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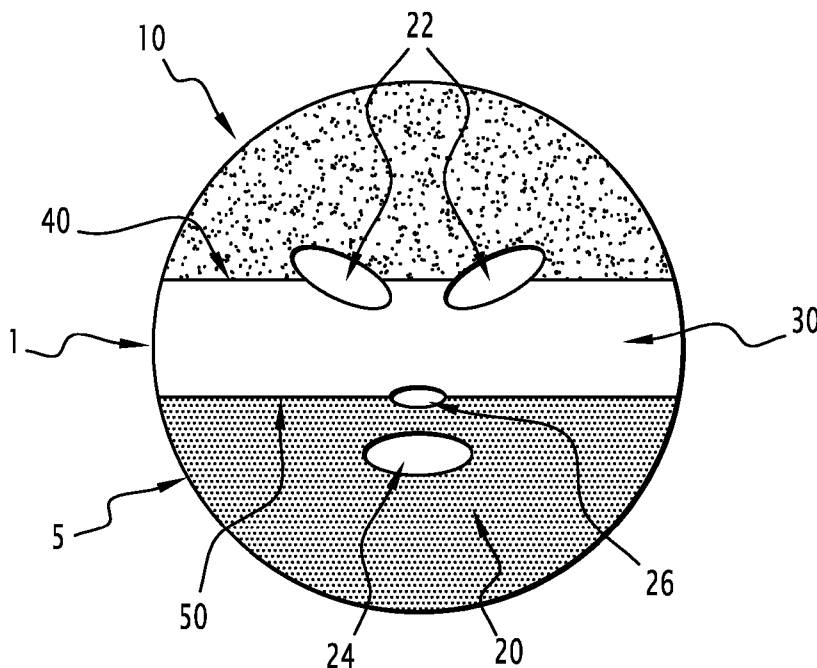
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(54) Title: MULTI COSMETIC COMPOSITIONS



**FIG.1**

(57) Abstract: The invention relates to a single kit comprising at least a first cosmetic composition and a second cosmetic composition, wherein said first cosmetic composition is a polar formulation and wherein said second cosmetic composition is a non-polar formulation; and a method of cosmetic care using said kit. The invention also relates to multi-functional surface solid support.



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## MULTI COSMETIC COMPOSITIONS

### Field of the invention

The present invention relates to the field of cosmetic compositions which are applied  
5 onto a solid support to deliver a cosmetic care to a subject in need thereof.

The invention relates more specifically to a single kit comprising at least a first  
cosmetic composition and a second cosmetic composition, to a multi-functional surface  
solid support, and to methods for preparing same. The invention relates to a method of  
cosmetic care, and more specifically to a cosmetic multi-care. These compositions are to  
10 be applied onto distinct targeted zones of a keratinic material of a subject but in close  
spatial connection.

### Background

Cosmetic compositions are combined with substrates such as nonwovens, paper or  
15 polymeric film to enhance their functionality as well to provide new sensorial experience to  
consumers. Wipes, facial mask and pads are typical examples of such combination  
products. In general, the substrate is impregnated by one cosmetic composition and  
packaged for sale. The functionality of these products mainly depends broadly on the  
functionality of the cosmetic composition and more directly on the active ingredients used  
20 in the cosmetic composition for example: Cleansing, makeup removal and refreshing are  
targeted in wipes, while for facial mask moisturisation, whitening and antiageing is  
generally targeted.

As keratinic structure of the integumentary system varies from region to region of a  
subject, the care needed for these different regions are different. Therefore, there is need  
25 for developing a method or process, wherein different regions can be treated  
simultaneously according to a specific care benefit for that each particular region. More  
particularly, as the lipo-protein structure of the face varies from region to region, the  
nourishment needed for different regions of face are different based on the type of  
remuneration required. Therefore there is need for developing a method or process  
30 wherein different regions of face can be treated simultaneously with a particular skincare  
composition for skin benefit for that particular region.

The application of different topical cosmetic compositions on required region is quite  
apparent but it is not convenient for the consumer to have several distinct cosmetic  
compositions and to apply them in appropriate quantity at different regions. Therefore  
35 there is need of a single product which is composed of a multi-cosmetic compositions and  
a carrier for them.

Though the process of imbibing multi-cosmetic compositions is already taught in the prior art; the problem of restricting the interaction of multiple cosmetic compositions with each other is not being addressed. It is apparent that unwanted interference of one cosmetic composition in close spatial connection with the other in the substrate will lead at least to:

1. Reduction of the activity of active ingredients
2. Delivery of active ingredients to unwanted/ undesired areas.

There is need for developing such single products which oppose the interaction between cosmetic compositions embedded on a single substrate.

The present invention aims to provide a solution to the above mentioned problems.

More particularly, the invention aims to provide a more convenient way for the consumer to apply several distinct cosmetic compositions, preferably in appropriate quantity, at different regions. The invention also aims to limit the delivery of active ingredients to unwanted/ undesired area(s) of a keratinic material of a subject in case of application of multiple cosmetic compositions in multiple areas by way of a single product or device. The invention also aims to limit the potential reduction of the activity of active ingredients in case of application of multiple cosmetic compositions in multiple areas by way of a single product or device. More generally, the invention aims to overcome the problems linked to interaction of multiple cosmetic compositions in case of application of multiple cosmetic compositions in multiple areas by way of a single product or device.

The inventors have identified that increasing the composition viscosity can control the problem of overlapping of multiple cosmetic compositions in case of application of multiple cosmetic compositions in multiple skin areas by way of a single product or device. Such increase in composition viscosity constrains the delivery of actives from substrate to skin thereby compensating its efficacy. Also by increase in the viscosity of cosmetic compositions; sensorial profile gets compromised which is unacceptable by consumers for a substrate based product. Therefore, the invention further aims to overcome the technical problem of compromising sensorial profile provided by such products while overcoming other above-recited problems.

The present innovation addresses the solutions of above mentioned problems by providing an innovative approach.

It has been surprisingly discovered that by controlling the polarity (hydrophilic or lipophilic character) of two compositions restricts the overlapping of multiple composition on a single substrate without increasing the viscosity of composition.

Polarity here relates to HLB of formulation calculated by using standard HLB equation (Griffin's method). Here non-polar formulations present HLB from 4 to 9 whereas polar formulations present HLB value from 10 to 16.

5 The invention relates more specifically to the combination, or use in combination, on a single solid support of at least one first cosmetic composition and at least one second cosmetic composition, wherein said first cosmetic composition is a polar formulation and wherein said second cosmetic composition is a non-polar formulation, for providing a cosmetic care, preferably a cosmetic multi-care. Said solid support is defined as a manufactured product or device and is not the tegumentary system of a subject. Said support is suitable for application onto at least one part of the tegumentary system of a subject, notably to apply or put in contact said cosmetic compositions onto or with said part of tegumentary system.

10 The integumentary system is the organ system that protects the body from various kinds of damage, such as loss of water or abrasion from outside. The system comprises the skin and its appendages (including hair, scales, feathers, hooves, and nails). The human skin (integument) is composed of a minimum of 3 major layers of tissue: the epidermis; dermis; and hypodermis.

15 The invention more particularly relates to a single kit comprising at least a first cosmetic composition and a second cosmetic composition, wherein said first cosmetic composition is a polar formulation and wherein said second cosmetic composition is a non-polar formulation.

In one embodiment, said polar formulation is selected from the group consisting of aqueous gels, aqueous dispersions, emulsions with water as continuous phase in the emulsion.

25 In one embodiment, said non-polar formulation is selected from the group consisting of anhydrous silicone formulation, non-silicone based gels or emulsion with oil as continuous phase in the emulsion.

Polar formulations are essentially those selected from the group consisting of compositions having a HLB of 10 to 16.

30 Non-polar formulations are essentially those selected from the group consisting of compositions having a HLB of 4 to 9.

A method to calculate the HLB of a formulation or phase is found in *The HLB system: A time saving guide to emulsifier selection* from ICI Americas Inc, which is incorporated here by reference, notably *Chapters 1 and 2*. Such a method is summarized as follows:

In a formulation or phase comprising Emulsifiers X and Y, wherein Emulsifiers X (X representing the HLB value of this emulsifier) is present at C1% by weight in the formulation and emulsifiers Y (Y representing the HLB value of this emulsifier) is present at C2 % by weight in the formulation ; the total HLB of phase or formulation will be:

$$C1 \cdot X + C2 \cdot Y / (C1 + C2)$$

The emulsion physiological form may for example range from liquid to shear thinning semi-liquid form, characterized by rotational rheology with a break point at 60 to 70 s<sup>-1</sup> and G'-G'' cross over at 240 s<sup>-1</sup> for oscillation rheology (Anton- Paar MR501 rheometer) using Anton-Paar spindle 2 rheology and oscillation standard measurement protocol, temperature 25°C (water bath/ peltier). The measurements are preferably performed by Cylinder measuring system CC27 geometry. The measurement is preferably done for Viscosity vs Shear rate where Shear rate is varied from 0 to 1000 s<sup>-1</sup>. The break point of the curve is determined as the point of shear rate ( $\dot{\gamma}$ ) where there is a pulse drop in Viscosity ( $\dot{\eta}$ ). The oscillation measurements are preferably performed by using the Frequency Sweep Method on Oscillation Mode of Rheology Measurement. Shear stress controlled frequency sweeps at a constant shear stress amplitude of  $\tau = 1.2$  Pa is carried out in order to study the time-dependent behavior and structural character of the substance. The angular Frequency may be varied from 10<sup>-2</sup> to 10<sup>2</sup> to plot G' and G'' vs Angular frequency ( $\omega$ ) curve.

