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(54) Title: FRAGRANCE PRIMER COMPOSITION

(57) Abstract: Suggested is a fragrance primer composition comprising or consisting of: (a) at least one fragrance primer selected from the group consisting of (a1) alpha, omega alkane diols and/or (a2) fatty acid alkyl esters, and (b) a cosmetically acceptable carrier.



5 FRAGRANCE PRIMER COMPOSITION

FIELD OF INVENTION

10 [0001] The present invention belongs to the area of cosmetics and refers to new compositions capable of enhancing the lasting of fragrances on human skin and hair.

STATE OF THE ART

[0002] There is an ongoing need in the fragrance industry to increase the substantivity of fragrance composition and increase the longevity of the fragrances for consumers.

15 [0003] The biggest challenge of perfumery is the lack of the prediction. The explanations are always found after the facts. Traditionally, scents are classified as notes based on their olfactory character. Top notes are detected and fade first, providing freshness, such as light scents that are usually citrus or wet greens lasting five to thirty minutes. Middle notes last sometimes a few hours and are the most prominent within the fragrances, usually combinations of floral, spicy, or fruit scents. Base notes give a perfume depth, last the longest, and
20 are generally musky or woody notes. The classification of top, middle, and base notes designed to give a particular harmony is presently being challenged with a more exact approach.

[0004] It has been previously disclosed in the art to increase substantivity by including silicones into the base of a perfume product. For example **US 5,623,017** (DOW CORNING) discloses a clear silicone gel which is used to improve the characteristics of various cosmetic products.

[0005] One such cosmetic product is disclosed in **U.S. 5,919,437** (COLGATE) which utilizes a combination of the silicone gel material with an active ingredient such as deodorant, anti-perspirant, sunscreen, insect repellent or anti-fungal agent. **U.S. 5,654,362** (DOW CORNING)
30 discloses a silicone oil and solvent composition for use in cosmetics.

[0006] Beside adding certain functional auxiliary agents to a fragrance composition another approach is using a primer. A cosmetic primer is a cream, lotion or spray applied before another cosmetic to improve coverage and lengthen the amount of time the cosmetic lasts on
35 the face.

[0007] For example **US 2009 0176690 A1** (IFF) suggests a fragrance primer composition comprising fragrance material and carrier selected from the group consisting of a silicone base, a hydro-alcoholic base and mixtures thereof wherein the fragrance material comprises up to 50% of a fruity material, up to 90% of a floral material, up to 50% of a marine/aldehydic/ozonic material, up to 50% of an animalic leathery material, up to 90% of a
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musky material, up to 90% of a woody material, up to 90% of a sweet ambery material, up to 90% of a citrus material, up to 50% of a green material, up to 50% of a spicy material and up to 50% of a herbaceous material.

[0008] US 2014 0127335 A1 (CONCRETE & CANVAS) claims another fragrance primer composition comprising an astringent, a humectant, a film former, a solvent, a vitamin, and at least three botanical products.

[0009] However, fragrance compositions in general and primer compositions in particular which are known from the state of the art do not match with the needs of the market. In particular, improvement of lastening is strongly dependent on the nature of the fragrance composition or the sex of the individual using the fragrance. In other cases the lastening effect is weak and/or the primers provide an unpleasant sticky or greasy feeling to skin and hair. There also examples that the primers may cause irritations to sensitive skin.

[0010] Therefore, the object of the present invention has been providing a new and improved primer composition that shows superior performance compared to the products according to the state of the art. The primers should provide an improved lastening effect no matter what type of fragrance is applied and whether the fragrance is used by males or females. Finally the primer should form a dry film on skin and hair and avoid any sticky or greasy feeling.

DESCRIPTION OF THE INVENTION

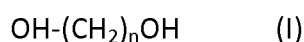
[0011] Object of the present invention is a fragrance primer composition comprising or consisting of:

- (a) at least one fragrance primer selected from the group consisting of
 - (a1) alpha, omega alkane diols and/or
 - (a2) fatty acid alkyl esters, and
- (b) a cosmetically acceptable carrier.

[0012] Surprisingly, it has been observed that mixtures of alpha, omega diols and fatty acid alkyl esters exhibit extraordinary film forming properties, creating a natural barrier between the fragrance and human skin or hair. By virtue of this barrier the amount of absorption is significantly reduced, thus more fragrance is allowed to stay on the surface. In other words, the fragrance lies on the top of the primer film, assuring a long-lasting of the fragrance. Another advantage of the composition is their excellent dermatological compatibility which prevents also sensitive skin from irritations caused by certain fragrance ingredients.

