % of an antiperspirant active;

(b) an aqueous component comprising at least 40 % water and a sufficient amount of a C2-3 alcohol, a glycol or a polyhydric alcohol so that the antiperspirant active is dissolved in the aqueous component (for example, 40-70% water, and up to 20.00 weight % (maximum) of one or more of ethyl alcohol, isopropyl alcohol, a glycol selected from the group consisting of propylene glycol, dipropylene glycol, tripropylene glycol and methylpropylene glycol, and mixtures of any of the foregoing);

(c) a thickening agent selected from the group consisting of:

(i) 0.05-2.5 weight % of a water soluble cationic derivative selected from the group consisting of hydroxyethyl cellulose and its copolymers (preferably

Polyquaternium-10 (Celquat SC 240 C from National Starch, Finderne, NJ)), and hydroxypropyl cellulose and its copolymers, provided that the viscosity of the polar phase does not exceed 2,000 cps; and

(ii) 0.1-5 weight % of a starch modified polymer which is a sodium hydroxypropyl starch phosphate (for example, Pure Gel® products from Grain

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Processing Corporation, Muscatine, Iowa, such as those sold under the B990, B992, B994, and B980 designations);

(d) optionally one or more ingredients selected from the group consisting of

5 (i) micas (≤ 1.0 weight %, with an average particle size in the range of 10-125 microns and preferably less than 30 microns);

(ii) suspending agents (for example, 1-3 weight % of Bentone 38 with the addition of a polar additive, for example 0.3 - 1.0 weight % of propylene carbonate);

10 (iii) antimicrobial agents (which may also be considered as a cosmetic ingredient if used in sufficient amount to inhibit bacteria growth under the arm), for example, a member of the group consisting of bacteriostatic quaternary ammonium compounds such as 2-amino-2-methyl-1-propanol (AMP), cetyl-trimethylammonium bromide, cetyl pyridinium chloride, 2, 4, 4'-trichloro-2'-hydroxydiphenylether (Triclosan), N-(4-chlorophenyl)-N'-(3,4-dichlorophenyl)urea (Triclocarban), silver halides, octoxyglycerin (Sensiva™ SC 50); 3,7,11-trimethyldodeca-2,6,10-trienol
15 (Farnesol from Dragoco, Totowa, NJ); and various zinc salts (for example, zinc ricinoleate). The bacteriostat can, illustratively, be included in the composition in an amount of 0-5%, particularly 0.01-1.0% by weight, of the total weight of the composition (Triclosan, can illustratively be included in an amount of from 0.05% to about 0.5% by weight, of the total weight of the composition.);

20 (iv) masking agents in an amount of 0-5.0 weight % (particularly 0.05-2%) by weight based on the total weight of the composition particularly if an unscented product is desired;

(v) 0-5 weight % of one or more polymers of ethylene oxide, for example PEG-4, PEG-6, PEG-8, PEG-9, PEG-10, PEG-12, PEG 14, Carbowax PEG-200, Carbowax
25 PEG-300, Carbowax PEG-400, Carbowax PEG-600, particularly 0.1-1.0 weight % of PEG-12; and

(vi) 0-0.5 weight % of a water soluble surfactant having an hydrophilic lipophilic balance ("HLB value") ≥ 10 (for example, a member of the group consisting of Ceteth-20 sucrose stearate, Oleath-10 (sold under the tradename Volpo 10 from Croda, Inc.,
30 New Jersey), Oleath-20 (sold under the trade name Volpo 20), PEG 7 glycerol cocoate, and sorbitan 20 ethylene oxide monolaurate);

wherein the ratio of oil phase to water phase is in the range of 15:85-40:60; and whereby the composition is able to form a temporarily stabilized emulsion when shaken with a period of stability not exceeding 24 hours.

Detailed Description of the Invention

5 For the volatile silicones used in this invention, linear or cyclic materials may be used alone or in combination. Linear volatile methyl siloxanes ("VMS") have the formula $(\text{CH}_3)_3\text{SiO}\{(\text{CH}_3)_2\text{SiO}\}_y\text{Si}(\text{CH}_3)_3$. The value of y is 0-5. Cyclic VMS have the formula $\{(\text{CH}_3)_2\text{SiO}\}_z$. The value of z is 3-6. Preferably, these volatile methyl siloxanes are linear or cyclic with a viscosity in the range of 0.5-5 centistokes
10 (with the "cst" unit being the same as mm^2/s).

Representative linear volatile methyl siloxanes (I) are hexamethyldisiloxane (MM) with a boiling point of 100 degrees C., viscosity of $0.65 \text{ mm}^2/\text{s}$, and formula $\text{Me}_3\text{SiOSiMe}_3$; octamethyltrisiloxane (MDM) with a boiling point of 152 degrees C., viscosity of $1.04 \text{ mm}^2/\text{s}$, and formula $\text{Me}_3\text{SiOMe}_2\text{SiOSiMe}_3$; decamethyltetrasiloxane
15 (MD₂M) with a boiling point of 194 degrees C., viscosity of $1.53 \text{ mm}^2/\text{s}$, and formula $\text{Me}_3\text{SiO}(\text{Me}_2\text{SiO})_2\text{SiMe}_3$; dodecamethylpentasiloxane (MD₃M) with a boiling point of 229 degrees C., viscosity of $2.06 \text{ mm}^2/\text{s}$, and formula $\text{Me}_3\text{SiO}(\text{Me}_2\text{SiO})_3\text{SiMe}_3$; tetradecamethylhexasiloxane (MD₄M) with a boiling point of 245 degrees C., viscosity of $2.63 \text{ mm}^2/\text{s}$, and formula $\text{Me}_3\text{SiO}(\text{Me}_2\text{SiO})_4\text{SiMe}_3$; and hexadecamethylhepta-
20 siloxane (MD₅M) with a boiling point of 270 degrees C., viscosity of $3.24 \text{ mm}^2/\text{s}$, and formula $\text{Me}_3\text{SiO}(\text{Me}_2\text{SiO})_5\text{SiMe}_3$.

Representative cyclic volatile methyl siloxanes (II) are hexamethyl-
cyclotrisiloxane (D₃) a solid with a boiling point of 134 degrees C. and formula $\{(\text{Me}_2)\text{SiO}\}_3$; octamethylcyclotetrasiloxane (D₄) with a boiling point of 176 degrees
25 C., viscosity of $2.3 \text{ mm}^2/\text{s}$, and formula $\{(\text{Me}_2)\text{SiO}\}_4$; decamethylcyclopentasiloxane (D₅) with a boiling point of 210 degrees C., viscosity of $3.87 \text{ mm}^2/\text{s}$, and formula $\{(\text{Me}_2)\text{SiO}\}_5$; and dodecamethylcyclohexasiloxane (D₆) with a boiling point of 245 degrees C., viscosity of $6.62 \text{ mm}^2/\text{s}$, and formula $\{(\text{Me}_2)\text{SiO}\}_6$ (with a particular group of cyclics including D5 and D6 cyclomethicones).

30 Particular examples of suitable volatile silicones include DC-244 Fluid, DC-245 Fluid, DC 246 Fluid, DC-344 Fluid, DC-345 Fluid, DC 200 Fluid (with 0.65 cst viscosity) to DC 200 Fluid (with 5 cst viscosity), and DC-1184 Fluid (a mixture of low

molecular weight volatile and non-volatile silicones most of which are linear and volatile, such material has a boiling point greater than 35 degrees and a viscosity of about 1.6 centistokes) all of which are from Dow Corning Corp.), and especially decamethylcyclopentasiloxane (DC-245 Fluid).

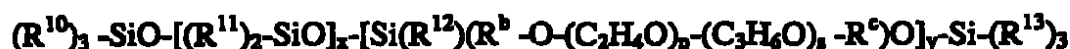
- 5 Silicones are linear organo-substituted polysiloxanes which are polymers of silicon/oxygen with general structure:

(1) $(R^{20})_3SiO(Si(R^{21})_2O)_xSi(R^{22})_3$ where R^{20} , R^{21} and R^{22} can be the same or different and are each independently selected from the group consisting of phenyl and C1-C60 alkyl; or

- 10 (2) $HO(R^{24})_2SiO(Si(R^{25})_2O)_xSi(R^{26})_2OH$, where R^{24} , R^{25} and R^{26} can be the same or different and are each independently selected from the group consisting of phenyl and C1-C60 alkyl;

(with specific examples including dimethicone, dimethiconol behenate, C_{30-45} alkyl methicone, stearoxytrimethylsilane, phenyl trimethicone and stearyl dimethicone).