Suitable aqueous gels (or hydrogels) contain from about 0.1 to 99% water and from about 1-99.9% of other cosmetic ingredients. Gels consist of a solid three-dimensional network that spans the volume of a liquid medium and ensnares it through surface tension effects. Hydrogel is a network of polymer chains that are hydrophilic, sometimes found as a colloidal gel in which water is the dispersion medium. Hydrogels are highly absorbent natural or synthetic polymers. Aqueous gels according to the present invention contain predominantly polar compounds.

Anhydrous compositions generally contain less than about 1% water, in addition to 0.1 to 99.9% oils, and optionally other ingredients.

In one embodiment, said second cosmetic composition is a water-in-oil emulsion.

Emulsions (oil in water or water in oil) generally comprise from about 0.1 to 99.9% water and from about 0.1 to 99.9% oil.

Oil-in-water and water-in-oil emulsions are well known in the art of cosmetics.

The composition according to the invention may further contain compounds that are common in the cosmetics field, such as hydrophilic or lipophilic active agents, hydrophilic or lipophilic gelling agents, preserving agents, antioxidants, fragrances, fillers, screening agents, dyes, lipid vesicles, etc.

The afore mentioned compositions may contain one or more of the following ingredients.

1. Oils: The term oil refers to a hydrophobic liquid compound at ambient temperature. Suitable oils include silicones, esters, vegetable oils, synthetic oils, including but not limited to those set forth herein. The oils may be volatile or non-volatile, and are preferably in the form of a pourable liquid at room temperature. The term "volatile" means that the oil has a measurable vapor pressure or a vapor pressure of at least about 2 mm of mercury at 20° C. The term "non-volatile" means that the oil has a vapor pressure of less than about 2 mm of mercury at 20° C.

- A. Volatile Oils: Suitable volatile oils generally have a viscosity ranging from about 0.5 to 5 centistokes at 25° C and include linear or cyclic silicones, paraffinic hydrocarbons, or mixtures thereof.

- a. *Volatile silicones*: Cyclic silicones are one type of volatile silicone that may be used in the composition; also suitable are linear volatile silicones. Cyclic and linear volatile silicones are available from various commercial sources including Dow Corning Corporation and General Electric. The Dow Corning linear volatile silicones are sold under the tradenames Dow Corning 244, 245, 344, and 200 fluids. Suitable branched volatile silicones include alkyl trimethicones such as methyl trimethicone, ethyl trimethicone, propyl trimethicone, butyl trimethicone and the like.

- b. *Volatile Paraffinic Hydrocarbons*: Examples of volatile paraffinic hydrocarbons include branched or straight chained hydrocarbons (e.g., C3-C20 hydrocarbons such as isoparaffins, isoeicosane, isohexadecane and isododecane). Such paraffinic hydrocarbons are available from Presperse under trade name Permethyl 99A, Permethyl 101A, SIClone SR5.

- B. Non-Volatile Oils: A variety of non-volatile oils are also suitable for use in the compositions of the invention. The non-volatile oils generally have a viscosity of greater than about 5 to 10 centistokes at 25° C, and may range in viscosity up to about 1,000,000 centistokes at 25° C. Examples of non-volatile oils include, but are not limited to:-

- a. *Esters*: Suitable esters are mono-, di-, and triesters. The composition may comprise one or more esters selected from the group, or mixtures thereof. Examples of monoester oils that may be used in the compositions of the invention include hexyl laurate, butyl isostearate, hexadecyl isostearate, cetyl palmitate, isostearyl neopentanoate, stearyl heptanoate, isostearyl

isononanoate, stearyl lactate, stearyl octanoate, stearyl stearate, isononyl isononanoate, and so on.

Examples of diester oils that may be used in the compositions of the invention include e.g. diisostearyl malate, neopentyl glycol dioctanoate, dibutyl sebacate, dicetearyl  
5 dimer dilinoleate, dicetyl adipate, diisocetyl adipate, diisononyl adipate, diisostearyl dimer dilinoleate, diisostearyl fumarate, dioctyl malate, and so on.

Examples of triesters include esters of arachidonic, citric, or behenic acids, such as triarachidin, tributyl citrate, triisostearyl citrate, tri C<sub>12-13</sub> alkyl citrate, tricaprylin, tricaprylyl  
10 citrate, tridecyl behenate, trioctyldodecyl citrate, tridecyl behenate; or tridecyl cocoate, tridecyl isononanoate, and so on. Esters suitable for use in the composition are further described in the C.T.F.A. Cosmetic Ingredient Dictionary and Handbook, under the classification of "Esters".

b. *Hydrocarbon Oils*: It may be desirable to incorporate one or more non-volatile hydrocarbon oils into the composition. Examples of such hydrocarbon oils  
15 include C24-28 olefins, C30-45 olefins, C20-40 isoparaffins, hydrogenated polyisobutene, polyisobutene, polydecene, hydrogenated polydecene, mineral oil, pentahydrosqualene, squalane, and mixtures thereof.

c. *Glyceryl Esters of Fatty Acids*: Synthetic or naturally occurring glyceryl esters of fatty acids, or triglycerides, are also suitable for use in the compositions.  
20 Both vegetable and animal sources may be used. Examples of such oils include castor oil, lanolin oil, caprylic/capric/triglycerides, sweet almond oil, apricot kernel oil, sesame oil, camelina sativa oil, tamanu seed oil, coconut oil, corn oil, cottonseed oil, linseed oil, ink oil, olive oil, palm oil, illipe butter, rapeseed oil, soybean oil, grapeseed oil, sunflower seed oil, walnut oil, and the  
25 like.

Also suitable are synthetic or semi-synthetic glyceryl esters, such as fatty acid mono-, di-, and triglycerides which are natural fats or oils that have been modified, for example, mono-, di- or triesters of polyols such as glyceryl stearate, diglyceryl diisosteate,  
30 ricinoleate, glyceryl dioleate, glyceryl diisostearate, glyceryl tetraisostearate, glyceryl trioctanoate, diglyceryl distearate, glyceryl linoleate, glyceryl myristate, glyceryl isostearate, PEG castor oils, PEG glyceryl oleates, PEG glyceryl stearates, PEG glyceryl tallowates, and so on.

d. *Non-volatile Silicones*: Non-volatile silicone oils both water soluble and water insoluble, are also suitable for use in the composition. Such silicones  
35 preferably have a viscosity ranging from about greater than 5 to 800,000 cst,



preferably 20 to 200,000 cst at 25° C. Suitable water insoluble silicones include amine functional silicones such as amodimethicone. Examples of non-volatile silicones include phenyl trimethicone, or trimethylsiloxyphenyl dimethicone. Other examples include alkyl dimethicones such as cetyl dimethicone. Phenyl trimethicone can be purchased from Dow Corning Corporation under the tradename 556 Fluid. Trimethylsiloxyphenyl dimethicone can be purchased from Wacker under the tradename PDM-1000. Cetyl dimethicone, also referred to as a liquid silicone wax, may be purchased from Dow Corning as Fluid 2502, or from Evonik DeGussa under the trade names Abil Wax 9801, or 9814.

2. Humectants: The compositions of the invention may also contain one or more humectants. Examples of suitable humectants include glycols, sugars, and the like. Suitable glycols are in monomeric or polymeric form and include polyethylene and polypropylene glycols such as PEG 4-200, which are polyethylene glycols having from 4 to 200 repeating ethylene oxide units; as well alkylene glycols such as propylene glycol, butylene glycol, pentylene glycol, and the like. Suitable sugars, some of which are also polyhydric alcohols, are also suitable humectants. Examples of such sugars include glucose, fructose, honey, hydrogenated honey, maltose, mannitol, sorbitol, sucrose, xylitol, xylose, trehalose, and so on. Also suitable is urea or sugar derivatives.

3. Surfactants: If desired, the compositions of the invention may contain one or more surfactants or emulsifiers. This is particularly desirable when the composition is in the form of an aqueous gel or emulsion. If present, the surfactant or emulsifier may range from about 0.001 to 50%, preferably from about 0.005 to 40%, more preferably from about 0.01 to 35% by weight of the total composition. Suitable surfactants or emulsifiers may be silicone or organic, nonionic, anionic, amphoteric or zwitterionic. Such surfactants include, but are not limited to, those described herein.