[0013] ALPHA, OMEGA DIOLS

[0014] Alpha, omega alkane diols forming component (a1) represent well known cosmetic materials which follow general formula (I),



in which n stands for an integer of from 4 to 10 and preferably from 5 to 8. Examples for suitable diols are 1,4-butandiol, 1,6-hexandiol, 1,7-heptandiol and 1,8-octandiol. For performance reasons, the preferred diol is 1,5-pentandiol, which also called 1,5-pentylene glycol and available in the market under the trademark Hydrolyte 5 (SYMRISE).

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[0015] FATTY ACID ALKYL ESTERS

Fatty acid alkyl esters forming component (a2) follow general formula (II),



10 in which R^1 represents a linear or branched, saturated or unsaturated acyl radical having 0 or 1 to 3 double bonds and 6 to 22 carbon atoms and R^2 stands for a linear or branched alkyl radical having 6 to 22 carbon atoms. For performance reasons the preferred fatty acid alkyl esters follow general formula (II) in which

- R^1CO represents a saturated linear or branched acyl radical having 6 to 12 carbon atoms, and/or
- 15 • R^2 stands for a linear alkyl radical having 12 to 18 carbon atoms.

[0016] Suitable examples encompass

- esters of hexanoic (capronic) acid with lauryl alcohol, myristyl alcohol, cetyl alcohol, stearyl alcohol, cetearyl alcohol and technical grade mixtures of said alcohols;
- 20 • esters of octanoic (caprylic) acid with lauryl alcohol, myristyl alcohol, cetyl alcohol, stearyl alcohol, cetearyl alcohol and technical grade mixtures of said alcohols;
- esters of 2-ethyl hexanoic acid with lauryl alcohol, myristyl alcohol, cetyl alcohol, stearyl alcohol, cetearyl alcohol and technical grade mixtures of said alcohols;
- esters of nonanoic acid with lauryl alcohol, myristyl alcohol, cetyl alcohol, stearyl alcohol, cetearyl alcohol and technical grade mixtures of said alcohols;
- 25 • esters of decanoic (caprinic) acid with lauryl alcohol, myristyl alcohol, cetyl alcohol, stearyl alcohol, cetearyl alcohol and technical grade mixtures of said alcohols;
- esters of dodecanoic (lauric) acid with lauryl alcohol, myristyl alcohol, cetyl alcohol, stearyl alcohol, cetearyl alcohol and technical grade mixtures of said alcohols.

30 [0017] Preferably, the compositions comprise at least one linear fatty acid alkyl ester and at least one branched fatty acid alkyl ester. More preferred are compositions comprising either cetearyl nonanoate or cetearyl ethylhexanoate or a mixture of cetearyl nonanoate and cetearyl ethylhexanoate, for example in a ratio by weight of about 90 to about 10 and particularly of about 40 : 60 to 60 : 40.

35 [0018] CARRIERS

[0019] Suitable cosmetically acceptable carriers are selected from the group consisting of water, ethanol, ethylene glycol, diethylene glycol, propylene glycol, dipropylene glycol, butylene glycol, dibutylene glycol and glycerol.

[0020] ADDITIVES

[0021] The compositions according to the present invention may comprise further additives as for example oil bodies, emulsifiers, thickeners, polymers and mixtures thereof.

