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MATTE COSMETIC COMPOSITIONS

CROSS- REFERENCE TO RELATED APPLICATIONS

[0001] This application claims priority to U.S. Provisional Patent Application Serial No. 61/987,291, filed on May 1, 2014, the entirety of which is herein incorporated by reference for all purposes.

FIELD OF INVENTION

[0002] The present invention relates generally to cosmetic compositions that impart a matte finish to human integuments. More specifically, the invention relates to lip cosmetics that impart a matte finish.

BACKGROUND

[0003] Many cosmetics such as lipsticks, foundations, and powders, are designed to impart a matte finish to the lips or skin. Cosmetics with a glossy finish tend to highlight fine lines and wrinkles, whereas a matte finish softens the look of such imperfections. In addition, an oily or shiny appearance of the skin is considered by many to be undesirable.

[0004] Conventionally, matte cosmetics rely on a high powder content to reduce gloss and shine and create a matte finish. Many matte cosmetics use a reduced emollient content to cut down on shine. These formulations are often viewed by consumers as drying and uncomfortable.

[0005] There is therefore a need for cosmetic compositions, such as lipstick compositions, that provide a matte finish, without compromising comfort. It is therefore an object of the present invention to provide cosmetic compositions, including color cosmetics, such as lipsticks, which meet these requirements.

SUMMARY OF THE INVENTION

[0006] In accordance with the foregoing objectives and others, the present invention provides cosmetic compositions (e.g., color cosmetics such as lipstick) characterized by a non-shiny, matte finish (e.g. having a gloss value of less than about 60, or less than about 50, or less than about 40, or less than about 30, or less than about 20 gloss units). The cosmetic compositions of the invention ideally possess desirable wear properties, in particular being comfortable, not having a "heavy" feel on the lips, and not being drying like conventional matte cosmetics. It has surprisingly been found that the combination of a mattifying polymeric

powder (e.g., a mattifying polyethylene powder) and an emollient imparts a matte finish without a heavy, drying feeling. In some embodiments, the mattifying polymeric powder comprises Polyethylene (and) Calcium Silicate (and) Silica (INCI). In some embodiments, a low-gloss emollient comprises a silicone elastomer and/or silicone crosspolymer (such as Dimethicone Crosspolymer). In some embodiments, the low gloss emollient comprises Hydrogenated Polyisobutene (and) Polymethylsilsesquioxane (and) Vinyl Dimethicone/Methicone Silseaquioxane Crosspolymer (and) Ethylene/Propylene Copolymer The compositions according to the invention ideally employ less mattifying particulates (e.g., talc, mica, etc.) than traditional matte finish cosmetics (e.g., less than 10% by weight), thus improving the comfort on the skin. The compositions may also employ less total particulates (e.g., less than about 40%, or less than about 30%, or less than about 20% by weight) than conventional matte cosmetics, which is contemplated to improve comfort relative to cosmetics with higher pigment loads.

[0007]In one aspect of the invention, cosmetic lip compositions such as lipsticks are provided that comprise a mattifying powder comprising polyethylene (e.g., from about 50-70% by weight of the powder), and optionally calcium silicate (e.g., from about 30-50% by weight of the powder), and optionally silica (e.g., from about 0.5-5% by weight of the powder). The compositions may comprise a low gloss emollient comprising a silicone elastomer or a silicone crosspolymer (e.g., Dimethicone Crosspolymer). The compositions also may comprise a low gloss emollient comprising a hydrogenated polyisobutene (e.g., from about 60-80% by weight of the emollient), and/or polymethylsilsesquioxane (e.g., from about 5-15% by weight of the emollient), and/or vinyl dimethicone/methicone silsesquioxane crosspolymer (e.g., from about 5-15% by weight of the emollient), and/or ethylene/propylene copolymer (e.g., from about 1-10% by weight of the emollient). The mattifying powder may be, for example, a product of a co-extrusion of polyethylene, calcium silicate, and silica rather than a physical blend. Typically, the mattifying powder is present in an amount between about 0.5% and about 20% (e.g., between about 1% and about 15%, or between about 5% and about 10%) by weight of the composition. Typically, the emollient is present in an amount between about 5% and about 40% (e.g., between about 10% and about 30%, or between about 15% and about 20%) by weight of the composition. The cosmetic compositions will typically provide a matte finish (e.g., a gloss value of less than about 60, less than about 40, less than about 20, or less than about 10, or less than about 5), and may comprise a total mattifying particulate content (i.e., including all matte particles such as tale, mica, silica, alumina, calcium carbonate, pearls and

interference pigments) of less than about 40%, less than about 30%, less than about 20%, less than about 10%, or less than about 5% by weight of the composition. The total particulate content of the compositions (e.g., including mattifying powder, pigments, fillers, and all other particulates) will be less than the levels typically associated with conventional matte appearance cosmetics that are characterized by a gloss value of less than 40 (e.g., a total particulate content of between about 10% and about 40% by weight of the composition). Typically, the compositions further comprise an oil (e.g., isopropyl isostearate, isostearyl neopentanoate, castor oil, lauryl lactate, ethylhexyl palmitate, and glyceryl triacethyl hydroxystearate) that ideally functions as an emollient and is characterized by a low gloss value. The compositions may further comprise a colorant (e.g., pigments, lakes, dyes, etc.), micronized polyethylene, sunscreens, waxes, film formers, and other cosmetic adjuvants. The compositions may be aqueous, or may be substantially anhydrous or anhydrous. compositions may also be substantially free of shine agents (e.g., polybutene, amodimethicone, phenlytrimethicone, and emollients having a refractive value of 1.47 or more, or 1.49 or more, or 1.5 or more, or 1.52 or more). The cosmetic lip product is adapted for application to the lips to form a film thereon which imparts a matte finish to the lips.

[0008] These and other aspects of the present invention will become apparent to those skilled in the art after a reading of the following detailed description of the invention, including the appended claims.

DETAILED DESCRIPTION

[0009] All terms used herein are intended to have their ordinary meaning unless otherwise provided. All ingredient amounts provided herein are by weight percent of the total composition unless otherwise indicated. It will be understood that the total of all weight percentages and the total volume percentages in a given composition will not exceed 100%. If the amounts of a particular component are not otherwise specified, all components of the compositions of the invention may be present in amounts from about 0.0001% to about 99% by weight, including amounts from about 0.01% to about 50% by weight, or from about 0.1% to about 25% by weight.

[0010] The term "consisting essentially of" is intended to include only those components that do not materially alter the basic and novel features of the inventive compositions, including without limitation, the gloss of the composition and/or wear properties (e.g., comfort).

[0011] The term "mattifying particulates," as used herein, refers to particulates characterized by an ability to absorb substantial amounts of oil. In some embodiments, mattifying particulates and pigments are capable (individually or based on combinations of different particulates or pigments) of absorbing at least 40 g/100 g, or at least 50 g/100 g, or at least 50 g/100 g, or at 70 g/100 g of oil as determined by ASTM D281-12.

[0012] The term "mattifying polymeric powder," as used herein, refers to a polymeric powder having an oil absorption value greater than 70 g/100 g as determined by ASTM D281-12. Ideally, the mattifying polymeric powder (*e.g.*, mattifying polyethylene powder) will have an oil absorption value greater than 80, greater than 90, greater than 100, greater than 110, greater than 120, greater than 130, greater than 140, greater than 150, greater than 160, greater than 170, greater than 180, greater than 190, or greater than 200 g/100 g.

[0013] The compositions comprise a mattifying polymeric powder, such as a mattifying polyethylene (PE) powder, which is typically micronized. The polymeric powder will typically comprise an organic polymer, and more typically a polyolefin polymer (e.g., a polyolefin homopolymer or copolymer) comprising the polymerization product of at least one selected from ethylene, unsaturated monomer propylene, butylene, styrene, tetrafluoroethylene, (alkyl) acrylate, vinyl alcohol, vinyl pyrrolidone, and combinations thereof. In other embodiments, the polymeric powder may comprise a polyamide polymer, a polyurethane polymer, a silicone polymer, and a polyester polymer. Such a powder may be distinguished from traditional polymeric powders (e.g., PE powders) in that the mattifying polymeric powders of the invention are treated to increase the matte properties. For example, the mattifying polymeric powder (e.g., PE) may be treated with a material such as silica and/or a silicate. The material may be in particulate form and may be bonded or adhered to the surface of the PE particles. The treatment material may include a soft focus material such as spherical silica. The mattifying powder may, in some embodiments, comprise Polyethylene (and) Calcium Silicate (and) Silica (INCI).

[0014] The mattifying powder is typically used in combination (*e.g.*, synergistic combination) with a low gloss oil or emollient. The low gloss oil or emollient typically has a gloss value less than castor oil. In some embodiments, the low gloss oil will have a refractive index of less than 1.5, or less than 1.48, or less than 1.46, or less than 1.44, or less than 1.42, or less than 1.38 at 25° C. In some embodiments, individual oils and emollients will have the foregoing refractive indices. In other embodiments, all oil and/or emollients will collectively have the foregoing refractive indices.

[0015] The low gloss emollient may comprise a silicone elastomer and/or a silicone crosspolymer. In one embodiment, the emollient comprises Dimethicone Crosspolymer (INCI). In one embodiment, the low gloss emollient comprises Hydrogenated Polyisobutene (and) Polymethylsilsesquioxane (and) Vinyl Dimethicone/Methicone Silseaquioxane Crosspolymer (and) Ethylene/Propylene Copolymer (INCI).