- 15 In general, silicone copolyols useful in the present invention include copolyols of the following Formulae I and II. Formula I is:



Formula I

- wherein each of R^{10} , R^{11} , R^{12} , and R^{13} may be the same or different and each is selected from the group consisting of C1-C6 alkyl; R^b is the radical $-C_mH_{2m}-$; R^c is a terminating radical which can be hydrogen, a C1-C6 alkyl group, an ester group such as acyl, or an aryl group such as phenyl; m has a value in the range of 2-8; p and s have values such that the oxyalkylene segment $-(C_2H_4O)_p-(C_3H_6O)_s-$ has a molecular weight in the range of 200-5,000; the segment preferably having 50-100 mole percent of oxyethylene units, $-(C_2H_4O)_p-$, and 1-50 mole percent of oxypropylene units, $-(C_3H_6O)_s-$; x has a value of 8-400; and y has a value of 2-40. Preferably each of R^{10} , R^{11} , R^{12} , and R^{13} is a methyl group; R^c is hydrogen; m is 3 or 4 whereby the group R^b is most preferably the radical $-(CH_2)_3-$; and the values of p and s are such as to provide a molecular weight of the oxyalkylene segment, $-(C_2H_4O)_p-(C_3H_6O)_s-$, in the range of 1,000-3,000. Most preferably p and s are selected to have a value in the range of 18-28.
- 30 Formula II is



Formula II

wherein r has a value in the range of 6-16; w has a value in the range of 6-100; z has a value in the range of 1-20, and the other moieties have the same definition as described for Formula I.

It should be understood that in both Formula I and II shown above, the siloxane-oxyalkylene copolymers of the present invention may, in alternate embodiments, take the form of endblocked polyethers in which the linking group (R^b), the oxyalkylene segments, and the terminating radical (R^c) occupy positions bonded to the ends of the siloxane chain, rather than being bonded to a silicon atom in the siloxane chain. Thus, one or more of the R^{10} , R^{11} , R^{12} , and R^{13} substituents which are attached to the two terminal silicon atoms at the end of the siloxane chain can be substituted with the segment $-(R^b-O-(C_2H_4O)_p-(C_3H_6O)_q-R^c)$ or with the segment $-(R^b-O-(C_2H_4O)_r-R^c)$. In some instances it may be desirable to provide the segment $-(R^b-O-(C_2H_4O)_p-(C_3H_6O)_q-R^c)$ or $-(R^b-O-(C_2H_4O)_r-R^c)$ at locations which are in the siloxane chain as well as at locations at one or both of the siloxane chain ends.

Particular examples of suitable dimethicone copolyols which are available either commercially or experimentally from a variety of suppliers include DOW CORNING® 5225C (from Dow Corning Corporation, Midland, MI) which is a 10% dimethicone copolyol in cyclomethicone; DOW CORNING® 2-5185C which is a 45-49% dimethicone copolyol in cyclomethicone; SILWET L-7622 (from Witec Corporation, Greenwich, CT); ABIL EM97 (from Goldschmidt Chemical Corporation, Hopewell, VA) which is a 85% dimethicone copolyol in D5 cyclomethicone; and FPD 4668 (from Shin-Etsu Corporation, Japan) which is a fluorine containing organopolysiloxane.

It should also be noted that various concentrations of dimethicone copolyols in cyclomethicone can be used. While a concentration of 10% in cyclomethicone (which can be D4, D5, D6 or mixtures thereof) is frequently commercially available, other concentrations can be obtained such as, for example, by stripping off the cyclomethicone or adding additional cyclomethicone. The higher concentration materials such as DOW CORNING® 2-5185C is of particular interest.

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In one particular embodiment 0.1-2% (particularly 0.1-0.5%) of a 10% silicone copolyol such as dimethicone copolyol in cyclomethicone (particularly a D5 or D6 cyclomethicone) mixture may be used, wherein the amount of the mixture added is selected so that the level of silicone copolyol in the cosmetic composition is in the range of 0 to about 0.2 weight % (particularly 0 to about 0.05 %) (for example, 0.25-0.4% of a 40-50% dimethicone copolyol in cyclomethicone mixture).

Hydrocarbons as used in this application are a group of compounds derived from petroleum and contain only carbon and hydrogen. Their structures can vary widely and include aliphatic, alicyclic and aromatic compounds. Specific examples include paraffin, petrolatum, hydrogenated polyisobutene, polybutene and mineral oil. Hydrocarbons of particular interest for use in this invention include isoparaffinic fluids having 4-30 carbons (especially 7-20 carbons) such as C7-8 isoparaffin, C8-9 isoparaffin, C10-11 isoparaffin, C11-12 isoparaffin, C11-13 isoparaffin, C13-14 isoparaffin, C12-20 isoparaffin, especially C11-12 isoparaffin (for example, Isopar H from Exxon Chemical Company, Baytown, TX), and other branched chain hydrocarbons such as isododecane (Permethyl 99A), isocicosane (Permethyl 102A), isohexadecane (Permethyl 101A) (the Permethyls being available from Preperse, Inc., South Plainfield, NJ), and combinations of any of the foregoing.

Particular examples of benzoate esters which can be used in this invention include isostearyl benzoate, PPG-15 stearyl ether benzoate, octyldodecyl benzoate, and C12-15 alkyl benzoate and those described in U.S. Patent 4,791,097 and U.S. Patent 5,270,461, incorporated by reference herein with respect to the description of such esters. These include compositions of formula: $\text{PHENYL} - \text{C}(\text{O})\text{OR}^{30}$ where R^{30} is:

(a) a branched or linear alkyl of 20-28 carbons; or

(b) $-\text{CH}(\text{CH}_3)-\text{CH}_2(\text{O}-\text{CH}(\text{CH}_3)\text{CH}_2)_n-\text{O}-\text{R}^{31}$, wherein n is 9-16 and R^{31} is a branched or linear alkyl of 3-22 carbons.

More particular examples of such benzoate esters include isostearyl benzoate, PPG-15 stearyl ether benzoate, octyldodecyl benzoate, and C12-15 alkyl benzoate (for example and preferably, FINSOLV TN from Finetex, Inc. (Elmwood Park, NJ).

Another particular group of such esters include those marketed by Finetex under the designations FINSOLV® TN (C12-15 alkyl benzoate), FINSOLV® SB (isostearyl benzoate), FINSOLV® P (PPG-15 stearyl ether benzoate), FINSOLV® BOD (octyl

dodecyl benzoate), FINSOLV 116 (stearyl benzoate), FINSOLV PL-62 (Poloxamer 182 benzoate) and FINSOLV® PL-355 (poloxamer 105 benzoate).

The antiperspirant active can be selected from the group consisting of any of the known antiperspirant active materials. These include, by way of example (and not of a limiting nature), aluminum chlorohydrate, aluminum chloride, aluminum dichlorohydrate, aluminum sesquichlorohydrate, zirconyl hydroxychloride, aluminum-zirconium glycine complex (for example, aluminum zirconium trichlorohydrate gly, aluminum zirconium pentachlorohydrate gly, aluminum zirconium tetrachlorohydrate gly and aluminum zirconium octochlorohydrate gly), aluminum chlorohydrate PG, aluminum chlorohydrate PEG, aluminum dichlorohydrate PG, and aluminum dichlorohydrate PEG. The aluminum-containing materials can be commonly referred to as antiperspirant active aluminum salts. Generally, the foregoing metal antiperspirant active materials are antiperspirant active metal salts. In the embodiments which are antiperspirant compositions according to the present invention, such compositions need not include aluminum-containing metal salts, and can include other antiperspirant active materials, including other antiperspirant active metal salts. Generally, Category I active antiperspirant ingredients listed in the Food and Drug Administration's Monograph on antiperspirant drugs for over-the-counter human use can be used. In addition, any new drug, not listed in the Monograph, such as aluminum nitrate hydrate and its combination with zirconyl hydroxychlorides and nitrides, or aluminum-stannous chlorohydrates, can be incorporated as an antiperspirant active ingredient in antiperspirant compositions according to the present invention.

Particular types of antiperspirant actives include aluminum zirconium trichlorohydrate and aluminum zirconium tetrachlorohydrate either with or without glycine. A particular antiperspirant active is aluminum zirconium glycine salts with enhanced efficacy due to improved distribution of the molecular species such as described in PCT publication number WO 92/19221, and/or solutions of such salts made with water and/or propylene glycol.