A. Silicone Surfactants: Suitable silicone surfactants include polyorganosiloxane polymers that have amphiphilic properties, for example contain hydrophilic radicals and lipophilic radicals. These silicone surfactants may be liquids or solids at room temperature.

a. *Dimethicone Copolyols or Alkyl Dimethicone Copolyols*: One type of silicone surfactant that may be used is generically referred to as dimethicone copolyol or alkyl dimethicone copolyol. It may be either a water-in-oil or oil-in- water

surfactant having an Hydrophile/Lipophile Balance (HLB) ranging from about 2 to 18. Preferably the silicone surfactant is a nonionic surfactant having an HLB ranging from about 2 to 12, preferably about 2 to 10. One type of silicone surfactant is called, generically, cetyl dimethicone copolyol or lauryl dimethicone copolyol respectively.

In some cases the number of repeating ethylene oxide or propylene oxide units in the polymer are also specified, such as a dimethicone copolyol that is also referred to as PEG- 15/PPG-10 dimethicone, which refers to a dimethicone having substituents containing 15 ethylene glycol units and 10 propylene glycol units on the siloxane backbone. It is also possible for one or more of the methyl groups in the above general structure to be substituted with a longer chain alkyl (e.g. ethyl, propyl, butyl, etc.) or an ether such as methyl ether, ethyl ether, propyl ether, butyl ether, and the like.

Examples of silicone surfactants are those sold by Dow Corning under the trade name 5225C Cosmetic composition Aid, having the CTFA name cyclopentasiloxane (and) PEG/PPG-18/18 dimethicone; or Dow Corning 190 Surfactant having the CTFA name PEG/PPG-18/18 dimethicone; or Dow Corning 193 Fluid, Dow Corning 5200 having the CTFA name lauryl PEG/PPG-18/18 methicone; or Abil EM 90 having the CTFA name cetyl PEG/PPG- 14/ 14 dimethicone sold by Goldschmidt-Evonik; or Abil EM 97 having the CTFA name bis-cetyl PEG/PPG- 14/14 dimethicone sold by Goldschmidt-Evonik; or Abil WE 09 having the CTFA name cetyl PEG/PPG-10/1 dimethicone in a mixture also containing polyglyceryl-4 isostearate and hexyl laurate; or KF-601 1 sold by Shin-Etsu Silicones having the CTFA name PEG-1 1 methyl ether dimethicone; KF-6012 sold by Shin-Etsu Silicones having the CTFA name PEG/PPG-20/22 butyl ether dimethicone; or KF-6013 sold by Shin-Etsu Silicones having the CTFA name PEG-9 dimethicone; or KF-6015 sold by Shin-Etsu Silicones having the CTFA name PEG-3 dimethicone; or KF-6016 sold by Shin-Etsu Silicones having the CTFA name PEG-9 methyl ether dimethicone; or KF-6017 sold by Shin-Etsu Silicones having the CTFA name PEG- 10 dimethicone; or KF-6038 sold by Shin-Etsu Silicones having the CTFA name lauryl PEG-9 polydimethylsiloxylethyl dimethicone.

*b. Crosslinked Silicone Surfactants:* Crosslinked silicone surfactants, often referred to as emulsifying elastomers are suitable. Typically these polyoxyalkylenated silicone elastomers are crosslinked organopolysiloxanes that may be obtained by a crosslinking reaction. .Examples, Polyoxyalkylenated silicone elastomers that may be used include those sold by Shin-Etsu Silicones under the names KSG-21 , KSG-20, KSG-30, KSG-31, KSG-32, KSG-33; KSG-210 which is dimethicone/PEG-10/15 crosspolymer

dispersed in dimethicone; KSG-310 which is PEG-15 lauryl dimethicone crosspolymer; KSG-320 which is PEG-15 lauryl dimethicone crosspolymer dispersed in isododecane; KSG-330 (the former dispersed in triethylhexanoin), KSG-340 which is a mixture of PEG- 10 lauryl dimethicone crosspolymer and PEG-15 lauryl dimethicone crosspolymer.

Also suitable are polyglycerolated silicone elastomers. Such elastomers include Shin-Etsu's KSG series, such as KSG-710 which is dimethicone/polyglycerin-3 crosspolymer dispersed in dimethicone; or lauryl dimethicone/polyglycerin-3 crosspolymer dispersed in a variety of solvent such as isododecane, dimethicone, triethylhexanoin, sold under the Shin-Etsu tradenames KSG-810, KSG-820, KSG-830, or KSG-840. Also suitable are silicones sold by Dow Corning under the tradenames 9010, DC901 1.

B. Organic Nonionic Surfactants: The composition may comprise one or more nonionic organic surfactants. Suitable nonionic surfactants include alkoxyated alcohols, or ethers, formed by the reaction of an alcohol with an alkylene oxide, usually ethylene or propylene oxide. Preferably the alcohol is either a fatty alcohol having 6 to 30 carbon atoms. Examples of such ingredients include Steareth 2-100, which is formed by the reaction of stearyl alcohol and ethylene oxide and the number of ethylene oxide units ranges from 2 to 100; Beheneth 5-30 which is formed by the reaction of behenyl alcohol and ethylene oxide where the number of repeating ethylene oxide units is 5 to 30; Cetareth 2-100, formed by the reaction of a mixture of cetyl and stearyl alcohol with ethylene oxide, where the number of repeating ethylene oxide units in the molecule is 2 to 100; Ceteth 1-45 which is formed by the reaction of cetyl alcohol and ethylene oxide, and the number of repeating ethylene oxide units is 1 to 45, Laureth 2-100, formed by the reaction of lauryl alcohol and ethylene oxide where the number of repeating ethylene oxide units is 2 to 100, and so on.

Other alkoxyated alcohols are formed by the reaction of fatty acids and mono-, di- or polyhydric alcohols with an alkylene oxide. For example, the reaction products of C6-30 fatty carboxylic acids and polyhydric alcohols which are monosaccharides such as glucose, galactose, methyl glucose, and the like, with an alkoxyated alcohol. Examples include polymeric alkylene glycols reacted with glyceryl fatty acid esters such as PEG glyceryl oleates, PEG glyceryl stearate; or PEG polyhydroxyalkanotes such as PEG dipolyhydroxystearate wherein the number of repeating ethylene glycol units ranges from 3 to 1000. Also suitable are ethoxyated propoxyated derivatives of C6-30 saturated or unsaturated fatty acids, for example, Di-PPG-2 myreth-10 adipate, Di-PPG-2 Ceteth-4 adipate, Di-PPG Myristyl Ether Adipate.

Other nonionic surfactants that may be used are formed by the reaction of a carboxylic acid with an alkylene oxide or with polymeric ether or monomeric, homopolymeric, or block copolymeric ethers; or alkoxylated sorbitan and alkoxylated sorbitan derivatives. For example, alkoxylation, in particular ethoxylation of sorbitan provides polyalkoxylated sorbitan derivatives. Esterification of polyalkoxylated sorbitan provides sorbitan esters such as the polysorbates. For example, the polyalkoxylated sorbitan can be esterified with C6-30, preferably C12-22 fatty acids. Examples of such ingredients include Polysorbates 20-85, sorbitan oleate, sorbitan sesquioleate, sorbitan palmitate, sorbitan sesquiostearate, sorbitan stearate, and so on.

4. Structuring Agents: It may also be desirable to include one or more structuring agents in the composition. Structuring agents will increase the viscosity of, hence structure, the composition. Structuring agents may be lipophilic or hydrophilic, and form part of the aqueous or non-aqueous phase of the composition. If present, the structuring agent may range from about 0.1 to 60%, preferably from about 0.5 to 50%, more preferably from about 1 to 45% of the composition. Desirable structuring agents include silicone elastomers, silicone gums or waxes, natural or synthetic waxes, polyamides, silicone polyamides and the like.

A. Silicone Elastomers: Examples of suitable silicone elastomers for use in the compositions of the invention may be in the powder form, or dispersed or solubilized in solvents such as volatile or non-volatile silicones, or silicone compatible vehicles such as paraffinic hydrocarbons or esters. Examples of silicone elastomer powders include vinyl dimethicone/methicone silsesquioxane crosspolymers like Shin-Etsu's KSP-100, KSP-101, KSP-102, KSP-103, KSP-104, KSP-105, hybrid silicone powders that contain a fluoroalkyl group like Shin-Etsu's KSP-200 which is a fluoro-silicone elastomer, and hybrid silicone powders that contain a phenyl group such as Shin-Etsu's KSP-300, which is a phenyl substituted silicone elastomer; and Dow Corning's DC 9506. Examples of silicone elastomer powders dispersed in a silicone compatible vehicle include dimethicone/vinyl dimethicone crosspolymers supplied by a variety of suppliers including Dow Corning Corporation under the tradenames 9040 or 9041, 9045, GE Silicones under the tradename SFE 839, or Shin-Etsu Silicones under the tradenames KSG-15, 16, 18. KSG-15 has the CTFA name cyclopentasiloxane/dimethicone/vinyl dimethicone crosspolymer. KSG-18 has the ICI name phenyl trimethicone/dimethicone/phenyl vinyl dimethicone crosspolymer. Silicone elastomers may also be purchased from Grant Industries under the

Gransil trademark. Also suitable are silicone elastomers having long chain alkyl substitutions such as lauryl dimethicone/vinyl dimethicone crosspolymers supplied by Shin Etsu under the tradenames KSG-31, KSG-32, KSG-41, KSG-42, KSG-43, and KSG-44.