[0016] Cosmetic compositions comprising mattifying PE powder and low gloss emollients are capable of imparting a comfortable, non-shiny, matte finish when applied as a film on a human integument such as the lips. The compositions possess desirable wear properties, such as not having a "heavy" feeling on the skin or lips, and not being perceived as drying. Without wishing to be bound by any particular theory, it is believed that the combination of the particular mattifying polymeric powder and low gloss emollient achieves a desirable matte appearance while using less mattifying particulates and/or less total particulate than traditional matte cosmetics. This improves comfort on the skin by permitting a more flexible, less drying film. The cosmetic compositions of the invention can achieve the same low gloss, or lower gloss values (*e.g.*, below about 40 gloss units) compared to traditional matte cosmetics while employing less total particulates, thus preserving desirable wear properties in a low gloss formulation.

In some embodiments, the mattifying polymeric powder comprises a mattifying PE powder. Special mention may be made of the material having the INCI name Polyethylene (and) Calcium Silicate (and) Silica (available as Microsorb 944S, from MicroPowders, Inc.). In one embodiment, the mattifying PE powder is the product of co-extrusion of powdered PE, calcium silicate, and silica (*e.g.*, spherical silica). It is believed that the polyethylene is coated by the calcium silicate and/or silica. The particle size of the mattifying powder may be, for example, from about 5 to about 100 μ m, or from about 10 to about 75 μ m, or from about 25 to about 35 μ m. The mattifying powder may comprise polyethylene powder in an amount from about 50% to about 70% by weight, optionally calcium silicate in an amount from about 30% to about 50% by weight, and optionally, silica (*e.g.*, spherical silica) in an amount from about 0.5% to about 5% by weight.

[0018] The mattifying polymeric powder is typically present in an amount effective to impart a matte appearance, and in particular, a gloss of less than 60 gloss units. In some embodiments, the mattifying powder comprises from about 0.1 to about 35% by weight, or from about 0.5% to about 20% by weight, or from about 1% to about 15% by weight, or from about 1.5% to about 10% by weight, or from about 2% to about 5% by weight of the

composition. In other embodiments, the mattifying powder comprises about 0.5%, 1%, or about 2%, or about 3%, or about 4%, or about 5% by weight of the composition.

[0019] In some embodiments, the mattifying polymeric powder has a higher oil absorbency by ASTM D281-12 compared to talc (e.g., untreated talc powder) having a median particle size from about 0.5-50 μ m or from about 1-10 μ m or from about 3-4 μ m or about 32 μ m. In some embodiments, the mattifying polymeric powder has a higher oil absorbency compared to mica. In some embodiments, the mattifying polymeric powder has an oil absorbency of between 100-200 g/100 g.

[0020] In one embodiment, the low gloss emollient typically has a gloss value (individually or in the aggregate) less than the gloss value of castor oil. The low gloss oil may comprise any of the oils and/or emollient oils described herein, individually or in combination. In one embodiment, the low gloss oil comprises one or more of ester oils, hydrocarbon oils, silicon-containing oils, and organic fatty alcohols. As used herein, the term emollient is intended to refer to oils that provide a softening, smoothing and/or moisturizing effect to the skin.

[0021]Suitable emollient oils include non-volatile silicone-containing oils, and in particular, silicone elastomers and/or silicone crosspolymers. Examples include Dimethicone Crosspolymer (INCI), Dimethicone / Vinyl Dimethicone Crosspolymer (INCI), Cetearyl Dimethicone Crosspolymer (INCI), C30-45 Alkyl Ceteraryl Dimethicone Crosspolymer (INCI), Acrylates / Dimethicone Copolymer (INCI), Dimethicone Copolymer (INCI), Vinyl Dimethicone / Methicone Silsesquioxane Crosspolymer (INCI), and Polysilicone-11 (INCI), to name a few. In one embodiment, the low gloss emollient comprises Dimethicone Crosspolymer (INCI). The Dimethicone Crosspolymer may be dissolved or dispersed in a solvent such as dimethicone. The solvent for the Dimethicone Crosspolymer (or other silicone emollient) may have a flash point above 125°F, or above 150°F or above 175°F or above 200°F. Particular mention may be made of the product sold by Dow Corning under the name 9041 Silicone Elastomer Blend, which comprises Dimethicone Crosspolymer in 5 centistoke Dimethicone and has a flash point above 215 °F. Each of the foregoing silicone-based polymers may be used in combination with one another or in combination with other polymers, including polyolefins, acrylates, and the like.

[0022] In one embodiment, the low gloss emollient may comprise the material having the INCI name Hydrogenated Polyisobutene (and) Polymethylsilsesquioxane (and) Vinyl

Dimethicone/Methicone Silsesquioxane Crosspolymer (and) Ethylene/Propylene Copolymer (available from Innovations Company as Novatext® MAT). The low gloss emollient may comprise hydrogenated polyisobutene in an amount from about 60% to about 80% by weight, polymethylsilsesquioxane in an amount from about 5% to about 15% by weight, vinyl dimethicone/methicone silsesquioxane crosspolymer in an amount between 5% to about 15% by weight, and ethylene/propylene copolymer in an amount between about 1% and about 10% by weight.

[0023] The low gloss oil or emollient (individually or collectively) may comprise from about 1% to about 75%, or from about 5% to about 40% by weight, or from about 7.5% to about 30% by weight, or from about 10% to about 25% by weight, or from about 12.5% to about 20% by weight of the composition. In one embodiment, the emollient comprises about 5%, or about 10%, or about 15%, or about 20%, or about 25%, or about 30% by weight of the composition.

The combination of mattifying powder and emollient in the compositions of the invention may allow for a lower total mattifying particulate content than that of traditional matte finish cosmetics, while achieving a desirable, low gloss value. Mattifying particulates may include, without limitation, polymeric powders (*e.g.*, micronized polyethylene that is not treated with silica and/or silicates), fillers, talc, *etc*. The compositions may comprise a total mattifying particulate content of less than about 40%, or less than about 35%, or less than about 30%, or less than about 25%, or less than about 20%, or less than about 15%, or less than about 10% by weight, or less than about 5% by weight of the composition.

[0025] In some embodiments, the total particulate content of the compositions (e.g., including mattifying powder, pigments, fillers, and all other particulates) will be less than the levels typically associated with conventional matte appearance cosmetics that are characterized by a gloss value of less than 40. The total particulate content in some embodiments may be less than about 40%, or less than about 35%, or less than about 30%, or less than about 25%, or less than about 20%, or less than about 10% by weight of the composition.

[0026] In some embodiments, the total particulate content of the composition has an aggregate oil absorption by ASTM D281-12 of greater than 10 g/100 g, greater than 15 g/10 g, greater than 20 g/100 g, greater than 25 g/100 g, greater than 30 g/100 g, greater than 35 g/100 g, greater than 40 g/100 g, greater than 45 g/100 g, greater than 50 g/100 g, greater than 55

g/100 g, greater than 60 g/100 g, greater than 65 g/100 g, greater than 70 g/100 g, or greater than 75 g/100 g. In some embodiments, the oil absorbency of the total combined particulates is greater than the oil absorbency of talc.

[0027] In some embodiments, the compositions are free of or are "substantially free" of mica, pearls and interference pigments by which is meant that the composition contains less than 5% by weight of such materials individually or in the aggregate. In some embodiments, the composition comprises less than about 2.5%, less than about 1%, less than about 0.5%, or less than about 0.1% of such materials.

[0028] In some embodiments, the compositions may comprise the combination of (i) micronized polyethylene and (ii) Polyethylene (and) Calcium Silicate (and) Silica (INCI), in an amount less than about 20%, less than about 15%, less than about 10%, or less than about 5% by weight of the composition. In some embodiments, the oil absorbency of (ii) is greater than the oil absorbency of (i). In some embodiments, a low gloss emollient (e.g., Dimethicone Crosspolymer) is included in an amount from about 5-30% by weight.

[0029] The compositions may be substantially anhydrous. "Substantially anhydrous" as used herein means containing less than 5% by weight water. In other embodiments, the compositions will comprise less than about 2.5%, or less than about 1% by weight water, or less than 0.25% by weight water. In some embodiments, the compositions may be anhydrous. The term "anhydrous" as used herein means that no water is added to the composition and that only that amount of moisture absorbed from the atmosphere will be present in the composition.

[0030] The compositions may be "substantially free" of agents that provide or enhance shine ("shine agents"), by which is meant that the amount of any such shine agents increase the gloss, if at all, by less than 3, 2, or 1 gloss unit. In some embodiments, gloss agents will comprise less than 5% by weight less than about 2.5%, or less than about 1%, or less than about 0.5%, or less than about 0.1% by weight of the composition. In some embodiments, the compositions of the invention are free of shine agents.

Shine agents may include materials having a refractive index greater than 1.4, or greater than 1.45, or greater than 1.47, or greater than 1.49, or greater than 1.5, or greater than 1.52 when measured as a film at 25°C. In some embodiments, the compositions of the invention are substantially free of or are free of one or more of the following: amodimethicone, phenyltrimethicone, polyols (*e.g.*, glycerin), fatty esters having a gloss value greater than castor oil, silicone phenylpropyldimethylsiloxysilicate, polybutene, polyisobutene, hydrogenated

polycyclopentadiene, propyl phenyl silsesquioxane resins; lauryl methicone copolyol, perfluorononyl dimethicone, dimethicone/trisiloxane, methyl trimethicone, and combinations thereof. In some embodiments, the term "shine agent" does not include organic sunscreens.

In some embodiments, the compositions may be free of, or substantially free of glycerin and/or silicone-containing solvents, oils, and/or film forming polymers, by which is meant that the composition comprises less than 5% by weight of either or both. "Substantially free" as used herein means containing less than 5% by weight. In some embodiments, the compositions comprise less than about 2.5% or less than about 1.5%, or less than about 1.5%, or less than 1%, or less than 0.5%, or less than 0.1% by weight glycerin and/or silicone containing solvents, oils, and/or film-forming polymers. In some embodiments, the compositions are substantially free of volatile solvents, including volatile silicone solvents having a flash point below 200 °F, or below 175°F, or below 150°F, or below 120°F, or below 100°F.