Antiperspirant actives can be incorporated into compositions according to the present invention in amounts in the range of 0.1 – 25% of the final composition, but the amount used will depend on the formulation of the composition. For example, at amounts in the lower end of the broader range (for example, 0.1 - 10% on an actives

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basis), a deodorant effect may be observed. At lower levels the antiperspirant active material will not substantially reduce the flow of perspiration, but will reduce malodor, for example, by acting as an antimicrobial material. At amounts of 10-25% (on an actives basis) such as 15 - 25%, by weight, of the total weight of the composition, an antiperspirant effect may be observed.

The glycol or polyglycol is selected from the group consisting of ethylene glycol, propylene glycol, 1,2-propanediol, diethylene glycol, triethylene glycol, tetraethylene glycol, dipropylene glycol, tripropylene glycol, methyl propanediol, 1,6-hexanediol, 1,3-butanediol, 1,4-butanediol, PEG-4 through PEG-100, PPG-9 through PPG-34, pentylene glycol, neopentyl glycol, trimethylpropanediol, 1,4-cyclohexanedimethanol, 2,2-dimethyl-1,3-propanediol, 2,2,4,4-tetramethyl-1,3-cyclobutanediol, and mixtures thereof. More particular examples of the glycol component include one or more members of the group consisting of propylene glycol, dipropylene glycol, tripropylene glycol, 2-methyl-1,3-propanediol, methyl propylene glycol, low molecular weight (less than 600) polyethylene glycol, low molecular weight (less than 600) polypropylene glycols, and mixtures of any of the foregoing. Propylene glycol is of particular interest because the antiperspirant active is more soluble in this type of glycol. Tripropylene glycol has lower irritancy, but the antiperspirant active is not as soluble in this glycol. Mixtures of glycols may be used to balance these desirable properties.

..... Compositions according to the present invention can be made by first preparing both phases separately and then combining them in the final container:

Non-polar phase- The linear or cyclic silicones and other non-polar ingredients are blended at room temperature in a vessel. Optionally, fragrances can be added at the end.

Polar phase- In general, all of the ingredients except Polymer JR (Polyquaternium-10) are mixed at 300-400 rpm in a separate beaker to make a clear product. Polymer JR is gradually added to the polar phase with stirring. The mixture is then heated to about 40-50 degrees C after the addition of Polymer JR. Stirring is continued until the polar phase is clear. The heat is turned off and the polar phase is allowed to cool to room temperature.

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After cooling of the polar phase is completed, the non-polar phase is added on top of the polar phase.

If a coloring agent is added, it is first dissolved in a selected amount of polar material such as water, or in a non-polar material such as PPG-3 myristyl ether, C12-15 alkyl benzoates (FINSOLV TN from Finetex, Inc.), and low molecular weight organo-substituted polysiloxanes such as polydimethylsiloxane (for example, DC 200 Fluid having a viscosity of 5 centistokes ("cst"); DC 245 Fluid having a viscosity of 3.87 cst, both of which are available from Dow Corning Corp.) and then added to the appropriate phase.

Each phase can be introduced into dispensing containers known to those skilled in the art for roll-ons. The product from the reservoir comes to the top rolling surface of the dispensing container, and from there may be applied to the skin in the axillary regions to deposit sufficient amounts of antiperspirant and/or deodorant active material to reduce body malodor and/or reduce perspiration in axillary regions of the human body.

The components of the conventional roll-on containers can be made of various materials and can have different shapes. The material of the container can be polypropylene, polyethylene terephthalate (PET), high-density polyethylene or glass. The applicator is usually a hollow ball made of polypropylene. The diameter can vary from 10.4 to 35.5 mm, depending on the design of the container. The ball can be assembled directly in the container or with a special insert (ball housing) depending also on the design of the container. The caps can be of different designs (usually made of polypropylene) with smooth or ribbed walls.

Examples of suitable roll-on dispensers include those described in U.S. Design Patent 402,550 to Poisson; U.S. 6,132,126 to Sheffer et al (an adjustable applicator); U.S. 4,030,844 to Lench et al; U.S. Patent 4,021,125 to Berghahn et al; U.S. Patent 4,033,700 to Spatz; U.S. Patent 5,553,957 to Dornbusch et al; WO 00/64302 to Hindustan Lever Ltd.; and WO 01/03541 to Chang; all of which are incorporated by reference herein to the extent they describe roll-on dispensers. These references also include the use of fumed silica.

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The invention may be seen in various forms. For example, one form of the invention has a low viscosity (less than 20 cps) non-polar phase and is free of fumed silica and clays. Alternatively, another choice for this first embodiment is a composition free of clay but which can contain silica. A second embodiment has a non-polar phase made with (a) 5-30% of a cyclomethicone or 5-25% cyclomethicone and up to 5% dimethicone (wherein the dimethicone has a viscosity of less than 5 cst); and (b) 1-10 % of a low viscosity, lipophilic emollient (especially C12-15 alkyl benzoate or PPG-3 myristyl ether). A third embodiment has a non-polar phase made with (a) 5-20% of a cyclomethicone and up to 10% dimethicone (wherein the dimethicone has a viscosity of less than 5 cst); and (b) 1-10 % of a low viscosity, lipophilic emollient (especially C12-15 alkyl benzoate or PPG-3 myristyl ether). A fourth embodiment has a non-polar phase made with (a) 5-30% of a cyclomethicone or 5-25% cyclomethicone and 5% dimethicone (wherein the dimethicone has a viscosity of less than 5 cst); (b) 1-8% of a low viscosity, lipophilic emollient (especially C12-15 alkyl benzoate or PPG-3 myristyl ether or a non-polar C6-20 hydrocarbon (especially one with an "iso" group)). A fifth embodiment is the same as the fourth embodiment and additionally is free of silica and clay. A sixth embodiment can be made with any of the foregoing embodiments in the non-polar phase and a polar phase made with 1-10 % anhydrous ethanol and up to 10% of a glycol as defined above (especially propylene glycol).

Various forms of the invention can be exemplified by the following formulations but these should not be construed as limitations on the invention. Note that all the formulations have the viscosities as noted.

Formulation 1-L

non-polar phase (viscosity less than 20 cps)

- 25 10-25 weight % pseudo silicone (mixture of mineral oil, dodecanoic acid, dodecyl ester, hexadecanoic acid, octadecyl ester, docosanoic acid octadecyl ester from Strahl & Pitsch Inc., West Babylon, NY)
- 1-2 weight % cyclomethicone (Dow Corning Fluid 245)
- 1-3 weight % polybutene (Amoco Corp.)
- 30 1 - 10 weight % PPG-3 myristyl ether (Croda Oleochemicals Inc.)
- optionally 0.5 - 1.0-weight % fragrance.

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polar phase

45 - 58 weight % of Al Zr tetrachlorohydrex gly (30% in water (Z-522 from Summit))

0.1- 0.5 weight % Polyquaternium-10 (Celquat SC 240 C)

2-10 weight % water

5 optionally 1-10 weight % ethanol

Formulation 2-M

non-polar phase (viscosity less than 200 cps)

0.5- 1 weight % Cab-O-Sil (hydrophobically modified amorphous colloidal silica,
Cabot Corp.)

10 2-20 weight % cyclomethicone (DC 245 Fluid)

10-26 weight % dimethicone from Dow Corning Corp.

optionally 0.5 - 1.0 weight % fragrance

polar phase

45 - 58 weight % of Al Zr tetrachlorohydrex gly (30% in water (Z-522 from Summit))

15 0.1- 0.5 weight % Polyquaternium-10 (Celquat SC 240 C)

2-10 weight % water

optionally 1-10 weight % ethanol

Formulation 3-AA

non-polar phase (viscosity less than 20 cps)

20 10-20 weight % cyclomethicone

0.05-0.5 weight % nonionic surfactant (e.g. Emulsogen SRO from Clariant Co., Wayne,
NJ)

0.5-1.0 weight % fragrance

0-5 weight % emollient (such as PPG-3 myristyl ether from Goldschmidt, Hopewell,

25 VA)

polar phase

50-70 weight % (29% active in water) antiperspirant active

10-15 weight % alcohol/glycol (1-10 % anhydrous ethanol + 0-10% propylene glycol)

1-10 weight % water

30 0.1-0.3 weight % thickener Polymer JR (Polyquaternium-10 from Amerchol, Edison,
NJ)

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Formulation 4-BB**non-polar phase (viscosity less than 20 cps)**

20-30 weight % cyclomethicone (DC Fluid 245 from Dow Corning, Midland, MI)