5 B. Silicone Gels: The silicone gels may also be purchased from commercial suppliers such as Grant Industries. Examples of such gels include cyclomethicone (and) polysilicone-11 (Gransil GCM5), cyclotetrasiloxane(D4) (and) petrolatum (and) polysilicone-11 (Grangil PS-4), cyclopentasiloxane(D5) (and) petrolatum (and) polysilicone-11 (Gransil PS-5), cyclopentasiloxane(D5) (and) dimethicone (and) polysilicone-11 (Gransil DMCM-5), cyclotetrasiloxane(D4) (and) dimethicone (and) polysilicone-11 (Gransil DMCM-4), polysilicone-11 (and) isododecane (Gransil IDS), and cyclomethicone (and) polysilicone-11 (and) petrolatum (and) phytosphingosine (Gransil SPH). Examples of such gels available from General Electric include cyclopentasiloxane (and) dimethicone/vinyl dimethicone crosspolymer (SFE839).

15 C. Polyamides or silicone Polyamides: Also suitable as oil phase structuring agents are various types of polymeric compounds such as polyamides or silicone polyamides. The term silicone polyamide means a polymer comprised of silicone monomers and monomers containing amide.

20 Examples of polyamide and silicone polyamide are sold by Arizona Chemical under the tradenames Sylvaclear A200V or A2614V, both having the CTFA name ethylenediamine/hydrogenated dimer dilinoleate copolymer/bis-di-Ci4\_i8 alkyl amide; Sylvaclear AF 1900V; Sylvaclear C75V having the CTFA name bis-stearyl ethylenediamine/neopentyl glycol/stearyl hydrogenated dimer dilinoleate copolymer; 25 Sylvaclear PA 1200V having the CTFA name Polyamide-3; Sylvaclear PE400V; Sylvaclear WF 1500V; or Uniclear, such as Uniclear 100VG having the INCI name ethylenediamine/stearyl dimer dilinoleate copolymer; or ethylenediamine/stearyl dimer ditallate copolymer

30 D. Natural or Synthetic Organic waxes: Also suitable as structuring agents may be one or more natural or synthetic waxes such as animal, vegetable, or mineral waxes. Examples of such waxes are polyethylene or synthetic wax, ozokerite wax, microcrystalline wax, ceresin, or various vegetable waxes such as bayberry, candelilla, ozokerite, acacia, beeswax, ceresin, cetyl esters, flower wax, citrus wax, carnauba wax, jojoba wax, japan wax, rice bran, lanolin wax, mink, montan, 35 bayberry, ouricury, ozokerite, palm kernel wax, paraffin, avocado wax, apple wax, shellac wax, clary wax, spent grain wax, grape wax, and polyalkylene glycol

derivatives thereof such as PEG6-20 beeswax, or PEG- 12 carnauba wax; or fatty acids or fatty alcohols, including esters thereof, such as hydroxystearic acids (for example 12-hydroxy stearic acid), tristearin, tribehenin, oleic acid, stearic acid, and so on.

5 E. Mineral Clays: One type of structuring agent that may be used comprises natural or synthetic mineral clay such as hectorite, bentonite, and quaternized derivatives thereof, which are obtained by reacting the minerals with a quaternary ammonium compound, such as stearylalkonium bentonite, hectorites, quaternized hectorites such as Quaternium- 18 hectorite, carbonates such as propylene carbonate, 10 bentones, and the like.

F. Silica and Silicates: Another type of structuring agent that may be used is silica, silicates, or silica silylate, and alkali metal or alkaline earth metal derivatives thereof. These silica and silicates are generally found in the particulate form and include silica, silica silylate, magnesium aluminum silicate, and the like.

15 G. Natural Thickening Agents: The natural structuring agents examples but not limited to, such as cellulose derivatives (methyl celluloses, methyl ethyl celluloses), plant derived hydrocolloids (alginates, propylene glycol alginate, carrageenates, pectins, etc), starch derivatives, polysaccharides, for example xanthan gum.

20 H. Acrylate copolymers and carbomers: Synthetic structuring agents like salts of polyacrylic acids and polyvinyl alcohols can also be used to provide structure to the composition. E.g Various grades of Carbomer available under trade name Carbomer from Lubrizol also Alkyl acrylate crosspolymers like Carbopol ultrez 21 available from Lubrizol have INCI name Acrylates/ C10-C30 Alkyl Acrylate crosspolymer.

25 5. Sunscreens: It may also be desirable to include one or more sunscreens in the compositions of the invention. Such sunscreens include chemical UVA or UVB sunscreens or physical sunscreens in the particulate form.

30 A. UVA Chemical Sunscreens: If desired, the composition may comprise one or more UVA sunscreens. The term "UVA sunscreen" means a chemical compound that blocks UV radiation in the wavelength range of about 320 to 400 nm. Examples of suitable UVA sunscreen compounds of this general formula include 4-methyldibenzoylmethane ; 2-methyldibenzoylmethane ; 4-isopropyldibenzoylmethane; 4-tert-butyl-4'-methoxydibenzoylmethane; 2,4-dimethyldibenzoylmethane; 2,5-dimethyldibenzoylmethane; 4,4'-diisopropylbenzoylmethane; 4-tert-butyl-4'-methoxydibenzoylmethane; 4,4'-

diisopropylbenzoylmethane; 2-methyl-5-isopropyl-4'-methoxydibenzoylmethane; 2-methyl-5-tert-butyl-4'-methoxydibenzoylmethane, and so on. Particularly preferred is 4-tert-butyl-4'-methoxydibenzoylmethane, also referred to as Avobenzene. Avobenzene is commercially available from Givaudan-Roure under the trademark Parsol 1789, and Merck & Co. under the tradename Eusolex 9020.

Other types of UVA sunscreens include dicamphor sulfonic acid derivatives, such as ecamsule, a sunscreen sold under the trade name Mexoryl.

B. UVB Chemical Sunscreens The term "UVB sunscreen" means a compound that blocks UV radiation in the wavelength range of from about 290 to 320 nm. A variety of UVB chemical sunscreens exist. One particular example of an  $\alpha$ -cyano-beta,beta-diphenyl acrylic acid ester is Octocrylene, t. Octocrylene may be purchased from BASF under the tradename Uvinul N-539.

Other suitable sunscreens include benzylidene camphor, particularly preferred is 4-methylbenzylidene camphor, which is a lipid soluble UVB sunscreen compound sold the tradename Eusolex 6300 by Merck.

Also suitable are cinnamate derivatives, The preferred compound is ethylhexyl methoxycinnamate, also referred to as Octoxinate or octyl methoxycinnamate. The compound may be purchased from Givaudan Corporation under the tradename Parsol MCX, or BASF under the tradename Uvinul MC 80.

Also suitable as UVB screening agents are various benzophenone derivatives. Particularly preferred is benzophenone derivative Benzophenone 3 (also referred to as Oxybenzone), Benzophenone 4 (also referred to as Sulisobenzene), Benzophenone 5 (Sulisobenzene Sodium), and the like. Most preferred is Benzophenone 3. Also suitable are certain menthyl salicylate

Particularly preferred is the compound having the name homomenthyl salicylate (also known as Homosalate) or menthyl anthranilate. Homosalate is available commercially from Merck under the tradename Eusolex HMS and menthyl anthranilate is commercially available from Haarmann & Reimer under the tradename Heliopan. Various amino benzoic acid derivatives are suitable UVB absorbers. Salicylate derivatives are also acceptable UVB absorbers, Particular preferred are octyl salicylate.

If desired, the compositions of the invention may be formulated to have a certain SPF (sun protective factor).

6. Film Formers: It may be desired to incorporate one or more film formers into the compositions of the invention. Film formers will generally enhance the film formed by the cosmetic applied to the skin and, in some cases, promote water resistance or transfer resistance. If present, such film formers may range from about 0.1 to

50%, preferably from about 0.5 to 40%, more preferably from about 1 to 35% by weight of the total composition.

Suitable film formers may be oil or water soluble. Particularly preferred water soluble film former is polyvinyl pyrrolidone available from ISP under trade name PVP K30.

Oil soluble film formers used herein encompass cross linked silicone resins generally referred to as MT or MQ resins. Examples of such resins include the MQ resin trimethylsiloxysilicate or an MT resin called polymethylsilsesquioxane. Trimethylsiloxysilicate may be purchased from momentive performance chemicals under trade name SR1000, Polymethylsilsesquioxane may be purchased from Wacker-Chemie under the tradename MK resin PVP based oil soluble film formers like PVP Hexadecene copolymer available under trade name ANTARON V216 from ISP or PVP Ecosiene copolymer available under trade name ANTARON V220F can also be used.

7. Preservatives: Non-limiting examples of preservatives include phenoxyethanol, methyl paraben, propyl paraben, butyl paraben, isopropyl paraben, isobutyl paraben, diazolidinyl urea, imidazolidinyl urea, diazolidinyl urea, benzalkonium chloride, benzethonium chloride, phenol, and mixtures thereof.