[0033] A composition may be assessed for shine/gloss intensity using a gloss meter, which measures the gloss intensity, or shine, of a cosmetic film and provides gloss values in "gloss units." The compositions of the invention are typically characterized by a matte finish, by which is meant that the composition has a gloss value of less than about 60, or less than about 50, or less than about 40, or less than about 30, or less than about 20, or less than about 15, or less than about 5, or less than about 4, or less than about 3, or less than about 2 gloss units.

Typically, the compositions further comprise one or more oils that ideally function as an emollient, but which are also optionally characterized by a low gloss value (e.g., lower than polybutene). Suitable oils may include, for example, isopropyl isostearate, isostearyl neopentanoate, isostearyl stearate, castor oil, lauryl lactate, ethylhexyl palmitate, isopropyl palmitate, glyceryl triacethyl hydroxystearate, diisopropyl adipate, octyl isononanoate, neopentyl glycol dioctanoate, neopentyl glycol dicaprate, isodecyl oleate, and myristyl myristate.

[0035] In one embodiment, the compositions comprise from about 0.1-75% by weight, or from about 1-50% by weight, or from about 2-30% by weight, or from about 5-20% by weight, or from about 5-15% by weight myristyl lactate, isopropyl isostearate, and/or isopropyl palmitate.

Other suitable oils that may used in the compositions of the invention include ester oils, such as fatty acid esters, and in particular, those esters commonly used as emollients in cosmetic formulations. Such esters will typically be the esterification product of an acid of the form R₄(COOH)₁₋₂ with an alcohol of the form R₅(OH)₁₋₃ where R₄ and R₅ are each independently linear, branched, or cyclic hydrocarbon groups, optionally containing unsaturated bonds (e.g., from 1-6 or 1-3 or 1), and having from 1 to 30 (e.g., 6-30 or 8-30, or 12-30, or 16-30) carbon atoms, optionally substituted with one or more functionalities including hydroxyl, oxa, oxo, and the like. Preferably, at least one of R₄ and R₅ comprises at least 8, or at least 10, or at least 12, or at least 16 or at least 18 carbon atoms, such that the ester oil comprises at least one fatty chain. The esters defined above will include, without limitation, the esters of mono-acids with mono-alcohols, mono-acids with diols and triols, di-acids with mono-alcohols, and tri-acids with mono-alcohols.

[0037] Suitable fatty acid esters include, without limitation, butyl isostearate, butyl oleate, butyl octyl oleate, cetyl palmitate, ceyl octanoate, cetyl laurate, cetyl lactate, cetyl isononanoate, cetyl stearate, diisostearyl fumarate, diisostearyl malate, neopentyl glycol dioctanoate, dibutyl sebacate, di-C₁₂₋₁₃ alkyl malate, dicetearyl dimer dilinoleate, dicetyl adipate, diisocetyl adipate, diisononyl adipate, diisopropyl dimerate, triisostearyl trilinoleate, octodecyl stearoyl stearate, hexyl laurate, hexadecyl isostearate, hexydecyl laurate, hexyldecyl octanoate, hexyldecyl oleate, hexyldecyl palmitate, hexyldecyl stearate, isononyl isononanaote, isostearyl isononate, isohexyl neopentanoate, isohexadecyl stearate, isopropyl isostearate, n-propyl myristate, isopropyl myristate, n-propyl palmitate, isopropyl palmitate, hexacosanyl palmitate, lauryl lactate, octacosanyl palmitate, propylene glycol monolaurate, triacontanyl palmitate, dotriacontanyl palmitate, tetratriacontanyl palmitate, hexacosanyl stearate, octacosanyl stearate, triacontanyl stearate, dotriacontanyl stearate, stearyl lactate, stearyl octanoate, stearyl heptanoate, stearyl stearate, tetratriacontanyl stearate, triarachidin, tributyl citrate, triisostearyl citrate, tri-C₁₂₋₁₃-alkyl citrate, tricaprylin, tricaprylyl citrate, tridecyl behenate, trioctyldodecyl citrate, tridecyl cocoate, tridecyl isononanoate, glyceryl monoricinoleate, 2-octyldecyl palmitate, 2-octyldodecyl myristate or lactate, di(2ethylhexyl)succinate, tocopheryl acetate, and the like.

[0038] Other suitable esters include those wherein R₅ comprises a polyglycol of the form H–(O–CHR*–CHR*)_n– wherein R* is independently selected from hydrogen or straight chain C₁₋₁₂ alkyl, including methyl and ethyl, as exemplified by polyethylene glycol monolaurate.

[0039] Salicylates and benzoates are also contemplated to be useful esters in the compositions of the invention. Suitable salicylates and benzoates include esters of salicylic acid or benzoic acid with an alcohol of the form R₆OH where R₆ is a linear, branched, or cyclic hydrocarbon group, optionally containing unsaturated bonds (*e.g.*, one, two, or three unsaturated bonds), and having from 1 to 30 carbon atoms, typically from 6 to 22 carbon atoms, and more typically from 12 to 15 carbon atoms. Suitable salicylates include, for example, octyl salicylate and hexyldodecyl salicylate, and benzoate esters including C₁₂₋₁₅ alkyl benzoate, isostearyl benzoate, hexyldecyl benzoate, benzyl benzoate, and the like.

[0040] Other suitable esters include, without limitation, polyglyceryl diisostearate/IPDI copolymer, triisostearoyl polyglyceryl-3 dimer dilinoleate, polyglycerol esters of fatty acids, and lanolin, to name but a few.

[0041] The oil may also comprise a volatile or non-volatile silicone oil. Suitable silicone oils include linear or cyclic silicones such as polyalkyl- or polyarylsiloxanes, for example, comprising alkyl groups having from 1 to 16 carbon atoms. Representative silicone oils include, for example, caprylyl methicone, stearyl dimethicone, cyclomethicone, cyclopentasiloxane decamethylcyclopentasiloxane, decamethyltetrasiloxane, diphenvl dodecamethylcyclohexasiloxane, dimethicone, dodecamethylpentasiloxane, heptamethylhexyltrisiloxane, heptamethyloctyltrisiloxane, hexamethyldisiloxane, methicone, methyl-phenyl polysiloxane, octamethylcyclotetrasiloxane, octamethyltrisiloxane, dimethiconol. perfluorononyl dimethicone, polydimethylsiloxanes, amodimethicone, dimethicone copolyol, and combinations thereof. The silicone oil will typically, but not necessarily, have a viscosity of between about 5 and about 3,000 centistokes (cSt), preferably between 50 and 1,000 cSt measured at 25°C.

[0042] In one embodiment, the silicone oil is a fluorinated silicone, such as a perfluorinated silicone (*i.e.*, fluorosilicones). Fluorosilicones are advantageously both hydrophobic and oleophobic and thus contribute to a desirable slip and feel of the product. Fluorosilicones can be gelled with behenyl behenate if desired. One suitable fluorosilicone is a fluorinated organofunctional silicone fluid having the INCI name Perfluorononyl Dimethicone. Perfluorononyl Dimethicone is commercially available from Phoenix Chemical under the trade name PECOSIL®.

[0043] The compositions may also comprise hydrocarbon oils. Exemplary hydrocarbon oils comprise straight or branched chain paraffinic hydrocarbons having from 5

to 80 carbon atoms, typically from 8 to 40 carbon atoms, and more typically from 10 to 16 carbon atoms, including but not limited to, pentane, hexane, heptane, octane, nonane, decane, undecane, dodecane, tetradecane, tridecane, and the like. Some useful hydrocarbon oils are highly branched aliphatic hydrocarbons, including C₈₋₉ isoparaffins, C₉₋₁₁ isoparaffins, C₁₂ isoparaffin, C₂₀₋₄₀ isoparaffins and the like. Special mention may be made of the isoparaffins having the INCI names isohexadecane, isoeicosane, and isododecane (IDD).

[0044] Also suitable as hydrocarbon oils are poly-alpha-olefins, typically having greater than 20 carbon atoms, including (optionally hydrogenated) C₂₄₋₂₈ olefins, C₃₀₋₄₅ olefins, polyisobutene, hydrogenated polyisobutene, hydrogenated polydecene, polybutene, hydrogenated polycyclopentane, mineral oil, pentahydrosqualene, squalene, squalane, and the like. The hydrocarbon oil may also comprise higher fatty alcohols, such as oleyl alcohol, octyldodecanol, and the like.

[0045] Other suitable oils include, without limitation, castor oil, C₁₀₋₁₈ triglycerides, caprylic/capric/triglycerides, coconut oil, corn oil, cottonseed oil, linseed oil, mink oil, olive oil, palm oil, illipe butter, rapeseed oil, soybean oil, sunflower seed oil, walnut oil, avocado oil, camellia oil, macadamia nut oil, turtle oil, mink oil, soybean oil, grape seed oil, sesame oil, maize oil, rapeseed oil, sunflower oil, cottonseed oil, jojoba oil, peanut oil, olive oil, and combinations thereof.

[0046] In one embodiment, the composition comprises from about 0.1-20%, or from about 0.5-15%, or from about 1-10%, or from about 2.5-7.5% by weight lanolin.