0.05-0.2 weight % fluorinated silicone surfactant (For example, FPD 4668 from Shin-

5 Etsu Co., Japan)

0.5-1.0 weight % fragrance

0-5 weight % emollient (such as PPG-3 myristyl ether)

polar phase

50-60 weight % (29% active in water) antiperspirant active

10 5-15 weight % alcohol/glycol (1-10% anhydrous alcohol + 0-10% propylene glycol)

1-10 weight % water

0.1-0.3 weight % thickener (Polymer JR)

Formulation 5-CC**non-polar phase (viscosity less than 20 cps)**

15 20-35 weight % cyclomethicone/dimethicone (10-35% D5 cyclomethicone + 0-10% dimethicone (< 5 cst))

0.01-0.05 weight % silicone surfactant (For example 5225C, 10% in cyclomethicone from Dow Corning)

20 0.5-1.0 weight % fragrance

0-5 weight % emollient (such as FINSOLV TN from Finetex Inc., Elmwood Park, NJ)

polar phase

50-60 weight % (29% active in water) antiperspirant active

5-15 weight % alcohol/glycol (1-10% anhydrous ethanol + 0-10% propylene glycol)

25 1-10 weight % water

0.1-0.3 weight % thickener (Polymer JR)

Formulation 6-FF**non-polar phase (viscosity less than 20 cps)**

30 10-15 weight % cyclomethicone/dimethicone (5-15% D5 cyclomethicone + 0-10% dimethicone (< 5 cst))

0.01-0.05 weight % silicone surfactant (For example 5225C, 10% in cyclomethicone from Dow Corning)

0.5-1.0 weight % fragrance

0-5 weight % emollient (such as FINSOLV TN)

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107polar phase

60-70 weight % (29% active in water) antiperspirant active

10-20 weight % alcohol/glycol (2-10% anhydrous ethanol + 0-10% propylene glycol)

1-10 weight % water

5 0.1-0.5 weight % thickener (Polymer JR)

Formulation 7-GGnon-polar phase (viscosity less than 20 cps)

10-20 weight % cyclomethicone/dimethicone (5-10% D5 cyclomethicone + 0-10% dimethicone (< 5cst))

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0.5-1.0 weight % fragrance

1-10 weight % emollient (such as PPG-3 myristyl ether)

polar phase

50-70 weight % (29% active in water) antiperspirant active

15 10-20 weight % alcohol/glycol (2-10% anhydrous ethanol + 0-10% propylene glycol)

1-10 weight % water

0.1-0.5 weight % thickener (Polymer JR)

Formulation 8-HHnon-polar phase (viscosity less than 20 cps)

20 20-30 weight % cyclomethicone/dimethicone (10-30% D5 cyclomethicone + 0-10% dimethicone (< 5cst))

-0.05-0.2 weight % silicone surfactant (For example 5225C, 10% in cyclomethicone from Dow Corning)

25 0.5-1.5 weight % fragrance

0-5 weight % emollient (such as FINSOLV TN)

polar phase

50-60 weight % (29% active in water) antiperspirant active

5-15 weight % alcohol/glycol (0-10% anhydrous ethanol + 3-10% propylene glycol)

30 1-10 weight % water

1-4 weight % thickener (Puregel 990, from Grain Processing Co., Iowa)

EXAMPLES

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The following Examples are offered as illustrative of the invention and are not to be construed as limitations thereon. In the Examples and elsewhere in the description of the invention, chemical symbols and terminology have their usual and customary meanings. Numbers for viscosities and molecular weights are averages. In the Examples as elsewhere in this application (a) values for n, m, etc. in formulas, molecular weights and degree of ethoxylation or propoxylation are averages; (b) temperatures are in degrees C unless otherwise indicated; and (c) the amounts of the components are in weight percents based on the standard described; if no other standard is described then the total weight of the composition is to be inferred. Various names of chemical components include those listed in the CTFA International Cosmetic Ingredient Dictionary (Cosmetics, Toiletry and Fragrance Association, Inc., 7th ed. 1997). Mixing techniques used to make the compositions are those conventionally used in the art including those described above.

Examples 1-9: General Method of Making Compositions

Compositions according to the present invention as seen in Examples 1-9 may be made as follows using the amounts and types of ingredients listed under the appropriate Example number. Total percent for each Example is 100%.

20 **Non-polar phase** – All of the ingredients for Part A are combined in a beaker and the mixture is stirred at 300-400 rpm using a Lightnin Mixer Model L 1003 until a homogeneous solution is obtained.

25 **Polar phase** – The ingredients for the polar phase are combined with stirring. If the polar phase contains a modified starch (such as hydroxypropyl starch phosphate), it must be pre-dispersed in a small part of the antiperspirant active solution. The pre-dispersed material is then added to the rest of the antiperspirant active solution with agitation and the mixture is heated to be at 85-95 degrees C. If the polar phase contains Polyquaternium-10, this is pre-dispersed in the active to form a homogeneous dispersion free of lumps. The mixture is then heated to a temperature in the range of

30 40-50 degrees C with agitation until a clear solution is obtained. If the final formulation contains a colorant it must be dissolved in the minimum amount of water and then added in the polar phase.

Combination of the phases in a container --

Each phase is poured into the container in the ratios indicated in the final composition. There is no special order of addition into the container. The polar phase will tend to go to the bottom.

- 5 The method described above can be used to make the following compositions wherein all amounts are weight % based on the total weight of the composition. For these Examples, cyclomethicone is DC 245 from Dow Corning; the surfactant is either a fluorinated silicone surfactant Shin-Etsu FPD-4668 from Shin-Etsu Silicones of America (Akron, Ohio) or Dimethicone copolyol/cyclomethicone 5225C (10%) from
10 Dow Corning; the emulsifier is a sorbitol ester of rapeseed oil (Emulsogen SRO from Clariant Corp., Germany); the silicone fluid is a dimethyl polysiloxane such as DC200 Fluid, 200 cst from Dow Corning, Midland Michigan; the hydrogenated polyisobutene 250 is a branched hydrocarbon from Fanning Corp., Illinois; the antiperspirant active is
15 Al-Zr tetrachlorohydrate gly with a metal:chloride ratio in the range of 0.9:1-1.2:1 as described in U.S. Patent 6,375,937 (obtained from Summit Research Laboratories, Huguenot, NY); a polymeric quaternium ammonium salt of hydroxyethyl cellulose reacted with a trimethyl ammonium substituted epoxide (Polymer JR from Amerchol); a modified starch based polymer, sodium hydroxypropyl starch phosphate (PureGel 990 from Grain Processing Corp.); and Oleath-10 (Volpo 10 from Croda, Inc., Parsippany,
20 New Jersey).

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Table A

Example	1	2	3	4	5	6	7	8	9
Part A									
Cyclomethicone	16.10	25.90	12.00	16.20	18.99	11.7	15.00	26.99	16.30
Dimethi-cone copolyol	0	0	0.02	0	0.01	0	0	0.01	0
Shin-Etsu FPD-4668	0	0.1	0	0	0	0	0	0	0
Emulsogen SRO	0.10	0	0	0	0	0	0	0	0
PPG-3 myristyl ether	3.00	3.00	0	3.00	0	2.5	2.00	2.00	2.80
Silicone fluid	0	0	16.98	0	20.00	0	0	0	0
Hydrogenated polyiso-butene 250	0	0	0	0	0	0	2.20	0	0
Fragrance	0.80	1.00	1.00	0.80	1.00	0.80	0.80	1.00	0.80
Part B									
AP active (28% in water)	67.00	55.00	55.00	70.50	50.00	66	60	55.60	65.98
Propylene glycol	4.00	0	0	5.00	0	0	0	0	9.70
Tripropylene glycol	0	0	0	0	0	9	7	0	0
Polymer JR	0.20	0.20	0.20	0.20	0.20	0.30	0.25	0	0.40
Alcohol (100%)	8.80	9.80	9.80	4.30	4.80	5	9	9.00	0
PureGel 990	0	0	0	0	0	0	0	2.40	0
Additional Water	0	5.00	5.00	0	5.00	4.70	3.75	3.00	4.00
Oleath-10	0	0	0	0	0	0	0	0	0.02
Total	100	100	100	100	100	100	100	100	100
Total water content	48.24	44.6	44.6	50.8	41	52.2	46.9	43.03	51.5
Oil: Water	20:80	30:70	30:70	20:80	40:60	15:85	20:80	30:70	20:80

CLAIMS

What is claimed is:

1. A two-phase, elastomer-free, low viscosity, high water roll-on antiperspirant and/or deodorant composition comprising:
- 5 (A) a non-polar phase having a viscosity up to 200 centipoise and comprising:
- (a) 0.1-40 weight % of a volatile and/or a nonvolatile silicone selected from the group consisting of linear and cyclic organo-substituted polysiloxanes wherein the viscosity is less than 5 centistokes for volatile silicones and in the range of 5-20 centistokes for non-volatile silicones;
- 10 (b) 0-25 weight % of a straight or branched chain hydrocarbon polymer which has an average molecular weight in the range of 450-6000 daltons;
- (c) 0-15 weight % of one or more low viscosity, lipophilic emollients selected from the group consisting of:
- (i) 0-10 weight % of a non-polar hydrocarbon having from 4-30 carbons;
- 15 (ii) 0-10 weight % of a benzoic acid ester selected from the group consisting of C12-C20 benzoate esters;
- (iii) 0-8 weight % of a propoxylated fatty alcohol having 4-16 carbons and 2-14 moles of propoxylation;
- (d) optionally one or more ingredients selected from the group consisting of
- 20 (i) 0-0.2 weight % of a silicone surfactant having an hydrophilic lipophilic balance ≤ 13 ;
- (ii) 0-2 weight % hydrophobically treated amorphous colloidal fumed silica;
- (iii) 0-2 weight % fragrance;
- 25 (iv) 0-1.00 weight % vitamins; and
- (v) 0.0-0.002 weight % coloring agent; and
- (B) a polar phase having a viscosity in the range of 10 - 2,000 centipoise and comprising:
- (a) at least 5 weight % of an antiperspirant active;
- 30 (b) an aqueous component comprising at least 40 % water and a sufficient amount of a C2-3 alcohol, a glycol or a polyhydric alcohol so that the antiperspirant active is dissolved in the aqueous component;

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(c) a thickening agent selected from the group consisting of:

(i) 0.05-2.5 weight % of a water soluble cationic derivative selected from the group consisting of hydroxyethyl cellulose and its copolymers and hydroxypropyl cellulose and its copolymers, provided that the viscosity of the polar phase does not exceed 2,000 cps; and

(ii) 0.1-5 weight % of a starch modified polymer which is a sodium hydroxypropyl starch phosphate;

(d) optionally one or more ingredients selected from the group consisting of

(i) 0-1.0 weight % mica with an average particle size in the range of 10-125;

(ii) an effective amount of a suspending agent;

(iii) an effective amount of an antimicrobial agent;

(iv) 0-5.0 weight % masking agent;

(v) 0-1.0 weight % of a polymer of ethylene oxide; and

(vi) 0-0.5 weight % of a water soluble surfactant having an hydrophilic lipophilic balance ("HLB value") ≥ 10 ;

wherein the ratio of oil phase to water phase is in the range of 15:85-40:60; and

whereby the composition is able to form a temporarily stabilized emulsion after shaking for a period not exceeding 24 hours.

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2. A composition according to Claim 1 which is free of clay.

3. A composition according to Claim 1 which is free of clay and is free of silica.

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4. A composition according to Claim 1 wherein the period does not exceed 15 hours.

5. A composition according to Claim 1 wherein the period is in the range of 1-20 minutes.

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6. A composition according to Claim 1 comprising 5-30 weight % of a linear or cyclic organo-substituted polysiloxane having a viscosity less than 20 centistokes.

7. A composition according to Claim 1 comprising 1-10 weight % of the hydrocarbon polymer.
8. A composition according to Claim 1 or 7 comprising 1-10 weight % of the lipophilic emollients.
9. A composition according to Claim 1 comprising 1-10 weight % of the lipophilic emollients wherein the lipophilic emollients are selected from the group consisting of :
(i) 1-8 weight % of the non-polar hydrocarbon; (ii) 1-8 weight % of the benzoic acid esters; and (iii) 4-6 weight % of the propoxylated fatty alcohol.
10. A composition according to Claim 1 further comprising 0.001-0.01 weight % of the silicone surfactant.
11. A composition according to Claim 1 further comprising 0.1-1 weight % of the hydrophobically treated amorphous colloidal fumed silica.
12. A composition according to Claim 1 comprising 40-70 weight % water and up to 20 weight % of one or more members selected from the group consisting of ethyl alcohol, isopropyl alcohol, a glycol selected from the group consisting of propylene glycol, dipropylene glycol, tripropylene glycol and methylpropylene glycol, and mixtures of any of the foregoing.
13. A composition according to Claim 1 comprising:
10-27 weight % pseudo silicone as a mixture of mineral oil, dodecanoic acid, dodecyl ester, hexadecanoic acid, octadecyl ester, docosanoic acid octadecyl ester,
1-2 weight % cyclomethicone;
1-3 weight % polybutene;
1-10 weight % PPG-3 myristyl ether;
45 - 58 weight % of Al/Zr tetrachlorohydrate as 30% in water or its equivalent;
0.1- 0.5 weight % Polyquaternium-10;
2-10 weight % additional;
optionally 1-10 weight % ethanol; and
optionally 0.5 - 1.0 weight % fragrance.

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14. A composition according to Claim 1 comprising:
0.5- 1 weight % hydrophobically modified amorphous colloidal silica;
2-20 weight % cyclomethicone;
- 5 10-28 weight % dimethicone having a viscosity of 20 cst;
45 - 58 weight % of Al Zr tetrachlorohydrex gly as 30% in water or its equivalent;
0.1- 0.5 weight % Polyquaternium-10;
2-10 weight % additional water;
optionally 1-10 weight % ethanol; and
- 10 optionally 0.5 - 1.0 weight % fragrance.
15. A composition according to Claim 1 comprising:
10-20 weight % cyclomethicone;
0.05-0.5 weight % nonionic surfactant;
- 15 50-70 weight % antiperspirant active as 29% active in water or its equivalent;
10-15 weight % alcohol/glycol mixture as 1-10 % anhydrous ethanol + 0-10%
propylene glycol;
1-10 weight % additional water;
0.3-1 weight % Polyquaternium-10;
- 20 0.5-1.0 weight % fragrance; and
0-5 weight % emollient.
16. A composition according to Claim 1 comprising:
20-30 weight % cyclomethicone;
- 25 0.05-0.2 weight % fluorinated silicone surfactant;
50-60 weight % antiperspirant active as 29% active in water or its equivalent;
5-15 weight % alcohol/glycol mixture as 1-10 % anhydrous ethanol + 0-10% propylene
glycol;
1-10 weight % additional water;
- 30 0.1-0.3 weight % Polyquaternium-10;
0.5-1.0 weight % fragrance; and
0-5 weight % emollient.

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17. A composition according to Claim 1 comprising:
20-35 weight % cyclomethicone/dimethicone as a mixture of 10-35% D5
cyclomethicone + 0-10% of dimethicone with a viscosity of < 5 cst;
- 5 0.01-0.05 weight % silicone surfactant;
50-60 weight % antiperspirant active as 29% active in water or its equivalent;
5-15 weight % alcohol/glycol mixture as 1-10 % anhydrous ethanol + 0-10% propylene
glycol;
1-10 weight % additional water;
- 10 0.1-0.3 weight % Polyquaternium-10;
0.5-1.0 weight % fragrance; and
0-5 weight % emollient.
18. A composition according to Claim 1 comprising:
- 15 10-15 weight % cyclomethicone/dimethicone as a mixture of 5-15% D5
cyclomethicone + 0-10% of dimethicone with a viscosity of < 5 cst;
0.01-0.05 weight % silicone surfactant;
60-70 weight % as 29% active in water or its equivalent;
10-20 weight % alcohol/glycol mixture as 2-10% anhydrous ethanol + 0-10%
- 20 propylene glycol;
1-10 weight % additional water;
0.1-0.5 weight % Polyquaternium-10;
0.5-1.0 weight % fragrance; and
0-5 weight % emollient.
- 25
19. A composition according to Claim 1 comprising:
10-20 weight % cyclomethicone/dimethicone as a mixture of 5-10% D5
cyclomethicone + 0-10% of dimethicone with a viscosity of < 5 cst;
50-70 weight % as 29% active in water or its equivalent;
- 30 10-20 weight % alcohol/glycol mixture as 2-10% anhydrous ethanol + 0-10%
propylene glycol;
1-10 weight % additional water;

0.1-0.5 weight % thickener;
0.5-1.0 weight % fragrance; and
1-10 weight % emollient.