8. Acidifying and alkalizing agents: Non-limiting examples of acidifying agents include acetic acid, citric acid, glacial acetic acid, malic acid, and propionic acid. Non-limiting examples of alkalizing agent include potassium carbonate, potassium hydroxide, sodium borate, sodium carbonate, and sodium hydroxide.

9. Buffering agents: Non-limiting examples of buffering agents include sodium citrate, calcium acetate, potassium phosphate; citric acid.

10. Chelating agents: Non-limiting examples of chelating agents included, ethylenediamine tetracetic acid (EDTA) and its salts (e.g., tetrasodium EDTA).

11. Coloring additives: Coloring additives are used to add color to the composition. It can be inorganic or organic dyes and lakes which may or may not be surface treated. Non limiting Non-limiting examples of such coloring additives include titanium dioxide, yellow iron oxide, red iron oxide, black iron oxide, and caramel, carmine, carbon black, D & C Red 7 Lake, FD & C Yellow 5 Lake, FD & C Yellow dye, FD & C Blue 1 dye.

12. Dermatologically active agents: It includes agents for caring a keratinic material, in particular the skin and more specifically agents for treating inflammation, acne, psoriasis, cutaneous aging, itching, skin color disorders, such as freckles or vitiligo and skin irritation. Non-limiting examples of such dermatologically active agents include panthenol, phenol, yeast, retinoids such as retinol and retinoic acid, resorcinol, salicylic acid, benzoyl peroxide, methyl salicylate, camphor, menthol etc. and vitamins such as tocopherol, tocopheryl acetate, ascorbic acid and retinoids such as retinol, retinoic acid,



retinal, retinyl acetate, and retinyl palmitate,  $\alpha$ -hydroxy acid, a  $\beta$ -hydroxy acid, or poly-hydroxy acid such as glycolic acid, lactic acid, and sunless tanning agents such as 1,3-dihydroxyacetone and 1,3,4-trihydroxy-2-butanone (erythulose).

13. Whitening active ingredients: Non-limiting examples of skin whitening or brightening agents include, but not limited to, skin tone changing pigments, reflective particulate material, soft focus agents and mixtures thereof. The skin tone changing pigments includes but not limited to. Talc, mica, silica, titanium oxide, zinc oxide and titanium oxide coated mica, borosilicates; hydrophobically modified zinc oxides; hydrophobically modified titanium di-oxides, composites of titanium-zinc oxides with particle size ranging from 0.01 micron to 100 micron.

14. Others skin care agents or cosmetically active ingredients, such as: Anti-oxidants, cleansing agents, free radical scavengers, moisturizers, skin tone altering agents, anti-acne agents, anti-aging agents, anti wrinkle-agents, anti inflammatory agents, skin texture treatment agents, anti-perspirant agents, esthetics, anti-bacterial agents, nourishing agents, sebum and moisture absorbers and the combinations thereof can be also used to achieve particular skin care benefit.

Example of anti-oxidants and or anti-inflammatory and/or cooling actives and/or sweat absorption actives to be used in the invention include, but not limited to, Vitamin C, Vitamin E, Derivatives of Vitamin C and Vitamin D, Lycopene, Carotene, Lecithin, Rice bran lipids, Rice bran oils, menthol; yoghurt, silicated menthols, menthyl lactates; almond oil; peanut oil; sunflower oil; horse gram powder; olive oil; fumated or non-fumated silica, hydrophobically modified silica, hydrophylically silica and mixtures/composites thereof.

More particularly said cosmetically active or dermatologically active ingredients comprise "cosmetic products" which are such as defined in EC Regulation N°1223/2009 of the European Parliament and of the Council, dated November 30<sup>th</sup>, 2009, in relation with cosmetic products.

According to a particular embodiment, the invention relates to at least two cosmetic compositions to be applied on a single solid substrate, said compositions being in the form of emulsions.

According to the invention the first cosmetic composition is selected from the group consisting of O/W emulsions and the second cosmetic composition is selected from the group consisting of W/O emulsions. The polarity difference between O/W (Oil-in-water) and W/O (water-in-oil) emulsion restricts the interaction of these compositions especially when they are applied in close spatial proximity or in contact to each other onto the surface of a single solid support suitable for application onto the skin and delivering one or

more cosmetically or demagogically active ingredients contained in said cosmetic compositions.

According to a particular embodiment, the polar cosmetic composition is an oil-in-water emulsion comprising or consisting of, in weight percent with respect to the total composition weight:

- a) From 50 to 99% w/w; more specifically from 60 to 95% and even more specifically from 70 to 95% of one or more aqueous phases,
- b) From 1 to 5% of one or more oil in water emulsifiers with HLB ranging from 8-16,
- c) Optionally from 0.5 to 2% of one or more emulsifiers with HLB ranging from 3-7;
- d) From 0.001 to 5% of one or more cosmetically active and/or dermatologically active ingredients, more preferably soluble in an aqueous phase;
- e) From 0.1 to 5% w/w, more specifically 0.1 to 4%; even more specifically from 0.1% to 2% of one or more rheology modulating thickening polymers,
- f) From 1 to 30%, more specifically from 5 to 10% and even more specifically from 2 to 5 % of one or more oils or oil blends of mineral and/or vegetable and/or synthetic origin.

According to a particular embodiment, the non-polar cosmetic composition is a water in oil emulsion comprising or consisting of, in weight percent with respect to the total composition weight:

- from about 20 to 70% of one or more aqueous phases,
- from about 1 to 10% of one or more oil in water emulsifiers with HLB ranging from 3-7,
- optionally from about 0.1 to 20% of one or more oil in water emulsifiers with HLB ranging from 8-13,
- from about 0.001 to 20% of one or more cosmetically or dermatologically active ingredients, more preferably soluble in a non-aqueous phase;
- from about 0.1 to 20% of one or more rheology modulating thickening polymers,
- from about 0.1 to 80% of one or more oils or oil blend of mineral and/or vegetable and/or synthetic origin.

Preferably said aqueous phase in itself is a blend of water and humectants such as polyhydric alcohols, classically described as entities with linear or branch chain hydrophobic moieties with multiple substitution of OH groups. Examples of the same are given but not limited to propylene glycol, butylenes glycol, glycerine, etc.

Preferably water is in the range 50-99 % of the total composition weight, more preferably in the range 60-85% and even more specifically in the range 70-75%.

More particularly said oil in water emulsifier with HLB ranging from 8-13 is selected from the group consisting of waxes, powders, liquids, gums, resins soluble or dispersible in aqueous phase with or without the influence of temperature. The structural classification of the same ascribed as linear and/or branch chain hydrophobic backbone ranging from C8-  
5 C22 or blend thereof with functional groups for example such as as stearates and/or setareths and/or ceteostearates and/or palmitates and/or glycerides and/or linear siloxanes and/or branched siloxanes.

More particularly said rheology modulating thickening polymers is containing linear and/or branched chain cellulosic and/or hydroxyl ethyl cellulosic and/or acrylic groups that  
10 imparts a characteristic rheology to the formulation ascribed above with a break point in rotational rheology curve at 60-150 s<sup>-1</sup> and a G'-G'' crossover in oscillation rheology at 150-200 s<sup>-1</sup> (measured with Anton-Paar MR501 rheometer) compositionally. This measurement is performed using Anton-Paar spindle 2 rheology and oscillation standard measurement protocol, temperature 25°C (water bath/peltier).

15 More particularly said oil or oil blend is a polar, semi-polar or non-polar containing saturated and/or unsaturated hydrophobic backbone compound or any mixture thereof.

Water soluble (or soluble in aqueous phase) cosmetically active or dermatologically active ingredients comprise in general water soluble anti-ageing and/or skin remuneration and/or protein and/or hydrolysate thereof and/or skin moisturizing active ingredients  
20 and/or soothing active ingredients and/or whitening active ingredients.

Oily soluble (or soluble in non-aqueous phase) cosmetically active or dermatologically active ingredients comprise in general organic compounds containing one or more aromatic rings or natural extracts containing same, such as for example resveratrol, dihydromyricetin, taxifolin (dihydroquercetin), polyphenol, arctiin, quercetin,  
25 catechin oxyresverox, Coenzyme Q10, licochalcones A, green tea extract or soy extract.

The present invention also relates to a method for limiting interactions between at least two cosmetic compositions to be delivered onto the same surface of a solid support, said method comprising selecting a first composition having a polarity different from a second composition, said first and second composition having preferably essentially the  
30 same viscosity.

In one embodiment, said first cosmetic composition is a polar formulation and said second cosmetic composition is a non-polar formulation.

The invention also relates to a kit-of-parts comprising (i) single kit comprising at least a first cosmetic composition and a second cosmetic composition, wherein said first  
35 cosmetic composition is a polar formulation and wherein said second cosmetic composition is a non-polar formulation, preferably as defined according to the invention,

and (ii) a multi-functional surface solid support (1) comprising at least one functional surface defining  $n+1$  functional areas (10, 20, 30), wherein  $n$  is an integer equal or greater than 1, wherein at least a first functional area (10 or 20) and a second functional area (30) present a front line in common (40 or 50).