The compositions of the invention may comprise one or more waxes which may be present from about 1% to about 50% by weight of the composition, or from about 5 to about 27% by weight of the composition. Any suitable waxes may be used in the compositions of the invention, and may comprise natural, mineral and/or synthetic waxes. Natural waxes include those of animal origin (*e.g.*, beeswax, spermaceti, lanolin, and shellac wax) and those of vegetable origin (*e.g.*, carnauba, candelilla, bayberry, and sugarcane wax). Mineral waxes include, without limitation microcrystalline, ozokerite, ceresin, montan, paraffin, petroleum, and petrolatum waxes. Synthetic waxes include, for example, polyethylene glycols such as PEG-18, PEG-20, PEG-32, PEG-75, PEG-90, PEG-100, and PEG-180 which are sold under the tradename CARBOWAX® (The Dow Chemical Company). Mention may be made of the polyethylene glycol wax CARBOWAX 1000 which has a molecular weight range of 950 to 1,050 and a melting point of about 38°C, CARBOWAX 1450 which has a molecular weight

range of about 1,305 to 1,595 and a melting point of about 56°C, CARBOWAX 3350 which has a molecular weight range of 3,015 to 3,685 and a melting point of about 56°C, and CARBOWAX 8000 which has a molecular weight range of 7,000 to 9,000 and a melting point of about 61°C.

[0048] Suitable synthetic waxes also comprise Fischer Tropsch (FT) waxes and polyolefin waxes, such as ethylene homopolymers, ethylene-propylene copolymers, and ethylene-hexene copolymers. Representative ethylene homopolymer waxes are commercially available under the tradename POLYWAX® Polyethylene (Baker Hughes Incorporated) with melting points ranging from 80°C to 132°C. Commercially available ethylene-α-olefin copolymer waxes include, for example, those sold under the tradename PETROLITE® Copolymers (Baker Hughes Incorporated) with melting points ranging from 95°C to 115°C.

[0049] Other suitable waxes include silicone waxes, including alkyl silicones, such as alkyl dimethicone and alkyl methicone waxes.

[0050] The compositions of the invention may also comprise colorants, such as pigments, dyes, and lakes. In one embodiment, the compositions comprise a pigment, such as iron oxide and/or carbon black. Additional suitable pigments include inorganic pigments include, including, not limited to, inorganic oxides and hydroxides such as magnesium oxide, magnesium hydroxide, calcium oxide, calcium hydroxides, aluminum oxide, aluminum hydroxide, iron oxides (α-Fe₂O₃, γ-Fe₂O₃, Fe₃O₄, FeO) and iron hydroxides including red iron oxide, yellow iron oxide and black iron oxide, titanium dioxide, titanium lower oxides, zirconium oxides, chromium oxides, chromium hydroxides, manganese oxides, manganese hydroxides, cobalt oxides, cobalt hydroxides, cerium oxides, cerium hydroxides, nickel oxides, nickel hydroxides, zinc oxides and zinc hydroxides and composite oxides and composite hydroxides such as iron titanate, cobalt titanate and cobalt aluminate and the like. In some embodiments, the inorganic oxide particles may be selected from silica, alumina, zinc oxide, iron oxide and titanium dioxide particles, and mixtures thereof. In one embodiment, the pigments have a particle size from 5 nm to 100 microns, or from 5 nm to 25 microns, or from 10 nm to 10 microns. In some embodiments, the particle size (median) will be less than bout 5 microns or less than 1 micron.

[0051] Additional exemplary color additive lakes include, for example: D&C Red No. 19 (e.g., CI 45170, CI 73360 or CI 45430); D&C Red No. 9 (CI 15585); D&C Red No. 21 (CI 45380); D&C Orange No. 4 (CI 15510); D&C Orange No. 5 (CI 45370); D&C Red No. 27 (CI

45410); D&C Red No. 13 (CI 15630); D&C Red No. 7 (CI 15850:1); D&C Red No. 6 (CI 15850:2); D&C Yellow No. 5 (CI 19140); D&C Red No. 36 (CI 12085); D&C Orange No. 10 (CI 45475); D&C Yellow No. 19 (CI 15985); FD&C Red #40 (CI# 16035); FD&C Blue #1 (CI# 42090); FD&C Yellow #5 (CI# 19140); or any combinations thereof.

[0052] The pigments may be optionally surface treated, for example, to make the particles more hydrophobic or more dispersible in a vehicle. The surface of the particles may, for example, be covalently or ionically bound to an organic molecule or silicon-based molecule or may be absorbed thereto, or the particle may be physically coated with a layer of material. The surface treatment compound may be attached to the particle through any suitable coupling agent, linker group, or functional group (e.g., silane, ester, ether, etc). The compound may comprise a hydrophobic portion which may be selected from, for example, alkyl, aryl, allyl, vinyl, alkyl-aryl, aryl-alkyl, organosilicone, di-organosilicone, dimethicones, methicones, polyurethanes, silicone-polyurethanes, and fluoro- or perfluoro-derivatives thereof. Other hydrophobic modifiers include, but are not limited, lauroyl lysine, Isopropyl Titanium Triisostearate (ITT), ITT and Dimethicone (ITT/Dimethicone) cross-polymers, ITT and Amino Acid, ITT/Triethoxycaprylylsilane Crosspolymer, waxes (e.g., carnauba), fatty acids (e.g., Hexylactone stearates). HDI/Trimethylol Crosspolymer, PEG-8 Methyl. Triethoxysilane, aloe, jojoba ester, lecithin, perfluoroalcohol phosphate, and Magnesium Myristate (MM). In other embodiments, the pigments may be surface treated with galactoarabinose or glyceryl rosinate. In another embodiment, the pigments may be surface treated with Disodium Stearoyl Glutamate (and) Aluminum Dimyristate (and) Triethoxycaprylysilane.

Various fillers and additional components may be added to the compositions. Fillers may be present in an amount between about 0.1% and about 20% by weight of the composition, more typically between about 0.1% and about 10% by weight of the composition. Suitable fillers include, without limitation, silica, treated silica, talc, zinc stearate, mica, kaolin, Nylon powders such as Orgasol®, polyethylene powder, PTFE (e.g., Teflon®), powders, polypropylene powder, acrylates powders, starch, boron nitride, copolymer microspheres such as Expancel® (Nobel Industries), Polytrap® (Dow Corning) and silicone resin microbeads (Tospearl® from Toshiba), and the like.

[0054] Other fillers that may be used in the compositions of the invention include inorganic powders such as chalk, fumed silica, fumed alumina, calcium oxide, calcium carbonate, magnesium oxide, magnesium carbonate, Fuller's earth, attapulgite, bentonite,

muscovite, phlogopite, synthetic mica, lepidolite, hectorite, biotite, lithia mica, vermiculite, aluminum silicate, aluminum magnesium silicate, diatomaceous earth, starch, alkyl and/or trialkyl aryl ammonium smectites, chemically modified magnesium aluminum silicate, organically modified montmorillonite clay, hydrated aluminum silicate, hydrated silica, fumed aluminum starch octenyl succinate barium silicate, calcium silicate, magnesium silicate, strontium silicate, metal tungstate, magnesium, silica alumina, zeolite, barium sulfate, calcined calcium sulfate (calcined gypsum), calcium phosphate, fluorine apatite, hydroxyapatite, ceramic powder, metallic soap (zinc stearate, magnesium stearate, zinc myristate, calcium palmitate, and aluminum stearate), colloidal silicon dioxide; organic powder, cyclodextrin, methyl polymethacrylate powder, copolymer powder of styrene and acrylic acid, benzoguanamine resin powder, and poly(ethylene tetrafluoride) powder.

[0055] The compositions of the invention may comprise a film former, and in particular, a polymeric film former. The term polymeric film former may be understood to indicate a polymer which is capable, by itself or in the presence of at least one auxiliary filmforming agent, of forming a continuous film which adheres to a surface and functions as a binder for the particulate material. Suitable polymeric film formers include, without limitation, acrylic polymers or co-polymers, (meth)acrylates, alkyl (meth)acrylates, polyolefins, polyvinyls, polacrylates, polyurethanes, silicones, polyamides, polyethers, polyesters, fluoropolymers, polyethers, polyacetates, polycarbonates, polyamides, rubbers, epoxies, formaldehyde resins, organosiloxanes, dimethicones, amodimethicones, dimethiconols, methicones, silicone acrylates, polyurethane silicones copolymers, cellulosics, polysaccharides, polyquaterniums, and the like. Suitable film formers include those listed in the Cosmetic Ingredient Dictionary and Handbook, 12th Edition (2008), the disclosure of which is hereby incorporated by reference.

[0056] Suitable silicone acrylate copolymers include those comprising a poly(alkyl)acrylate backbone and a dimethicone polymer grafted to an alkyl ester side chain, such as the commercially available film former Cyclopentasiloxane (and) Acrylates/Dimethicone Copolymer (KP-545, Shin-Etsu Chemical Co., Ltd) and Methyl Trimethicone (and) Acrylates/dimethicone Copolymer (KP-549, Shin-Etsu Chemical Co., Ltd.).

[0057] Additional suitable polymeric film formers include, without limitation, Amino Bispropyl Dimethicone, Aminopropyl Dimethicone, Amodimethicone, Amodimethicone Hydroxystearate, Behenoxy Dimethicone, C₃₀₋₄₅ Alkyl Dimethicone, C₂₄₋₂₈ Alkyl

Dimethicone, C₃₀₋₄5 Alkyl Methicone, Cetearyl Methicone, Cetyl Dimethicone, Stearoxy Dimethicone, Stearyl Methicone, Stearyl Dimethicone and Vinyl Dimethicone. Particularly preferred are silicone polymers, including Methicone (as described by CTFA Monograph No. 1581, which is incorporated herein by reference), Dimethicones (as described by CTFA Monograph No. 840, which is incorporated herein by reference) and Amodimethicones as described by CTFA Monograph No. 189, which is incorporated herein by reference). In some embodiments, the film former comprises a hydrophilic film forming polymer, such as hydroxyethylcellulose or other cellulosics, PVP, and polyvinyl alcohol. Film forming polymers may be present in an amount between about 0.1% to about 15% by weight of the composition.