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20. A composition according to Claim 1 comprising:
10-30 weight % cyclomethicone/dimethicone as a mixture of 10-30% D5
cyclomethicone + 0-10% of dimethicone with a viscosity of < 5 cst;
0.05-0.2 weight % silicone surfactant;

- 10 50-60 weight % as 29% active in water or its equivalent;
5-15 weight % alcohol/glycol mixture as 0-10% anhydrous ethanol + 3-10%
propylene glycol;
1-10 weight % additional water;
1-4 weight % thickener;
- 15 0.5-1.5 weight % fragrance; and
0-5 weight % emollient.

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ABSTRACT

A two-phase, elastomer-free, low viscosity, high water roll-on antiperspirant and/or deodorant composition comprising:

(A) a non-polar phase having a viscosity up to 200 centipoise and comprising:

- 5 (a) 0.1-40 weight % of a volatile and/or a nonvolatile silicone selected from the group consisting of linear and cyclic organo-substituted polysiloxanes wherein the viscosity is less than 5 centistokes for volatile silicones and in the range of 5-20 centistokes for non-volatile silicones; (b) 0-25 weight % of a straight or branched chain hydrocarbon polymer which has an average molecular weight in the range of 450-6000
- 10 daltons; (c) 0-15 weight % of one or more of a selected low viscosity, lipophilic emollient; and

(B) a polar phase having a viscosity in the range of 10 - 2,000 centipoise and comprising:

- (a) at least 5 weight % of an antiperspirant active; (b) an aqueous component
- 15 comprising at least 40 % water and a sufficient amount of a C2-3 alcohol, a glycol or a polyhydric alcohol so that the antiperspirant active is dissolved in the aqueous component; and (c) a selected thickening agent;

wherein the ratio of oil phase to water phase is in the range of 15:85-40:60; and whereby the composition is able to form a temporarily stabilized emulsion after shaking

20 for a period not exceeding 24 hours.

GENERAL POWER OF ATTORNEY

(for several international applications filed under the Patent Cooperation Treaty)

(PCT Rule 90.5)

The undersigned person(s):

(Family name followed by given name; for a legal entity, full official designation. The address must include postal code and name of country.)

COLGATE-PALMOLIVE COMPANY

300 Park Avenue

New York, New York 10022

United States of America

hereby appoint(s) the following person as:



agent



common representative

Name and address

(Family name followed by given name; for a legal entity, full official designation. The address must include postal code and name of country.)

Martin B. Barandk, Henry S. Goldfine, Bernard Lieberman, Michael J. McGreal, Rosemary M. Milano, Richard E. Nanfeldt, Ellen Park and Clifford Wilkins of

COLGATE-PALMOLIVE COMPANY

908 River Road

P.O. Box 1343

Placataway, New Jersey 08855-1343

United States of America

to represent the undersigned before



all the competent International Authorities



the International Searching Authority only



the International Preliminary Examining Authority only

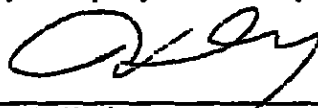
in connection with any and all international applications filed by the undersigned with the following Office

RO/US

as receiving Office

and to make or receive payments on behalf of the undersigned.

Signature(s) (where there are several persons, each of them must sign; next to each signature, indicate the name of the person signing and the capacity in which the person signs, if such capacity is not obvious from reading this power):

Andrew D. Hendry
Senior Vice President, General Counsel and
Secretary

Date: October 16, 2003

PCT (ANNEX - FEE CALCULATION SHEET)

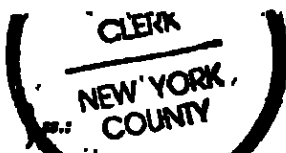
Original (for SUBMISSION)

(This sheet is not part of and does not count as a sheet of the international application)

0	For receiving Office use only	
0-1	International Application No.	
0-2	Date stamp of the receiving Office	
0-4	Form PCT/RO/101 (Annex) PCT Fee Calculation Sheet	
0-4-1	Prepared Using	PCT-SAFE [EASY model] Version 3.50 (Build 0002.153)
0-8	Applicant's or agent's file reference	6789-00
2	Applicant	COLGATE-PALMOLIVE COMPANY
12	Calculation of prescribed fees	fee amount/multiplier Total amounts (USD)
12-1	Transmittal fee T	⇒ 300
12-2-1	Search fee S	⇒ 1818
12-2-2	International search to be carried out by	EP
12-3	International filing fee (first 30 sheets) H	1035
12-4	Remaining sheets 3	
12-5	Additional amount (A) 11	
12-6	Total additional amount A	33
12-7	H + A = I	1068
12-12	EASY Filing reduction R	-74
12-13	Total international filing fee (I-R) I	⇒ 994
12-14	Fee for priority document Number of priority documents requested 1	
12-15	Fee per document (X) 20	
12-16	Total priority document fee: P	⇒ 20
12-17	TOTAL FEES PAYABLE (T+S+H+P)	⇒ 3132
12-19	Mode of payment	authorization to charge deposit account
12-20	Deposit account instructions The receiving Office	United States Patent and Trademark Office (USPTO) (RO/US)
12-20-1	Authorization to charge the total fees indicated above.	✓
12-20-2	Authorization to charge any deficiency or credit any overpayment in the total fees indicated above.	✓
12-20-3	Authorization to charge the fee for priority document.	✓
12-21	Deposit account No.	03-2457
12-22	Date	16 January 2004 (16.01.2004)
12-23	Name and signature	DUNNE, Elizabeth, M. <i>Elizabeth M. Dunne</i>

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252373

I, NORMAN GOODMAN, County Clerk and Clerk of the Supreme Court of the State of New York, in and for the County of New York, a Court of Record, having by law a seal, DO HEREBY CERTIFY pursuant to the Executive Law of the State of New York, that

Rosie S. Dizon

whose name is subscribed to the annexed affidavit, deposition, certificate of acknowledgment or proof, was at the time of taking the same a NOTARY PUBLIC in and for the State of New York duly commissioned, sworn and qualified to act as such; that pursuant to law, a commission or a certificate of his official character, with his autograph signature has been filed in my office; that at the time of taking such proof, acknowledgment or oath, he was duly authorized to take the same; that I am well acquainted with the handwriting of such NOTARY PUBLIC or have compared the signature on the annexed instrument with his autograph signature deposited in my office, and I believe that such signature is genuine.

IN WITNESS WHEREOF, I have hereunto set my hand affixed my official seal this

OCT 30 2001

FEE PAID \$3.00

Norman Goodman

County Clerk and Clerk of the Supreme Court, New York County



Apostille

(Convention de La Haye du 5 Octobre 1961)

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121

1 Country **United States of America**

This public document

2 has been signed by **Norman Goodman**

3 acting in the capacity of **County Clerk**

4 bears the seal/stamp of the county of **New York**

Certified

5 At New York, New York 6 the 30th day of October 2001

7 by Special Deputy Secretary of State, State of New York

8 No NYC-9786540B

9 Seal/Stamp

10 Signature



Aqil M. Qureshi

Aqil M. Qureshi

Special Deputy Secretary of State



Brigard & Castro

SANTA FE DE BOGOTA COLOMBIA

PODER

POWER OF ATTORNEY

Yo (nosotros)

domiciliado(s) en

Nombre(amos) a RAMIRO CASTRO DUQUE y/o JUAN PABLO CADENA SARMIENTO y/o BEATRIZ JARAMILLO S

de Santafé de Bogotá Colombia apoderados verdaderos y legales con poder especial amplio y suficiente para recabar de las oficinas y autoridades colombianas administrativas judiciales y de policía en cualquier instancia o recurso la obtención de patentes de invención registros de marcas diseños industriales modelos de utilidad depósitos de nombres comerciales y enseñanzas registros de derechos de autor y contratos sobre los mismos obtención de certificados de obtentor de variedades vegetales así como sus prórrogas renovaciones anotaciones de traspaso cambios de nombre y/o domicilio elaborar tramitar y registrar contratos de licencia y licencias de cuasquiere clases intervenir como demandante o como demandado en cualquier instancia y recurso ante cualquier juez corporación, funcionario público o autoridad en acciones judiciales administrativas y de policía tales como oposiciones al registro de marcas acciones de caducidad cancelación y nulidad acciones reivindicatorias acciones derivadas de la obtención o explotación de licencias acciones de competencia desleal demandas penales, acciones de indemnización de perjuicios reclamos y observaciones a solicitudes de patentes diseños industriales, modelos de utilidad en el ejercicio de medidas cautelares y en otras acciones o medidas similares