5 More particularly, said first functional area (10 or 20) is designed to support said at least one first cosmetic composition (11 or 21) and deliver a first cosmetic care to a first targeted zone of a keratinic material in need of said first cosmetic care; and wherein said second functional area (30) is designed to support said at least one second cosmetic composition (31) and deliver a second cosmetic care to a first targeted zone of a keratinic material in need of said second cosmetic care.

10 In one embodiment, said kit-of-parts is packaged in the form of a single article (or packaging) comprising said multi-functional surface solid support and said cosmetic compositions, optionally wherein said multi-functional surface solid support and one or more cosmetic compositions are separated by one or more physical separations.

15 In one embodiment, said kit-of-parts is packaged in the form of multiple individual articles (or packaging), each article of said kit-of-parts comprising one or more of said multi-functional surface solid support and said cosmetic compositions. Said multiple individual articles may be bought simultaneously or sequentially, notably for collecting all elements of said kit-of-parts (at least said multi-functional surface solid support and said cosmetic compositions). Simultaneous buying of multiple individual articles notably includes buying said multiple individual articles in a single buying act. Sequentially buying of multiple individual articles notably includes buying said multiple individual articles in two or more buying acts.

20 The invention also relates to a multi-functional surface solid support (1) comprising at least one functional surface defining  $n+1$  functional areas (10, 20, 30), wherein  $n$  is an integer equal or greater than 1, wherein at least a first functional area (10 or 20) and a second functional area (30) present a front line in common (40 or 50), wherein said solid support (1) comprises at least one first cosmetic composition (11 or 21) on said first functional area (10 or 20) and at least one second cosmetic composition (31) on said second functional area (30), wherein said first cosmetic composition (11 or 21) is a polar formulation and wherein said second cosmetic composition (31) is non-polar formulation.

25 The invention also relates to a method for preparing a multi-functional surface solid support (1), said method comprising:

30 (i) providing a solid support (1) comprising at least one functional surface defining  $n+1$  functional areas (10, 20, 30), wherein  $n$  is an integer equal or greater than 1, wherein

at least a first functional area (10 or 20) and a second functional area (30) present a common front line (40 or 50),

(ii) applying at least one first cosmetic composition (11 or 21) on said first functional area (10 or 20) and applying at least one second composition (31) on said second functional area (30), wherein said first cosmetic composition (11 or 21) is a polar formulation and wherein said second cosmetic composition (31) is non-polar formulation, and

(iii) collecting a multi-functional surface solid support (1) comprising at least one first cosmetic composition (11 or 21) on said first functional area (10 or 20) and at least one second composition (31) on said second functional area (30).

In one embodiment, said  $n+1$  functional areas (10, 20, 30) cover partially or essentially completely said multi-functional surface.

According to a specific embodiment  $n$  is 1.

According to a specific embodiment  $n$  is 2.

According to a specific embodiment  $n$  is 3.

According to a specific embodiment  $n$  is 4.

According to a specific embodiment  $n$  is not greater than 5.

Any way to support onto said solid support (which also means in this sense "to include into") said cosmetic composition is appropriate. For example cosmetic compositions are embedded into or deposited (including spreading) onto said solid support. One specific embodiment relates to cosmetic compositions embedded into said solid support. This term should be interpreted broadly without any particular limitation on the way the composition is supported onto/by/in the support.

In one embodiment, said solid support may comprise  $n+1$  distinct cosmetic compositions. When  $n$  is greater than or equal to 2, said support may comprise either distinct or same or some distinct and some same cosmetic compositions. For example, one embodiment is a solid support comprising 3 functional areas and 2 distinct compositions. Another embodiment is a solid support comprising 3 functional areas and 3 distinct compositions. In the former case, adjacent functional areas do not comprise the same composition. In other words, a functional area comprising a polar cosmetic composition is adjacent to one or more areas each comprising a non-polar cosmetic composition.

Preferably, functional areas are designed so that functional areas comprising the same polarity type compositions do not have a common front line.

The present invention also relates a method of cosmetic care comprising applying said multi-functional surface solid support according to the invention onto at least one keratinic material of a subject.

In one embodiment, said cosmetic care is a cosmetic multi-care provided to at least two targeted zones of at least one keratinic material of said subject, wherein said first cosmetic composition provides a first cosmetic care to a first targeted zone of said subject's keratinic material in need of said first cosmetic care and said second composition provides a second cosmetic care to a second targeted zone of said subject's keratinic material in need of said second cosmetic care.

According to one specific embodiment, a multi-functional surface solid support is an applicator body as defined in Indian patent application filed on July 25, 2013 under number 2215/DEL/2013. Applicator bodies are for example selected among face masks, wipes and pads. For instance, a face mask is an applicator body which is cut in to the shape face with slits for eyes, nose and mouth and is impregnated with a cosmetic product depending on targeted functionality.

The functionality of such a solid support mainly depends on the activities of the active ingredients. Moisturisation, whitening and anti-aging are the most common functionalities for such a solid support, especially face mask.

The most common format of applicator bodies distribution is folded and impregnated substrate, packed in a single use sachet. In some cases, applicator bodies are distributed in the format of a roll pack. Such a roll pack comprises a substrate roll with a plurality of applicator bodies of a predetermined shape, for example a plurality of face masks. A cosmetic product can be applied on such an applicator body after its detaching from the roll pack.

The body surface of the user is advantageously the skin of the user, in particular the skin located on a member of the user such as an arm or a leg, or preferably, the skin on the face of the user. The shape of the applicator body is defined by its outer contour which depends on its targeted functionality and targeted zones.

In a particular embodiment, the body applicator 1 is a face mask illustrated in figure 1. In this case, an outer contour 5 of the mask defines an oval shape. Alternatively, it defines a polygonal shape. For such a face mask, the surface area of the oval shape is comprised between  $0.25 \text{ cm}^2$  and  $500 \text{ cm}^2$ , preferably between  $200 \text{ cm}^2$  and  $450 \text{ cm}^2$ .

Advantageously, the body applicator 1 comprises inner cavities. For the mask shown in figure 1, such inner cavities comprises two through openings 22 intended to be placed facing the eyes of the user, and another through opening 24 intended to be placed facing the mouth of the user.

The mask also comprises a slit 26 delimiting a flapper intended to be pushed away by the nose of the user, to delimit a nose insertion through opening.

In a variant, the oval shape of the face mask is completed with shapes facing the neck and/or ear hangings of the user.

5 In another variant, the applicator body 1 is formed into a patch or a garment having a volume, for example a sock, glove or sleeve.

The amount of the cosmetic compositions 11, 21, 31 to be applied is comprised between 200% and 800 %, more preferably between 400% and 600%, of the applicator body 1 weight.

10 Advantageously, the solid support is water insoluble. By "water insoluble", it is meant that the solid support does not dissolve or readily break apart upon immersion in water.

Advantageously, the solid support comprises at least a fibrous layer. It comprises for example woven fibers, knitted fibers, non-woven fibers or/and a polymeric mesh.

15 Advantageously, the solid support comprises fibrous layer non-woven fibers. In a preferred embodiment, the solid support is made of a non-woven material.

By "non-woven", it is meant, in the sense of this invention, a solid support including fibers in which the individual fibers or filaments are arranged in a disordered manner in a sheet-like structure and which are neither woven nor knit. The fibers of the nonwoven body are generally linked to one another, under the effect of a mechanical action (for  
20 example, by needle-punching, air jet, water jet, etc.), or under the effect of a thermal action, or by adding a binder. Such a non-woven material is, for example, defined by standard ISO 9092, as a web or a sheet of fibers oriented directionally or at random, bound by friction and/or cohesion and/or adhesion, excluding paper or products obtained by weaving, knitting, tufting or stitching incorporating threads or bonding filaments. A non-  
25 woven material differs from a paper by the length of the fibers used. In paper, the fibers are shorter. However, there are nonwoven materials based on cellulose fibers that are produced by wet process and have short fibers as in paper. The difference between a nonwoven material and a paper is generally the absence of a hydrogen bond between the fibers in a nonwoven material. The fibers can be natural fibers, synthetic fibers or mixtures thereof. Non limiting examples of synthetic fibers are Polyester, Polyolefin (Polypropylene, Polyethylene), Polyamide (Nylon 6, Nylon 66), Viscose, Acrylic fibers, Modacrylic fibers, Poly vinylidene chloride and Spandex. Example of natural fiber includes cellulosic fibers (such as wood pulp, cotton, hemp, jute, and flax fibers), silk, and keratin (such as wool and camel hair fibers). The solid support typically has a density of 30 g/m<sup>2</sup> to 400 g/m<sup>2</sup>,  
35 preferably 40 g/m<sup>2</sup> to 80 g/m<sup>2</sup>.

Each cosmetic product 11, 21, 31 is intended to be applied in a functional area (10, 20, 30) of the applicator body 1.

According to a particular embodiment, the applicator body 1, or more generally said solid support, is a triple action face mask of shape similar to the shape of the mask shown in figure 1. In this case, the cosmetic product 11 is for example an anti-oxidant compound and the corresponding targeted zone is the upper forehead of the user's face.