The compositions of the invention may also comprise a thickener, such as, for example, a polysaccharide or non-polysaccharide thickener. For example, polymers and copolymers of acrylic acid, including Acrylates Copolymer (INCI) are contemplated to be suitable. The composition may also comprise silica, xanthan gum, CMC, acrylic acid polymers, hydrated magnesium and aluminium silicates, or calcium silicates, or the like. Oilsoluble rheology modifiers such as trihydroxystearin and/or 12-hydroxystearic acid may also be included. Gellants, such as ester-terminated polyesteramides, and glutamide-based gelling agents, including N-lauroyl-L-glutamic acid dibutyl amide and N-2-ethylhexanoyl-L-glutamic acid dibutyl amide, can also be used. When present, thickeners may comprise from about 0.1% to about 15% by weight of the composition, more typically from about 1% to about 5% by weight of the composition. In some embodiments, the compositions of the invention are free of gellants or are substantially free of gellants, by which is meant that the amount of any such gellants is insufficient to provide a measurable difference in the rheology and/or gloss of said composition and in any event will be less than 0.1% by weight.

The compositions of the invention may also comprise additional emollients and/or humectants. Suitable emollients include, without limitation, isopropyl myristate, petrolatum, volatile or non-volatile silicones oils (*e.g.*, methicone, dimethicone), ester oils, mineral oils, hydrocarbon oils, and fatty acid esters. Suitable humectants include those such as polyols (*e.g.*, glycols), including without limitation, glycerin, C₃₋₂₄ polyols such as propylene glycol, ethoxydiglycol, butylene glycol, pentylene glycol, hexylene glycol, caprylyl glycol, sugar alcohols, sorbitol, xylitol, and the like. Such components may be present, for example, in an individual or collective amount between about 0.001% to about 50% by weight of the

composition. In some embodiments, the compositions are free of humectants or are substantially free of humectants by which is meant that their inclusion is at levels that are insufficient to affect the gloss of the composition and/or to impart a measurable moisturizing benefit to the skin.

[0060] The compositions of the invention may include a cosmetically or dermatologically acceptable vehicle that may be substantially anhydrous. The vehicle may be in the form of, for example, a serum, a cream, a lotion, a gel, or a stick, and may comprise an emulsion (e.g., polyol-in-silicone, silicone-in-polyol emulsion, etc.), or may comprise an ethanolic vehicle, silicone (e.g., cyclomethicone, dimethicone, etc.), hydrocarbon (e.g., petrolatum, isododecane, etc.), ester oil (e.g., isopropyl myristate, myristyl myristate), or the like. The vehicle may further comprise an emulsifier, gelling agent, structuring agent, rheology modifier (e.g., a thickener), film former, or the like. The vehicle may comprise any of the oils and emollients described herein. The vehicle may comprise from about 25% to about 99% by weight of the composition.

[0061] In some embodiments, the compositions are free of or substantially free of volatile silicones, including volatile cyclomethicones, such as D4 and/or D5. In this context, "substantially free of" volatile silicones means that the compositions comprise less than 0.5% (typically, less than 0.25% or less than 0.1% by weight) volatile silicones based on the weight of the entire composition.

The compositions of the invention may also comprise one or more sunscreen actives, which may be organic or inorganic, and/or water-soluble or oil soluble, and include those with UVA and/or UVB absorbance from about 290 to about 400 nanometers solar radiation. Such sunscreen actives include, but are not limited to, one or more of the following: DEA methoxycinnamate, octylmethoxy cinnamate, drometrizole trisiloxane, oxybenzone, octyl methoxycinnamate, octyl salicylate, homomenthyl salicylate, octocrylene, avobenzone, octyl dimethyl PABA, TEA salicylate, 4-methyl benzilidene camphor, terephthalydiene dicamphor sulfonic acid, ethyl PABA, hydroxy methylphenyl benzotriazole, methylene bisbenzotriazoyltetramethylbutylphenol, bis-ethylhexyloxyphenol methoxyphenol triazine, zinc oxide, titanium dioxide or any derivatives, or any combinations thereof. The sunscreen may be present, for example, from about 1% by weight to about 30% by weight (e.g., 5-12.5% by weight) of the total weight of the composition.

The compositions may further include an emulsifier. The amount of emulsifier will typically be from about 0.001 to about 10 % by weight, but preferably will range from about 0.01 to about 5 % by weight, and most preferably about 0.1 to about 1 % by weight, based upon the total weight of the composition. The emulsifier may be ionic, zwitterionic, or nonionic. Suitable emulsifiers include those of the polyethoxylated type (*e.g.*, polyoxyethylene ethers or esters), polydiorganosiloxane-polyoxyalkylene block copolymers (*e.g.*, dimethicone copolyol), Steareth-20, Steareth-21, fatty alcohols (*e.g.*, Cetearyl Alcohol), Polyoxethylene sorbitan fatty acid esters (*i.e.*, polysorbates), and Hydrogenated Castor Oil, to name a few. Additional emulsifiers are provided in the INCI Ingredient Dictionary and Handbook 11th Edition 2006, the disclosure of which is hereby incorporated by reference.

[0064] The composition may comprise one or more preservatives or antimicrobial agents, such as methyl, ethyl, or propyl paraben, phenoxyethanol, and so on, in amounts ranging between about 0.0001% to about 5% by weight of the composition. In one embodiment, the preservative comprises caprylyl glycol.

[0065] Other suitable components include those agents that provide a prophylactic or therapeutic benefit to skin. Particular mention may be made of alpha-hydroxy acids, beta hydroxyl acids, ascorbic acid or Vitamin C and derivatives thereof (e.g., C₁-C₈ esters thereof); retinoids such as retinol (Vitamin A) and the esters thereof (e.g., C₁-C₈ esters, such as palmitate), retinoic acid and the derivatives thereof, hyaluronic acid, chemical sun screens useful in the cosmetic field including any UVA and UVB filter useful in the cosmetic field including mixtures thereof and blends with physical filters including, but not limited to metal oxide particles such as titanium oxides and/or zinc oxides. Additional benefit agents include botanicals, thiodipropionic acid (TDPA) and esters thereof; (e.g., retinoic acid, all-transretinoic acid, retinaldehyde, retinol, and retinyl esters such as acetates or palmitates, and others); alpha-hydroxy acids (e.g., glycolic acid), beta-hydroxy acids (e.g., salicylic acid and salicylates); exfoliating agents (e.g., glycolic acid, 3,6,9-trioxaundecanedioic acid, etc.), depigmenting agents (e.g., hydroquinone, kojic acid, etc.), estrogen synthetase stimulating compounds (e.g., caffeine and derivatives); compounds capable of inhibiting 5 alpha-reductase activity (e.g., linolenic acid, linoleic acid, finasteride, and mixtures thereof); antioxidants (e.g., BHT, ascorbic acid, sodium ascorbate, ascorbyl palmitate, beta-carotene, thiodipropionic acid, vitamin E, etc.), barrier function enhancing agents (e.g., ceramides, glycerides, cholesterol and its esters, alpha-hydroxy and omega-hydroxy fatty acids and esters thereof, etc.); collagenase

inhibitors; and elastase inhibitors; to name a few. These benefit agents will typically be present, if at all, in amounts between about 0.001% and about 10% by weight of the composition.

[0066] Additional ingredients may be included in the compositions, and comprise rheology modifiers, stabilizers, dispersants, active ingredients (e.g., collagenase inhibitors, elastase inhibitors, collagen stimulators, depigmenting agents, desquamating agents, etc.), preservatives, pH adjusters, colorants, fragrances, flavorants, anesthetics, anti-allergenics, antifungals, anti-inflammatories, antiseptics, chelating agents (e.g., EDTA and salts thereof), fragrances, lubricants, masking agents, medicaments, moisturizers, protectants, soothing agents, stabilizers, antioxidants (e.g., BHT, TDPA, etc.), botanicals, surfactants, viscosifiers, vitamins, or any combinations thereof. Such components may be present, for example, in an individual or collective amount between about 0.001% to about 50% by weight of the composition.

[0067] The compositions of the invention are useful for application to the human integumentary system, including, skin, lips, nails, hair, and other keratinous surfaces and keratin fibers. As used herein, the term "keratinous surface" refers to keratin-containing portions of the human integumentary system, which includes, but is not limited to, skin, lips, hair (including eyebrows and eyelashes), and nails (toenails, fingernails, cuticles, etc.) of mammalians, preferably humans. A "keratin fiber" includes hair of the scalp, eyelashes, eyebrows, facial hair, and body hair such as hair of the arms, legs, etc.

[0068] The compositions of the invention may be used in any kind of cosmetic or personal care formulation that can be applied to a human integument, and may be in the form of a solid stick, a liquid, a cream, a lotion, a powder, *etc*. For example, the cosmetic composition may be, without limitation, in the form of lipstick, lip color, mascara, eye liner, blush, bronzer, powder, eye shadow, nail polish, foundation, concealer, and the like. Personal care products may include, for example, day creams or lotions, night creams or lotions, sunscreen lotions, creams, or oils and other SPF products, moisturizers, salves, ointments, gels, body milks, artificial tanning compositions, depilatories, *etc*. In some embodiments, the compositions are in the form of a lipstick. A lipstick may have suitable hardness to be a mold, free-standing stick.

[0069] Methods are also provided for imparting matte color to the lips comprising applying the composition to the lips to form a film of lipstick composition thereon. In some embodiments, a plurality of coats is applied.

[0070] In one embodiment, the composition is intended for use as a non-therapeutic treatment. In another embodiment, the composition is an article intended to be rubbed, poured, sprinkled, or sprayed on, introduced into, or otherwise applied to the human body for cleansing, beautifying, promoting attractiveness, or altering the appearance, in accordance with the US FD&C Act, §201(i).