A este efecto lo(s) faculto(amos) para elevar solicitudes formular descripciones, enmiendas protestas declaraciones oposiciones cancelaciones nulidades apelaciones y reclamos pagar impuestos cuotas y gravámenes prescritos por la ley renunciar o desistur a derechos concedidos o en curso de concesión recibir toda clase de documentos y valores dando el descargo respectivo y en general para dar ante dichas autoridades todos los pasos necesarios al efecto indicado y tomar todas las medidas que creyeren conducentes al resguardo de mis (nuestros intereses) con todas las demás facultades legales necesarias

Este poder comprende confirmar en mi (nuestro) nombre como la facultad de desistur, transigir, comprometerse la de sustituir en todo o en parte y revocar sustituciones Asimismo nombro(amos) a RAMIRO CASTRO DUQUE y/o JUAN PABLO CADENA SARMIENTO y/o BEATRIZ JARAMILLO S domiciliado(s) en la Carrera 7 No. 16-56 Piso 8 mis (nuestros) apoderados en Colombia con facultades para recibir notificaciones y designar apoderados judiciales o extrajudiciales

Otorgado y firmado en

hoy de

Firma

Nombre

VICE PRESIDENT &
ASSOCIATE GENERAL COUNSEL
TRADEMARK

I (We)

COLGATE-PALMOLIVE COMPANY, a Delaware corporation, of 300 Park Avenue, New York, New York 10022, U. S. A.

Heraby appoint RAMIRO CASTRO DUQUE and/or JUAN PABLO CADENA SARMIENTO and/or BEATRIZ JARAMILLO S

of Santafé de Bogotá Colombia my (our) true and lawful attorneys with special ample and sufficient power to obtain from the Colombian administrative judicial and police offices and authorities in any instance privileges of patents of invention registration of trademarks Industrial designs and utility models registration of commercial names and emblems registration of copyright and contracts related thereto certificates of obtainers of vegetable varieties as well as extensions renewals and recordal of assignments and changes of name and domicile related to the above to prepare prosecute and register licenses of any kind to act as plaintiff or defendant in any instance or recourse and before any judge corporation public official or authority in judicial administrative and police actions such as oppositions to the registration of trademarks caducity cancellation and nullity actions claim actions derived from the obtaining or exploitation of licenses action of unfair competition penal demands actions of indemnities for damages claims or observations on patent applications, models Industrial designs and utility models in the exercise of preventive measures and in other actions or similar proceedings

To that effect they are hereby empowered to file applications formulate descriptions amendments protest declarations oppositions cancellations nulities, appeals and claims to pay taxes quotas and assessments prescribed by law renounce or waive the rights granted or in the process of granting to receive all kind of documents and valuables giving the respective release of receipt and in general to take before said authorities the necessary steps to such effect, and any measures that they may deem pertinent to the safeguard of my (our) interest(s) with all the other necessary legal powers

This power includes the faculty to ratify or confirm desert, settle and compromise on my (our) behalf and to substitute this power in whole or in part and to revoke substitutions At the same time I (We) hereby appoint RAMIRO CASTRO DUQUE and/or JUAN PABLO CADENA SARMIENTO and/or BEATRIZ JARAMILLO S

domiciled in Carrera 7 No 16-56 Piso 8 my (our) attorney(s) in fact, with powers to receive notifications and to designate judicial and extrajudicial attorneys

Granted and signed in New York, N.Y.

this OCT 29 2001 day of

Signature

Name

CERTIFICADO NOTARIAL (SOCIEDAD)

NOTARIAL CERTIFICATE (CORPORATION)

Hoy de de
personalmente compareció ante mí

a quien conozco y de quien me consta que firmó el
anterior documento debidamente juramentado declaro
y dijo que él es

de

Sociedad legalmente construida para un periodo de
duración que aún no ha terminado, que el declarante
está autorizado por dicha compañía para conferir este
poder que el sello estampado por él al pie de tal poder
en nombre y representación de la expresada compañía
es el sello oficial de ella, y que el objeto para el cual se
confiere este instrumento está comprendido dentro del
de la sociedad

El suscrito Notario hace constar que tuvo a la vista las
pruebas de la existencia de la sociedad

Estado de
con fecha

y que quien confiere el presente poder es su
representante

On this OCT 29 2001 day of of
personally appeared before me

to me known and known to me to be the person who
signed the foregoing instrument who being by me duly
sworn did depose and say that he (she) is the

VICE PRESIDENT &
ASSOCIATE GENERAL COUNSEL
TRADEMARK
COLGATE-PALMOLIVE COMPANY

Which is legally constituted for a term not yet expired,
that deponent is authorized by said Company to confer
this Power of Attorney that the seal affixed hereunto
by the deponent in the name and on behalf of said
Corporation is the corporate seal thereof and that the
purpose for which this instrument is granted is
included within the corporate purpose of company

The undersigned Notary Public attests that he has seen
the documents that prove the existence of the
company

State of Delaware
under date of May 13, 1997

and that he (she) who grants the present power of
attorney is its Representative

Notario Público (sello)

Notary Public (Seal)

CERTIFICADO NOTARIAL
PERSONA NATURAL

ROSIE S. DIZON
Notary Public State of New York
No. 31-4941117
Qualified in New York County
Commission Expires Aug 15, 2002

Hoy de de compareció(eron)
ante mí

On this OCT 29 2001 day of of
personally appeared before me

SCOTT E THOMPSON

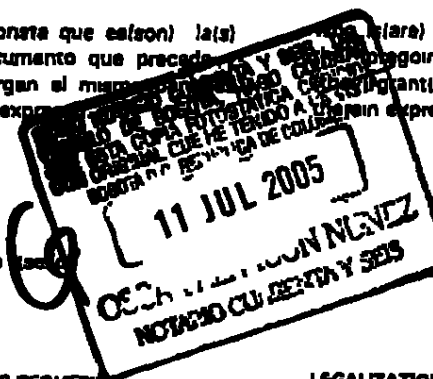
a quien (es) conozco y me consta que es(son) la(s)
persona(s) firmante(s) del documento que precede y que he
quien(es) declara(n) que otorgan el mismo para los
fines y propósitos que en él se expresan

Notario Público (sello)

Notary Public (Seal)

LEGALIZACION POR APOSTILLA ES REQUERIDA

LEGALIZATION BY
ROSIE S. DIZON
Notary Public State of New York
No. 31-4941117
Qualified in New York County
Commission Expires Aug 15 2002



124

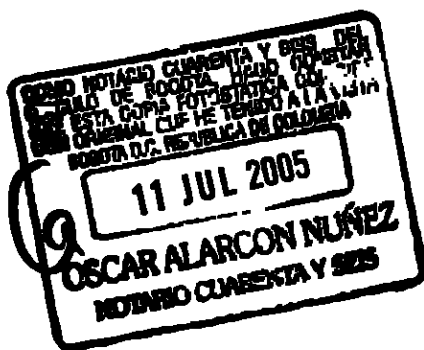
APOSTILLE

(Convención de La Haya del 5 de Octubre de 1961)

- 1 País ESTADOS UNIDOS DE AMERICA**
Este documento publico
- 2 ha sido firmado por Norman Goodman**
- 3 actuando en capacidad de Oficial del Condado**
- 4 lleva el sello/timbre del condado de New York**

CERTIFICADO

- 5 en New York, New York**
- 6 el 30 de Octubre de 2001**
- 7 por Secretario de Estado Encargado Especial, Estado de New York**
- 8 No NYC-9786540B**
- 9 Sello/Timbre**
- 10 Firma**
(Firma)
Aquil M Qureshi
Secretario de Estado Encargado Especial



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TRADUCCIÓN SIMPLE AL ESPAÑOL del Certificado Notarial y el la apostilla que vienen
junto con el poder dado por Colgate-Palmolive Company, a Delaware Corporation,
domiciliada en 300 Park Avenue, New York, New York, Estados Unidos de América a
Ramiro Castro Duque y/o Juan Pablo Cadena Sarmiento y/o Beatriz Jaramillo S
domiciliados en la Carrera 7 # 16-56 P 9, Bogotá

Certificado Notarial

Estado de New York)
) ss
Condado de New York)

252373

Yo, NORMAN GOODMAN, Oficial del Condado y Oficial de la Corte
Suprema del Estado de New York, en y para el Condado de New York, un Tribunal
de Registros, que tiene un sello por ley