The cosmetic product 31 is for example an anti-ageing compound and the corresponding targeted zone is the eye region of the user's face.

The cosmetic product 21 is for example a protein hydrolysate compound and the corresponding targeted zone is the lower region of the user's face.

According to a specific embodiment, at least one or any cosmetic compositions cover essentially the whole surface of the functional areas of the solid support.

The invention limits interactions of cosmetic compositions which do not overlap each other when the solid support is manipulated, notably for purpose of performing a cosmetic care.

In the figure

Figures 1 and 2 relate to a single tri-active face mask comprising on its surface three cosmetic compositions.

### **Examples:**

#### **Example 1 – Triactive face mask**

Three cosmetic compositions were applied onto a single tri-active face mask (1). The compositions were applied parallel to each other, as described below by reference to figure 1. In the upper (10) and lower (20) regions; o/w emulsions (transparent/translucent in nature) that could contain water soluble actives needed for skin moisturisation/soothing/whitening were incorporated.

The middle portion (30) of the mask (1) contains a w/o emulsion which contains an oil soluble active, for example but not limited to vitamin E. To make it user perceivable all the regions had a different color, which without application of the present invention shows a smudging within the different regions, notably when manipulated for purpose of performing the cosmetic care by application of the tri-active mask onto a user face.



Cosmetic composition:1 (O/W emulsion shown in red colour)	PHASE	INGREDIENTS	QUANTITY (%)
	P-A	WATER	74.17
	P-A	DISODIUM EDTA	0.05
	P-A	GLYCERIN	5.00
	P-A	METHYL PARABEN	0.30
	P-A	BUTYLENE GLYCOL	6.00
	P-A	PANTHENOL	0.25
	P-A	SODIUM HYALURONATE	0.25
	P-A	NIACINAMIDE	3.00
	P-B	AMMONIUM OLYACRYLOYLDIMETHYL TAURATE	0.15
	P-B	DIPROPYLENE GLYCOL	4.00
	P-B	PONCEAU 4R	0.05
	P-C	GLYCERYL STEARATE (and) CETEARETH-12 (and) CETEARETH-20 (and) CETEARYL ALCOHOL	1.50
	P-C	CETEARETH-20	0.44
	P-C	ETHYLHEXYL PALMITATE	4.04
	P-D	FRAGRANCE	0.10
		Total	100.00
Cosmetic composition: 2 (W/O emulsion shown in white colour)	PHASE	INGREDIENTS	QUANTITY (%)
	P-A	WATER	35.00
	P-A	DISODIUM EDTA	0.05
	P-A	GLYCERIN	5.00
	P-A	PHENOXY ETHANOL	0.30
	P-A	BUTYLENE GLYCOL	6.00
	P-A	PANTHENOL	0.50
	P-B	CYCLOPENTASILOXANE (AND) DIMETHICOL	10.00
	P-B	CYCLOPENTASILOXANE	25.55
	P-C	CYCLOPENTASILOXANE (AND) PEG/PPG 18/18 DIMETHICONE	12.00
	P-C	C30-45 ALKYL METHICONE (AND) C30-45 OLEFIN	3.00
	P-C	ETHYLMETHOXY CINNAMATE	2.00
	P-D	TOCOPHEROL ACETATE	0.50
	P-D	FRAGRANCE	0.10
		Total	100.00

Cosmetic composition:3 (O/W emulsion shown in green colour)	PHASE	INGREDIENTS	QUANTITY (%)
	P-A	WATER	74.43
	P-A	DISODIUM EDTA	0.05
	P-A	GLYCERIN	5.00
	P-A	METHYLPARABEN	0.30
	P-A	BUTYLENE GLYCOL	6.00
	P-A	PANTHENOL	0.25
	P-A	SODIUM HYALURONATE	0.25
	P-A	NIACINAMIDE	3.00
	P-B	AMMONIUM POLYACRYLOYLDIMETHYL TAURATE	0.50
	P-B	DIPROPYLENE GLYCOL	4.00
	P-B	FD & C BLUE 1	0.04
	P-B	FD & C YELLOW NO.5	0.10
	P-C	GLYCERYL STEARATE (and) CETEARETH- 12 (and) CETEARETH-20 (and) CETEARYL ALCOHOL	1.50
	P-C	CETEARETH-20	0.44
	P-C	ETHYLHEXYL PALMITATE	4.04
	P-D	FRAGRANCE	0.10
		Total	100.00

The different phases P-A, P-B, P-C and D are formulated according to the skilled person knowledge.

Compositions 1 and 3 are polar (O/W) and composition 2 is non-polar (W/O).

5

Composition n°	composition viscosity measured using PRO RHEO R 180 viscometer at 25 C with M2 spindle
1	110±5 Pa.s
2	160 ±5 Pa.s
3	110±5 Pa.s

Figure: 1 shows an example of impregnated mask (1) where substrate is cellulosic nonwoven, which was impregnated by 3 different formulations (Red-white-green) in three parallel functional areas (10, 20, 30). In Figure 2, (1) mask is hanged in vertical position for 15 minutes and is indicative of no dripping or overlap of three formulations within the mask, which is surprising. Accordingly, the present invention enables to overcome the problems set forth above.

10

The sensorial experience or profile does not get compromised.

CLAIMS

1.- A single kit comprising at least a first cosmetic composition and a second cosmetic composition, wherein said first cosmetic composition is a polar formulation and wherein said second cosmetic composition is a non-polar formulation.

2.- The kit of claim 1, wherein said polar formulation is selected from the group consisting of aqueous gels, aqueous dispersions, emulsions with water as continuous phase in the emulsion.

3.- The kit of claim 1, wherein said non-polar formulation is selected from the group consisting of anhydrous silicone formulation, non-silicone based gels or emulsion with oil as continuous phase in the emulsion.

4.- The kit of claim 1, wherein said first cosmetic composition is an oil-in-water emulsion and wherein said second cosmetic composition is a water-in-oil emulsion.

5.- A kit-of-parts comprising (i) single kit comprising at least a first cosmetic composition and a second cosmetic composition, wherein said first cosmetic composition is a polar formulation and wherein said second cosmetic composition is a non-polar formulation, preferably as defined in any one of claims 2 to 4, and (ii) a multi-functional surface solid support (1) comprising at least one functional surface defining  $n+1$  functional areas (10, 20, 30), wherein  $n$  is an integer equal or greater than 1, wherein at least a first functional area (10 or 20) and a second functional area (30) present a front line in common (40 or 50),

6.- The kit of claim 5, wherein said first functional area (10 or 20) is designed to support said at least one first cosmetic composition (11 or 21) and deliver a first cosmetic care to a first targeted zone of a keratinic material in need of said first cosmetic care; and wherein said second functional area (30) is designed to support said at least one second cosmetic composition (31) to deliver a second cosmetic care to a second targeted zone of a keratinic material in need of said second cosmetic care.

7.- A method for limiting interactions between at least two cosmetic compositions to be delivered onto the same surface of a solid support, said method comprising selecting a first composition having a polarity different from a second composition.

8.- The method of claim 7, wherein said first cosmetic composition is a polar formulation and wherein said second cosmetic composition is a non-polar formulation.

5 9.- A multi-functional surface solid support (1) comprising at least one functional surface defining  $n+1$  functional areas (10, 20, 30), wherein  $n$  is an integer equal or greater than 1, wherein at least a first functional area (10 or 20) and a second functional area (30) present a front line in common (40 or 50), wherein said solid support (1) comprises at least one first cosmetic composition (11 or 21) on said first functional area (10 or 20) and  
10 at least one second cosmetic composition (31) on said second functional area (30), wherein said first cosmetic composition (11 or 21) is a polar formulation and wherein said second cosmetic composition (31) is non-polar formulation.

15 10.- A method for preparing a multi-functional surface solid support (1), said method comprising:

(i) providing a solid support (1) comprising at least one functional surface defining  $n+1$  functional areas (10, 20, 30), wherein  $n$  is an integer equal or greater than 1, wherein at least a first functional area (10 or 20) and a second functional area (30) present a common front line (40 or 50),

20 (ii) applying at least one first cosmetic composition (11 or 21) on said first functional area (10 or 20) and applying at least one second composition (31) on said second functional area (30), wherein said first cosmetic composition (11 or 21) is a polar formulation and wherein said second cosmetic composition (31) is non-polar formulation, and

25 (iii) collecting a multi-functional surface solid support (1) comprising at least one first cosmetic composition (11 or 21) on said first functional area (10 or 20) and at least one second composition (31) on said second functional area (30).