EXAMPLES

[0071] Example 1. Lipstick Composition

[0072] A matte lipstick composition of the invention was prepared according to the formula in Table 1. The lipstick composition has a matte finish when applied to the lips without being drying or uncomfortable on the lips.

Table 1.

Material	% wt
Ester oils	~40
Butylated Hydroxytoluene (BHT)	0.05
Tocopheryl Acetate	0.05
Preservative	0.50
Thickener	1.20
Waxes	10.5
Sunscreen	7.50
Pigments	10.00
Polyethylene powder	5.00
Microsorb 944S	3.50
Novatext MAT	22.00

[0073] Example 2: Gloss Values of Lipstick Compositions

[0074] Several lipstick compositions were prepared with varying amounts of mattifying powders and emollients, as described in detail below. Each of the lipstick compositions was made with the same base, according to the formula in Table 2.

Table 2. Lipstick Base

<u>Material</u>	Weight (%)
Octyldodecanol	9.90
C12-15 Alcohols Benzoate	4.15
Myristyl Lactate	10.00
Lanolin	4.50
Polybutene	2.75
Polyglycerol Diisostearate	3.00
Butylated Hydroxytoluene (BHT)	0.05
Tocopheryl Acetate	0.05
Caprylyl Glycol	0.50
Phenyl Trimethicone (and) Disteardimonium Hectorite (and) Triethyl Citrate	2.20
Ozokerite wax	5.50
Microcrystalline wax	5.00
Polyethylene wax	3.00
Ethylhexyl-methoxycinnamate	7.40

[0075] Two lipsticks (A and B) were prepared with the base ingredients from Table 2 above. In addition to the base ingredients, the lipsticks included the ingredients listed in Table 3 below. Lipstick B, a lipstick composition of the invention, included both Microsorb 944S and Novatext MAT in the amounts indicated. In contrast, Lipstick A included Microsorb 944S, but castor oil was used in place of Novatext MAT.

[0076] The shine/gloss intensity of each lipstick was assessed using a gloss test. A gloss meter determines the gloss intensity, or shine, of a cosmetic film by measuring specular reflectance. The gloss is reported in "gloss units." Films of 3 mil thickness of each lipstick were drawn onto 7 mil thick clear polyester panels. Each of the sample films was flat and free of structures. The films were allowed to dry for one hour prior to measurement. The samples were placed on a heating blanket at 35° C to approximate the temperature of skin. A light source was placed at 20° and the specular reflection of the heated sample was measured.

	Lipstick A			Lipstick B		
Ingredient	%	Weight (g)	Ingredient	%	Weight (g)	
Base	58	17.4	Base	58	17.4	
Pigment	10	3	Pigment	10	3	
Microsorb 944S	5	1.5	Microsorb 944S	5	1.5	
Castor oil	27	8.1	Novatext MAT	27	8.1	
Total	100	30	Total	100	30	
Gloss value	42.39 ± 5.62		Gloss value	2.00	± 0.13	

Table 3

[0077] As shown in Table 3, the gloss value of Lipstick A, which contained Microsorb 944S but no Novatext MAT, was 42.39 ± 5.62 . In contrast, the gloss value of Lipstick B, which contained both Microsorb 944S and Novatext MAT, was substantially reduced at 2.00 ± 0.13 gloss units, indicating that Lipstick B is characterized by very low shine or gloss, and therefore a matte finish.

Three more lipsticks (C, D, and E) were prepared with the base ingredients from Table 2 above. In addition to the base ingredients, the lipsticks were made with the ingredients listed in Table 4 below. Lipstick C included Novatext MAT and no Microsorb 944S, Lipstick D included both Novatext MAT and Microsorb 944S, and Lipstick E contained castor oil, and neither Novatext MAT nor Microsorb 944S. The shine/gloss intensity of each lipstick was assessed using the gloss test described above. In Table 4, the "emollient" is Novatext MAT in Lipstick samples C and D, and castor oil in Lipstick E.

	<u>Lips</u>	stick C	Lips	tick D	<u>Lip</u>	stick E
<u>Ingredient</u>	<u>%</u>	<u>Wt. (g)</u>	<u>%</u>	<u>Wt. (g)</u>	<u>%</u>	<u>Wt. (g)</u>
Base	58	17.4	58	17.4	58	17.4
Pigment	10	3	10	3	10	3
Microsorb 944S			5	1.5		
Emollient	32	9.6	27	8.1	32	9.6
Total	100	30	100	30	100	30
Gloss	40.03 ± 4.27		3.15	± 1.21	78.9	2 ± 1.93

[0079] As shown in Table 4, the gloss value of Lipstick E, which contained neither Novatext MAT nor Microsorb 944S, and included castor oil as the emollient, had a high gloss value of 78.92 ± 1.93 gloss units. When Novatext MAT replaced castor oil in Lipstick C, the gloss value was reduced to 40.03 ± 4.27 . Notably, when both Novatext MAT and Microsorb 944S were used in Lipstick D, the gloss value was dramatically reduced to 3.15 ± 1.21 , demonstrating that the combination of the two ingredients yields a lipstick characterized by very low shine or gloss, and therefore a matte finish.

[0080] Example 3: Gloss Values of Additional Lipstick Compositions

above. In addition to the base ingredients, the lipsticks were made with the ingredients listed in Table 5 below. Specifically, the "powder" in Lipstick F contained micronized polyethylene (60% by weight), calcium silicate (39% by weight), and silica (1% by weight) (the individual components of Microsorb 944S). The powder containing these three ingredients was not prepared by co-extrusion, and was merely a physical blend. The powder in Lipstick G was micronized polyethylene. The powder in Lipstick H was calcium silicate. The powder in Lipstick I was silica. As indicated in Table 5, the oil used in each of Lipsticks F-I was castor oil. The shine/gloss intensity of each lipstick was assessed using a gloss test, as described above.

Table 5

	<u>Lipstick F</u>	<u>Lipstick G</u>	<u>Lipstick H</u>	<u>Lipstick I</u>
Ingredient	% weight	% weight	% weight	% weight
Base	58	58	58	58
Pigment	10	10	10	10
Powder	5	5	5	5
Castor oil	27	27	27	27
Total	100	100	100	100
Gloss value	64.21 ± 5.21	58.20 ± 8.25	53.14 ± 8.68	71.03 ± 3.53

[0082] The gloss values in all of the lipsticks tested were greater than 50.

[0083] Four additional lipsticks (J, K, L, M) were prepared with the base ingredients from Table 2 above. In addition to the base ingredients, the lipsticks were made with the ingredients listed in Table 6 below. The oil used in each of Lipsticks J-M was Novatext MAT, (compared to the lipsticks in Table 5 above, which used castor oil). The "powder" in Lipstick J contained micronized polyethylene (60% by weight), calcium silicate (39% by weight), and silica (1% by weight) (the components of Microsorb 944S) as in Lipstick F. The powder in Lipstick K was micronized polyethylene. The powder in Lipstick L was calcium silicate. The powder in Lipstick M was silica. The shine/gloss intensity of each lipstick was assessed using the gloss test described above.

Table 6

	<u>Lipstick J</u>	<u>Lipstick K</u>	<u>Lipstick L</u>	<u>Lipstick M</u>
<u>Ingredient</u>	% weight	% weight	% weight	% weight
Base	58	58	58	58
Pigment	10	10	10	10
Powder	5	5	5	5
Novatext MAT	27	27	27	27

Total	100	100	100	100
Gloss	24.92 ± 5.55	20.23 ± 2.42	16.13 ± 2.46	29.67 ± 1.60

[0084] As indicated in Table 6, the gloss values of each lipstick J-M (all contained Novatext MAT) was lower than the gloss values obtained from samples F-I in Table 5, all of which contained castor oil. These data show that replacing castor oil with Novatext MAT results in lipsticks with lower gloss values and a more matte finish.

Five additional lipsticks (N, O, P, Q, R) were prepared with the base ingredients from Table 2 above. In addition to the base ingredients, the lipsticks were made with the ingredients listed in Table 7 below. Specifically, the "oil" in Lipstick N was hydrogenated polyisobutene (75% weight), polymethylsilsequioxane (10% by weight), vinyl dimethicone/methicone silsequioxane crosspolymer (10%), and ethylene/propylene copolymer (5%) (the same components of Novatext MAT). The oil in Lipstick O was hydrogenated polyisobutene. The oil in Lipstick P was polymethylsilsequioxane. The oil in Lipstick Q was vinyl dimethicone/methicone silsequioxane crosspolymer. The oil in Lipstick R was ethylene/propylene copolymer. This sample was too hard to draw down a film for gloss evaluation. No Miscrosorb 944S was added to these lipsticks. The shine/gloss intensity of each lipstick was assessed using the gloss test described above.

Table 7

	Lipstick N	Lipstick O	Lipstick P	Lipstick Q	Lipstick R
Ingredient	% weight	% weight	% weight	% weight	% weight
Base	58	58	58	58	58
Pigment	10	10	10	10	10
Oil	32	32	32	32	32
Total	100	100	100	100	100
Gloss value	58.01 ± 2.99	53.50 ± 6.52	51.38 ± 5.27	25.93 ± 7.90	n/a

Five additional lipsticks (S, T, U, V, W) were prepared with the base ingredients from Table 2 above. In addition to the base ingredients, the lipsticks were made with the ingredients listed in Table 8 below. Unlike the lipsticks in Table 7 above, lipsticks S-W each contained Microsorb 944S in addition to the oil. Specifically, the "oil" in Lipstick S was hydrogenated polyisobutene (75% weight), polymethylsilsequioxane (10% by weight), vinyl dimethicone/methicone silsequioxane crosspolymer (10%), and ethylene/propylene copolymer (5%) (the same components of Novatext MAT). The oil in Lipstick T was hydrogenated polyisobutene. The oil in Lipstick U was polymethylsilsequioxane. The oil in Lipstick V was vinyl dimethicone/methicone silsequioxane crosspolymer. This sample was too hard to draw down a film for gloss evaluation. The oil in Lipstick W was ethylene/propylene copolymer. This sample was too hard to draw down a film for gloss evaluation. The shine/gloss intensity of each lipstick was assessed using a gloss test, as described above.