CERTIFICO POR MEDIO DE LA PRESENTE de acuerdo con la Ley
Ejecutva del Estado de New York, que

Rosie S Dizon

cuyo nombre está suscrito al acta notanal, deposición, certificado de
reconocimiento o prueba, era al momento de tomar el mismo NOTARIO PUBLICO
en y para el Estado de New York debidamente comisionado, juramentado y
calificado para actuar como tal, que de acuerdo con la ley, una comisión o un
certificado de este carácter oficial, con su firma autógrafa ha sido presentada en
mi oficina, que al momento de tomar tal prueba, reconocimiento o juramento,
estaba debidamente autorizado para tomar el mismo, que estoy bien familiarizado
con la escritura de tal NOTARIO PUBLICO o he comparado la firma en el
instrumento anexo con la firma autógrafa depositada en mi oficina, y creo que tal
fiema es genuina

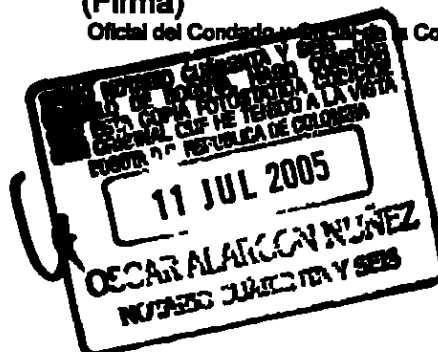
COMO TESTIGO DE LO MISMO, he fijado al presente mi firma t mi sello
oficial este

30 de Octubre de 2001

TARIFA PAGADA \$3 00

(Firma)

Oficial del Condado y Oficial de la Corte Suprema, Condado de New York





ORGANIZACION ELECTORAL
REGISTRADURIA NACIONAL DEL ESTADO CIVIL

GAVIRI A

126 + 27



REGISTRO CIVIL DE DEFUNCION

Indicativo
Serial

5562241

Datos de la oficina de registro									
Clase de oficina:	Registraduría	Notaría	☒	Consulado		Corregimiento		Imp. de Policía	
Código 9795									
País: Colombia Cundinamarca BOGOTA D.C. NOTARIA 32.									

Datos del inscrito	
Apellidos y nombres completos	
CASTRO DUQUE RAMIRO	
Documento de identificación (Clase y número)	Sexo (en Letras)
C.C. No. 170322 DE BOGOTA	MASCULINO

Datos de la defunción	
Lugar de la Defunción País Departamento Municipio Corregimiento o Inspección de Policía	
COLOMBIA CUNDINAMARCA BOGOTA D.C.	
Fecha de la defunción	Hora
Año 2004 Mes 10 Día 30	04:10 PM
Número de certificado de defunción	
A- 2094375	
Presunción de muerte	
Año Mes Día	
Fecha de la sentencia	
Año Mes Día	
Documento presentado	Nombre y cargo del funcionario
Autorización judicial ☐ Certificado Médico ☒	ANDRES DIAZ CAMPOS.- R.M. No. 79982662

Datos del denunciante	
Apellidos y nombres completos	
EDGAR DAVID REGINO II.	
Documento de identificación (Clase y número)	Firma
C.C. No. 15.030.154 DE LORICA/ CORDOBA	

Primer testigo	
Apellidos y nombres completos	
Documento de identificación (Clase y número)	
Firma	

Segundo testigo	
Apellidos y nombres completos	
Documento de identificación (Clase y número)	
Firma	

Fecha de inscripción	
Año 2004 Mes 10 Día 02	Notario y firma del funcionario que inscribe
BLANCA RESTREPO	

PADRES: ALFONSO CASTRO	
MERCEDES DUQUE.	

ORIGINAL PARA LA OFICINA DE REGISTRO

NOTARIA 32

DEL CIRCULO DE SANTA FE DE BOGOTA, D.C.

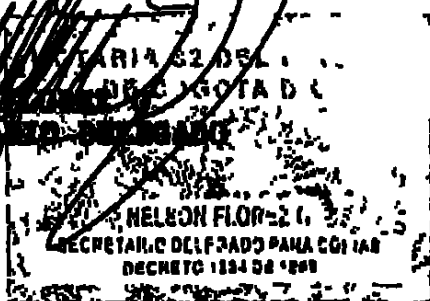
Germán Eleázar Moreno L.
Notario

COMO SECRETARIO DELEGADO DE LA NOTARIA TREINTA Y DOS (32) DEL
CIRCULO DE BOGOTA

CERTIFICO, QUE:

La presente acta es fiel copia del original tomada del registro
civil de defunciones serial indicativo número **556224**
que expido en la ciudad de Bogotá D.C. hoy **05 NOV 2004**

SECRETARIO DELEGADO



128
127

SUPERINDUSTRIA Y COMERCIO
Radicacion : 05077630 00000000 Folios: 127
Fecha (MD): 2005-08-05 16:48:19
Tramite : 011 PCT-PATENT 379 FASE NNCI 411 PRESENTA
Dependencia: 2020 DIVISION DE NUEVAS CREACIONES

REQUISITOS NECESARIOS PARA PRESENTACION Y AGILIZACION DEL TRAMITE

	USUARIO	RADICADOR
PATENTE DE INVENCION ✓	()	()
MODELO DE UTILIDAD	()	()
- Indicación de que se solicita la concesión de una patente.	()	()
- Datos de identificación del solicitante o de la persona que se presenta la solicitud.	()	()
- Descripción de la invención.	()	()
- Dibujos de ser estos pertinentes.	()	()
- Comprobante de Pago de las tasas establecidas.	()	()

COMPLETA () INCOMPLETA ()

DISEÑO INDUSTRIAL ()

- Indicación de que se solicita el registro de Diseño Industrial	()	()
- Datos de identificación del solicitante o de la persona que presenta la solicitud.	()	()
- Representación gráfica o fotográfica del Diseño Industrial o muestra del Material que incorpora el diseño.	()	()
- Comprobante de pago de las tasas establecidas	()	()

COMPLETA () INCOMPLETA ()

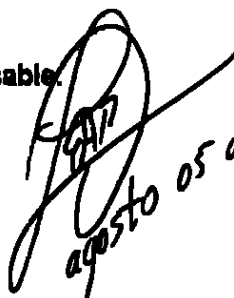
ESQUEMA DE TRAZADO ()

- Indicación de que solicita el registro de un Esquema de trazado.	()	()
- Datos de identificación del solicitante o de la persona que presenta La solicitud.	()	()
- Representación gráfica del esquema de trazado	()	()
- Comprobante de pago de las tasas establecidas.	()	()

COMPLETA () INCOMPLETA ()

Firma Responsable:

Fecha:


agosto 05 de 2005

125
128

REPUBLICA DE COLOMBIA
SUPERINTENDENCIA DE INDUSTRIA Y COMERCIO

Bogotá,
2020

Doctor(a)
CADENA SARMIENTO JUAN PABLO
Apoderado(a) y/o Representante de
COLGATE PALMOLIVE COMPANY

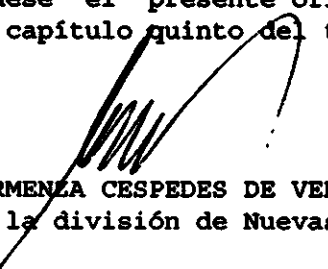
REFERENCIA	Radicación No.	05 77638
	Solicitud internacional	US2004/001218
	Fecha inicio fase nacional	17/08/2005
	Trámite	11
	Evento	379
	Actuación	430
	Oficio No.	2160

Como resultado del examen de forma, realizado con fundamento en el artículo 38 de la Decisión 486 de la Comisión de la Comunidad Andina, artículo 27 del Tratado de Cooperación en Materia de Patentes (PCT), regla 51 bis del Reglamento y Circular Única de la Superintendencia de Industria y Comercio, se le comunica que:

1 La solicitud no contiene la copia del documento en que consta la cesión del derecho a la patente del inventor al solicitante o a su causante. (Art. 26-k) Decisión 486.

En cumplimiento de lo dispuesto por el artículo 39 de la Decisión 486, se le requiere para que dentro del término de dos meses siguientes a la fecha de notificación del presente oficio, complete los requisitos anteriormente enunciados. En caso de no dar cumplimiento al presente requerimiento, la solicitud se considerará abandonada y perderá su prelación.

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


ALIX CARMENZA CESPEDES DE VERGEL
Jefe de la división de Nuevas Creaciones

El anterior requerimiento fue notificado por fijación en lista de fecha 15 SET. 2005
adpal