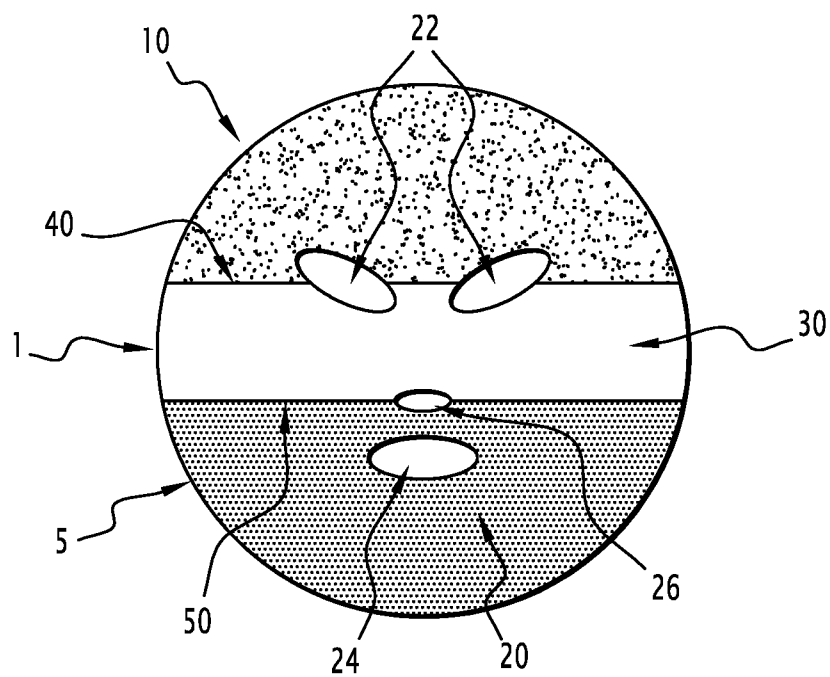
30 11.- The method of claim 10, wherein said  $n+1$  functional areas (10, 20, 30) cover partially or essentially completely said multi-functional surface.

12.- A method of cosmetic care comprising applying said multi-functional surface solid support according to claim 9 onto at least one keratinic material of a subject.

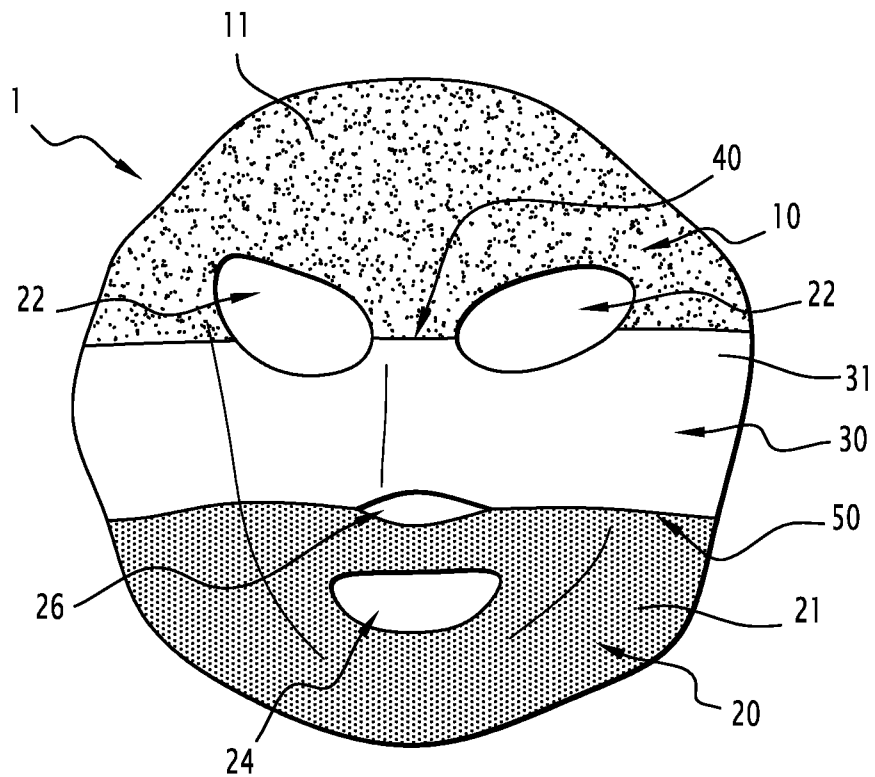
35 13.- The method of claim 12, wherein said cosmetic care is a cosmetic multi-care provided to at least two targeted zones of at least one keratinic material of said subject,

wherein said first cosmetic composition provides a first cosmetic care to a first targeted zone of said subject's keratinic material in need of said first cosmetic care and said second composition provides a second cosmetic care to a second targeted zone of said subject's keratinic material in need of said second cosmetic care.

1/1



**FIG.1**



**FIG.2**

# INTERNATIONAL SEARCH REPORT

International application No  
PCT/EP2014/079123

<b>A. CLASSIFICATION OF SUBJECT MATTER</b> INV. A45D44/00 A61Q19/00 A61Q19/08 A61K8/02 A61K8/06 ADD.														
According to International Patent Classification (IPC) or to both national classification and IPC														
<b>B. FIELDS SEARCHED</b> Minimum documentation searched (classification system followed by classification symbols) A61Q A61K Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched Electronic data base consulted during the international search (name of data base and, where practicable, search terms used) EPO-Internal, WPI Data														
<b>C. DOCUMENTS CONSIDERED TO BE RELEVANT</b> <table border="1"> <thead> <tr> <th>Category*</th> <th>Citation of document, with indication, where appropriate, of the relevant passages</th> <th>Relevant to claim No.</th> </tr> </thead> <tbody> <tr> <td>X</td> <td>US 2011/146007 A1 (CAROLINE GOGET AND GAUTIER DECONINCK) 23 June 2011 (2011-06-23) paragraph [0429] paragraph [0438] - paragraph [0445] -----</td> <td>1-4</td> </tr> <tr> <td>X</td> <td>US 6 080 393 A (LIU JUE-CHEN [US] ET AL) 27 June 2000 (2000-06-27) column 2, line 35 - line 56 -----</td> <td>1-3,7,8</td> </tr> <tr> <td>X</td> <td>US 2007/060650 A1 (TANIGUCHI TOSHIYA [JP] ET AL) 15 March 2007 (2007-03-15) claim 1 ----- -/-</td> <td>1,3,4,7,8</td> </tr> </tbody> </table>			Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.	X	US 2011/146007 A1 (CAROLINE GOGET AND GAUTIER DECONINCK) 23 June 2011 (2011-06-23) paragraph [0429] paragraph [0438] - paragraph [0445] -----	1-4	X	US 6 080 393 A (LIU JUE-CHEN [US] ET AL) 27 June 2000 (2000-06-27) column 2, line 35 - line 56 -----	1-3,7,8	X	US 2007/060650 A1 (TANIGUCHI TOSHIYA [JP] ET AL) 15 March 2007 (2007-03-15) claim 1 ----- -/-	1,3,4,7,8
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X	US 2007/060650 A1 (TANIGUCHI TOSHIYA [JP] ET AL) 15 March 2007 (2007-03-15) claim 1 ----- -/-	1,3,4,7,8												
<input checked="" type="checkbox"/> Further documents are listed in the continuation of Box C. <input checked="" type="checkbox"/> See patent family annex.														
* Special categories of cited documents : "A" document defining the general state of the art which is not considered to be of particular relevance "E" earlier application or patent but published on or after the international filing date "L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified) "O" document referring to an oral disclosure, use, exhibition or other means "P" document published prior to the international filing date but later than the priority date claimed "T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention "X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone "Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art "&" document member of the same patent family														
Date of the actual completion of the international search		Date of mailing of the international search report												
23 February 2015		11/03/2015												
Name and mailing address of the ISA/ European Patent Office, P.B. 5818 Patentlaan 2 NL - 2280 HV Rijswijk Tel. (+31-70) 340-2040, Fax: (+31-70) 340-3016		Authorized officer  Giacobbe, Simone												



## INTERNATIONAL SEARCH REPORT

International application No  
PCT/EP2014/079123

C(Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT		
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A	<p>US 6 770 286 B1 (BERRY CRAIG J [US]) 3 August 2004 (2004-08-03) abstract figure 11 -----</p>	1-13
T	<p>Anonymous: "Avon BioAdvance 2000 Beauty Recovery System Lotion Fortifier Dropper HTF NOS",  13 February 2015 (2015-02-13), XP002735945, Retrieved from the Internet: URL:<a href="http://www.ebay.com/itm/Avon-BioAdvance-2000-Beauty-Recover-System-Lotion-Fortifier-HTF-NOS/281597387754?_trksid=p2047675.c100011.m1850&amp;_trkparms=a%3D222007%26alg%3DSIC.MBE%26ao%3D1%26asc%3D28794%26meid%3D2cb23db1a23044ccb4103dad%3D100011%26rk%3D1%26rkt%3D2%26sd%3D130932624939">http://www.ebay.com/itm/Avon-BioAdvance-2000-Beauty-Recover-System-Lotion-Fortifier-HTF-NOS/281597387754?_trksid=p2047675.c100011.m1850&amp;_trkparms=a%3D222007%26alg%3DSIC.MBE%26ao%3D1%26asc%3D28794%26meid%3D2cb23db1a23044ccb4103dad%3D100011%26rk%3D1%26rkt%3D2%26sd%3D130932624939</a> [retrieved on 2015-02-13] the whole document -----</p>	1-3

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