	Lipstick S	Lipstick T	Lipstick U	Lipstick V	Lipstick W
Ingredient	% weight	% weight	% weight	% weight	% weight
Base	58	58	58	58	58
Pigment	10	10	10	10	10
Microsorb 944S	5	5	5	5	5
Oil	$27^{(1)}$	27 ⁽²⁾	$27^{(3)}$	27 ⁽⁴⁾	27 ⁽⁵⁾
Total	100	100	100	100	100
Gloss value	8.58 ± 1.21	12.02 ± 1.39	9.12 ± 1.35	n/a	n/a

Table 8

- (2) hydrogenated polyisobutene
- (3) polymethylsilsequioxane
- (4) vinyl dimethicone/methicone silsequioxane crosspolymer
- (5) ethylene/propylene copolymer

[0087] The data in Table 8 demonstrate that the addition of Microsorb 944S to the components that constitute Novatext MAT, results in lipstick compositions that have substantially lower gloss values as compared to the sample of Table 7. The data further show that the combination of Microsorb 944S and the oil components yields a lipstick characterized by low gloss, and therefore a matte finish.

⁽¹⁾ hydrogenated polyisobutene (75% weight), polymethylsilsequioxane (10% by weight), vinyl dimethicone/methicone silsequioxane crosspolymer (10% by weight), and ethylene/propylene copolymer (5% by weight)

[0088] Example 4: Gloss Values of Additional Lipstick Compositions

[0089] Several additional lipsticks (1-8) were prepared with the base ingredients from Table 2 above. In addition to the base ingredients, each of the lipsticks contained two mattifying powders (A and B), and an oil, as specified in Tables 9 and 10 below. Each of the 8 lipsticks contained 58% base, 10% pigment, 5% Powder A, 5% Powder B, and 22% oil. The shine/gloss intensity of each lipstick was assessed using a gloss test, as described above.

Table 9

Ingredient	Lipstick 1	Lipstick 2	Lipstick 3	Lipstick 4
Powder A	Matte mica	Matte mica	Micronized polyethylene	Micronized polyethylene
Powder B	Microsorb 944S	Silica	Microsorb 944S	Silica
Oil	Novatext MAT	Novatext MAT	Novatext MAT	Novatext MAT
Gloss value	1.7 ± 0.3	35.7 ± 5.0	1.6 ± 0.2	9.5 ± 2.4

[0090] The data in Table 9 demonstrate that only the lipsticks (1 and 3) containing both Microsorb 944S and Novatext MAT are characterized by gloss values less than 5. When silica replaces Microsorb 944S (Lipstick 2 vs. 1), the gloss value increases substantially, although slightly less so when micronized polyethylene is used as Powder A, compared with matte mica (Lipstick 4 vs. 3).

Table 10

Ingredient	Lipstick 5	Lipstick 6	Lipstick 7	Lipstick 8
Powder A	Micronized polyethylene	Micronized polyethylene	Matte mica	Matte mica
Powder B	Microsorb 944S	Silica	Microsorb 944S	Silica
Oil	Castor oil	Castor oil	Castor oil	Castor oil
Gloss value	10.7 ± 2.2	27.4 ± 5.0	12.7 ± 2.3	68.1 ± 9.5

[0091] The data in Table 10 demonstrate that the lipsticks containing Microsorb 944S (Lipsticks 5 and 7) have lower gloss values than those that contain silica in place of Microsorb 944S (Lipsticks 6 and 8).

[0092] Example 5: Evaluation of Silicone Emollients

[0093] A variety of silicone polymer oil emollients were formulated into lipsticks to compare in combination with Microsorb 944S and the gloss was measured as above. The lipsticks were prepared according to Table 11.

Table 11.

Ingredient	Weight (%)
Lipstick Base (Table 2)	58
Pigment	10
Microsorb 944S	5
Silicone Emollient	27
TOTAL	100

[0094] The various silicone emollients tested are shown in Table 12, and were employed at 27% by weight of the lipstick on an "as received" basis. The gloss value was measure as above for each formulation.

Table 12.

Silicone Emollient	INCI Name	Gloss Value
VELVESIL 125 (Momentive)	Cyclopentasiloxane (and) C30-45 Alkyl Ceteraryl Dimethicone Crosspolymer	5.05 ± 0.59
9040 Silicone Elastomer Blend (Dow Corning)	Cyclopentasiloxane (and) Dimethicone Crosspolymer	7.29 ± 0.75
839 (Momentive)	Cyclopentasiloxane (and) Dimethicone / Vinyl Dimethicone Crosspolymer	8.97 ± 1.85
9041 Silicone Elastomer Blend (Dow Corning)	Dimethicone (and) Dimethicone Crosspolymer	9.72 ± 3.04

Y-17483 (GE-GEL) (Momentive)	Dimethicone (and) Cetearyl Dimethicone Crosspolymer (and) PEG/PPG–20/23 Dimethicone	12.89 ± 2.29
KP545 (ShinEtsu)	Cyclopentasiloxane (and) Acrylates / Dimethicone Copolymer	12.99 ± 1.16
9046 Silicone Elastomer Blend (Dow Corning)	Cyclopentasiloxane (and) Petrolatum (and) Dimethicone Crosspolymer	14.35 ± 1.63
KP549 (ShinEtsu)	Methyl Trimethicone (and) Acrylates / Dimethicone Copolymer	14.39 ± 1.49
Novatext MAT (Innovation Co.)	Hydrogenated Polyisobutene (and) Polymethylsilsesquioxane (and) Vinyl Dimethicone / Methicone Silsesquioxane Crosspolymer (and) Ethylene / Propylene Copolymer	15.14 ± 3.20
GRANSIL DMG-6 (Grant)	Dimethicone (and) Polysilicone-11	16.94 ± 1.56
KSG-16 (ShinEtsu)	Dimethicone (and) Dimethicone / Vinyl Dimethicone Crosspolymer	21.65 ± 6.04
GRANSIL PM- GEL (Grant)	Phenyl Trimethicone (and) Polysilicone-11	34.07 ± 5.21

[0095] As shown in Table 12, Dow Corning's 9041 Silicone Elastomer Blend having the INCI name Dimethicone (and) Dimethicone Crosspolymer provided a gloss value of less than 12.5. This material is preferred over the other Dow Corning Elastomer Blends because it does not comprise the volatile solvent cyclopentasiloxane which may present manufacturing difficulties. In some embodiments, the silicone oils used in lipsticks according to the invention and/or the lipsticks themselves are free of or substantially free of cyclopentasiloxane and other volatile silicone solvents having a boiling point and/or a flash point below that of cyclopentasiloxane. By "substantially free of" is meant, in this context, is meant less than 0.5%, or less than 0.25% or less than 0.1% by weight of the composition.

[0096] Example 6: Gloss Measurements of Lipsticks

Four lipsticks (AA, BB, CC and DD) were prepared with the base ingredients from Table 2 above. In addition to the base ingredients, the lipsticks were made with the ingredients listed in Table 11 below. Lipstick AA included castor oil as the oil emollient and did not contain Microsorb 944S. Lipstick BB included castor oil as the oil emollient and contained 5% (wt/wt) of Microsorb 944S. Lipstick CC included the silicone crosspolymer, Dow Corning 9041 Silicone Elastomer Blend, as the oil emollient and did not contain Microsorb 944S. Lipstick DD included Dow Corning 9041 Silicone Elastomer Blend as the oil emollient and contained 5% (wt/wt) of Microsorb 944S. The shine/gloss intensity of each lipstick was assessed using the gloss test described above.

Lipstick Lipstick Lipstick Lipstick BBCCDD AAIngredient <u>%</u> <u>%</u> <u>%</u> <u>%</u> 58 58 58 58 Base **Pigment** 10 10 10 10 Microsorb 5 5 944S $32^{(1)}$ $27^{(1)}$ 32(2) $27^{(2)}$ Emollient 100 Total 100 100 100 $34.34 \pm$ $22.13 \pm$ $12.05 \pm$ $73.48 \pm$ Gloss

2.67

Table 13.

(1) Emollient in AA and BB is Castor Oil

1.17

(2) Emollient in CC and DD is Dow Corning 9041 Silicone Elastomer Blend

7.14

[0098] As shown, only Lipstick DD, having a combination of Microsorb 944S and a silicone crosspolymer emollient oil (Dow Corning 9041 Silicone Elastomer Blend), achieved very low gloss (e.g., <20 or <17.5 or <15 or <12.5, etc.).

1.83

[0099] Example 7: Lipstick

[00100] A matte lipstick composition of the invention was prepared according to the formula in Table 14. The lipstick composition has a matte finish when applied to the lips without being drying or uncomfortable on the lips

Table 14.

Ingredient	<u>Wt. %</u>
Ester Oils	30-60
Lanolin	1-8
Tocopheryl Acetate	0.1-2
Preservative	0.01-2
Thickener	0.1-5
Sunscreen	1-15
Butylated Hydroxytoluene (BHT)	0.01-1
Waxes	1-12
Pigments	1-15
Fragrance	0.01-1
Polyethylene (~12 micron)	1-10
Microsorb 944S	1-10
Silicone-based Emollient	1-25

[00101] The lipstick according to Table 14 may be formulated with any of the silicone-based Emollients described herein, including, Dow Corning 9041 Silicone Elastomer Blend (Dimethicone (and) Dimethicone Crosspolymer) and/or Novatext MAT. In some embodiments, the amount of the Silicone-based Emollient in Table 14 is varied from about 1-25% (w/w) or from about 10-20% (w/w).

[00102] The invention described and claimed herein is not to be limited in scope by the specific embodiments herein disclosed since these embodiments are intended as illustrations of several aspects of the invention. Any equivalent embodiments are intended to be within the scope of this invention. Indeed, various modifications of the invention in addition to those shown and described therein will become apparent to those skilled in the art from the foregoing

description. Such modifications are also intended to fall within the scope of the appended claims. All publications cited herein are incorporated by reference in their entirety.

CLAIMS

- 1. A cosmetic lip composition comprising a mattifying powder comprising Polyethylene (and) Calcium Silicate (and) Silica; wherein said composition is characterized by a gloss value of less than about 50.
- 2. The cosmetic lip composition according to claim 1, wherein said mattifying powder comprises from about 50% to about 70% by weight polyethylene, from about 30% to about 50% by weight calcium silicate, and from about 0.5% to about 5% by weight silica.
- 3. The cosmetic lip composition according to claim 1, wherein said mattifying powder is a product of co-extrusion of polyethylene powder, calcium silicate, and silica.
- 4. The cosmetic composition according to claim 1, further comprising an emollient comprising a silicone crosspolymer or silicone elastomer, and wherein said composition is characterized by a gloss value of less than about 40.
- 5. The cosmetic composition according to claim 2, wherein said emollient comprises Dimethicone Crosspolymer (INCI).
- 6. The cosmetic lip composition according to claim 4, wherein said mattifying powder comprises between about 0.5% and about 10% by weight of said composition and wherein said emollient comprises between about 10% and about 30% of said composition.
- 7. The cosmetic composition according to claim 1, further comprising an emollient comprising hydrogenated Polyisobutene (and) Polymethylsilsesquioxane (and) Vinyl Dimethicone/Methicone Silseaquioxane Crosspolymer (and) Ethylene/Propylene Copolymer (INCI); and wherein said composition is characterized by a gloss value of less than about 40.
- 8. The cosmetic lip composition according to claim 7, wherein said emollient comprises from about 60% to about 80% by weight hydrogenated polyisobutene, from about 5% to about 15% by weight polymethylsilsesquioxane, from about 5% to about 15% by weight vinyl

dimethicone/methicone silseaquioxane crosspolymer, and from about 1% to about 10% by weight ethylene/propylene copolymer.

- 9. The cosmetic lip composition according to claim 1, characterized by a gloss value of less than about 20.
- 10. The cosmetic lip composition according to claim 1, further comprising a pigment and wherein the total particulate content comprises less than about 30% by weight of the composition.
- 11. The cosmetic lip composition according to claim 1, further comprising micronized polyethylene.
- 12. The cosmetic lip composition according to claim 1, wherein the composition is substantially free of shine agents.
- 13. The cosmetic lip composition according to claim 1, further comprising an oil selected from the group consisting of isopropyl palmitate, isopropyl isostearate, isostearyl neopentanoate, isostearyl stearate, castor oil, lauryl lactate, ethylhexyl palmitate, glyceryl triacethyl hydroxystearate, diisopropyl adipate, octyl isononanoate, neopentyl glycol dioctanoate, neopentyl glycol dioctanoate, neopentyl glycol dicaprate, isodecyl oleate, and myristyl myristate.
- 14. The cosmetic lip composition according to claim 1, wherein the composition is substantially anhydrous.
- 15. A method of imparting matte color to a human integument comprising applying to the human integument a film of a composition comprising a mattifying powder comprising Polyethylene (and) Calcium Silicate (and) Silica, wherein said composition is characterized by a gloss value of less than about 50.
- 16. The method of claim 15, wherein the composition further comprises an emollient comprising a silicone crosspolymer or silicone elastomer; and wherein said composition is characterized by a gloss value of less than about 40.

17. The method of claim 16, wherein said silicone crosspolymer comprises Dimethicone Crosspolymer (INCI); and wherein said composition is characterized by a gloss value of less than about 40.

- 18. The method of claim 15, wherein the composition further comprises an emollient comprising hydrogenated Polyisobutene (and) Polymethylsilsesquioxane (and) Vinyl Dimethicone/Methicone Silseaquioxane Crosspolymer (and) Ethylene/Propylene Copolymer; and wherein said composition is characterized by a gloss value of less than about 40.
- 19. A method for imparting a matte film to human lips, comprising applying thereto a composition comprising from about 1-10% by weight of a mattifying polymeric powder characterized by an oil absorption value greater than 100 (g/100 g) as measured by ASTM D281-12, in an anhydrous vehicle comprising an emollient characterized by a gloss value less than the gloss value of castor oil; a wax content between about 10-27% by weight; and one or more pigments, fillers, or cosmetic powders, wherein the total particulate content of said composition is less than 25% by weight, and wherein said composition is characterized by a gloss value of less than about 40.
- 20. The method according to claim 19, wherein said emollient comprises Dimethicone Crosspolymer, said mattifying powder comprises Polyethylene (and) Calcium Silicate (and) Silica, and wherein said composition further includes a fatty alcohol and/or ester oil in an amount from about 20-75% by weight of the composition.

INTERNATIONAL SEARCH REPORT

International application No. PCT/US15/17654

A. CLASSIFICATION OF SUBJECT MATTER

IPC(8) - A61K8/25, 8/81; A61Q1/06 (2015.01)

CPC - A61K8/25, 8/8111; A61Q1/06

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IC: A61K8/02, 8/25, 8/81, 8/92; A61Q1/06, 1/12; A61Q90/00; C08L23/06 (2015.01)

CPC: A61K8/022, 8/25, 8/8111, 8/92, 2800/26, 2800/31; A61Q1/06, 1/12; C08L23/06; Y10S424/05

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)

PatSeer (US, EP, WO, JP, DE, GB, CN, FR, KR, ES, AU, IN, CA, INPADOC Data); Google Scholar; ProQuest; EBSCO; Lipstick, lip, skin, integument, cosmetic, polyethylene, polyethene, calcium silicate, Ca2SiO4, silica, SiO2, matte, mattifying, non-shiny, non-glossy, low luster, finish, surface, appearance, texture, weight percent, anhydrous, gloss value, wax, polymer

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Υ	EP 1 640 040 A1 (L'OREAL) 29 March 2006; paragraphs [0002], [0009], [0044], [0058], [0067], [0073], [0084], [0149], [0194], [0221], [0238]	1, 3-4, 6-7, 9-20
Y	JP 2000/319,540 A (HORINO, M) 21 November 2000; paragraphs [0004], [0009], [0024], [0036], [0058], [0067], [0084]	1, 3-4, 6-7, 9-20
Υ	US 2013/0295148 A1 (CLAUDE-FOLY, C et al.) 07 November 2013; paragraphs [0001], [0003], [0058], [0140]-[0141], [0251], [0254], [0272], [0276]; claim 22	3, 12
Y	(THE INNOVATION COMPANY) Novatext Velvet. [Retrieved from the Internet 29.04.2015]. [Retrieved from: <url: 1175033.pdf="" documents="" https:="" www.ulprospector.com="">]; page 1</url:>	7-8, 18
Y	US 2013/0266797 A1 (SEKISUI PLASTICS CO. LTD.) 10 October 2013; paragraphs [0018], [0283]-[0284]	9
Υ .	DE 10,064,800 A1 (BASF AG) 27 June 2002; claim 1; fourteenth paragraph	11
Υ .	(KOBO PRODUCTS, INC.) Microspheres. Technical Literature ref MSp-004. 2012. [Retrieved from the Internet 23.04.2015]. [Retrieved from: <url: 20121126085153="" downloads="" http:="" https:="" kobo-microspheres.pdf="" web="" web.archive.org="" www.koboproductsinc.com="">]; first page, third paragraph; second page.</url:>	19-20
Y	(FLORATECH) Emollients Formulation Guide. 2007; [Retrieved from the Internet 23.04.2015]. [Retrieved from: <url: 2007_emollientsbrochure.pdf="" http:="" pdfs="" uploads="" www.floratech.com="">]; table 1; page 9, second column</url:>	19-20

\boxtimes	Furthe	r documents are listed in the continuation of Box C.		See patent family annex.
*	Special	categories of cited documents:	"T"	later document published after the international filing date or priority
"A"		nt defining the general state of the art which is not considered particular relevance		date and not in conflict with the application but cited to understand the principle or theory underlying the invention
"E"	earlier a	pplication or patent but published on or after the international ate	"X"	document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive
"L"	docume	nt which may throw doubts on priority claim(s) or which is		step when the document is taken alone
	cited to special i	establish the publication date of another citation or other reason (as specified)	"Y"	document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is
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"P"		nt published prior to the international filing date but later than rity date claimed	"&"	document member of the same patent family
Date	of the a	octual completion of the international search	Date	of mailing of the international search report
29 Ap	pril 2015	5 (29.04.2015)	2	7 MAY 2015
Name	e and m	ailing address of the ISA/	Auth	orized officer
		T, Attn: ISA/US, Commissioner for Patents io, Alexandria, Virginia 22313-1450		Shane Thomas
Facsimile No. 571-273-8300		PCT Helpdesk: 571-272-4300 PCT OSP: 571-272-7774		

INTERNATIONAL SEARCH REPORT

International application No.
PCT/US15/17654

Cataca	Citation of document with indication whose appropriate of the relevant account	Relevant to claim No
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to Claim No
`	US 2012/0263768 A1 (MARION, C) 18 October 2012; entire document	1, 15, 19
`	US 2007/0059263 A1 (TANIGUCHI, T et al.) 15 March 2007; entire document	1, 15, 19
`	US 2008/0152679 A1 (BROWN, SE) 26 June 2008; entire document	1, 15; 19
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