5 **[0022] Oil bodies**

[0023] Suitable oil bodies, which form constituents of the O/W emulsions, are, for example, Guerbet alcohols based on fatty alcohols having 6 to 18, preferably 8 to 10, carbon atoms, esters of linear C₆-C₂₂-fatty acids with linear or branched C₆-C₂₂-fatty alcohols or esters of branched C₆-C₁₃-carboxylic acids with linear or branched C₆-C₂₂-fatty alcohols, such as, for
 10 example, myristyl myristate, myristyl palmitate, myristyl stearate, myristyl isostearate, myristyl oleate, myristyl behenate, myristyl erucate, cetyl myristate, cetyl palmitate, cetyl stearate, cetyl isostearate, cetyl oleate, cetyl behenate, cetyl erucate, stearyl myristate, stearyl palmitate, stearyl stearate, stearyl isostearate, stearyl oleate, stearyl behenate, stearyl erucate, isostearyl myristate, isostearyl palmitate, isostearyl stearate, isostearyl isostearate,
 15 isostearyl oleate, isostearyl behenate, isostearyl oleate, oleyl myristate, oleyl palmitate, oleyl stearate, oleyl isostearate, oleyl oleate, oleyl behenate, oleyl erucate, behenyl myristate, behenyl palmitate, behenyl stearate, behenyl isostearate, behenyl oleate, behenyl behenate, behenyl erucate, erucyl myristate, erucyl palmitate, erucyl stearate, erucyl isostearate, erucyl oleate, erucyl behenate and erucyl erucate. Also suitable are esters of
 20 linear C₆-C₂₂-fatty acids with branched alcohols, in particular 2-ethylhexanol, esters of C₁₈-C₃₈-alkylhydroxy carboxylic acids with linear or branched C₆-C₂₂-fatty alcohols, in particular Dioctyl Malate, esters of linear and/or branched fatty acids with polyhydric alcohols (such as, for example, propylene glycol, dimerdiol or trimetriol) and/or Guerbet alcohols, triglycerides based on C₆-C₁₀-fatty acids, liquid mono-/di-/triglyceride mixtures based on C₆-C₁₈-
 25 fatty acids, esters of C₆-C₂₂-fatty alcohols and/or Guerbet alcohols with aromatic carboxylic acids, in particular benzoic acid, esters of C₂-C₁₂-dicarboxylic acids with linear or branched alcohols having 1 to 22 carbon atoms or polyols having 2 to 10 carbon atoms and 2 to 6 hydroxyl groups, vegetable oils, branched primary alcohols, substituted cyclohexanes, linear and branched C₆-C₂₂-fatty alcohol carbonates, such as, for example, Dicaprylyl Carbonate (Cetiol® CC), Guerbet carbonates, based on fatty alcohols having 6 to 18, preferably 8 to 10,
 30 carbon atoms, esters of benzoic acid with linear and/or branched C₆-C₂₂-alcohols (e.g. Finsolv® TN), linear or branched, symmetrical or asymmetrical dialkyl ethers having 6 to 22 carbon atoms per alkyl group, such as, for example, dicaprylyl ether (Cetiol® OE), ring-opening products of epoxidized fatty acid esters with polyols, silicone oils (cyclomethicones, silicone methicone grades, etc.) and/or aliphatic or naphthenic hydrocarbons, such as, for example,
 35 squalane, squalene or dialkylcyclohexanes.

[0024] Emulsifiers

[0025] Other surfactants may also be added to the preparations as emulsifiers, including for
 40 example:

- products of the addition of 2 to 30 mol ethylene oxide and/or 0 to 5 mol propylene oxide onto linear C₈₋₂₂ fatty alcohols, onto C₁₂₋₂₂ fatty acids and onto alkyl phenols containing 8 to 15 carbon atoms in the alkyl group;

- $C_{12/18}$ fatty acid monoesters and diesters of addition products of 1 to 30 mol ethylene oxide onto glycerol;
- glycerol mono- and diesters and sorbitan mono- and diesters of saturated and unsaturated fatty acids containing 6 to 22 carbon atoms and ethylene oxide addition products thereof;
- addition products of 15 to 60 mol ethylene oxide onto castor oil and/or hydrogenated castor oil;
- polyol esters and, in particular, polyglycerol esters such as, for example, polyglycerol polyricinoleate, polyglycerol poly-12-hydroxystearate or polyglycerol dimerate isosteate. Mixtures of compounds from several of these classes are also suitable;
- addition products of 2 to 15 mol ethylene oxide onto castor oil and/or hydrogenated castor oil;
- partial esters based on linear, branched, unsaturated or saturated $C_{6/22}$ fatty acids, ricinoleic acid and 12-hydroxystearic acid and glycerol, polyglycerol, pentaerythritol, -dipentaerythritol, sugar alcohols (for example sorbitol), alkyl glucosides (for example methyl glucoside, butyl glucoside, lauryl glucoside) and polyglucosides (for example cellulose);
- mono-, di and trialkyl phosphates and mono-, di- and/or tri-PEG-alkyl phosphates and salts thereof;
- wool wax alcohols;
- polysiloxane/polyalkyl polyether copolymers and corresponding derivatives;
- mixed esters of pentaerythritol, fatty acids, citric acid and fatty alcohol and/or mixed esters of C_{6-22} fatty acids, methyl glucose and polyols, preferably glycerol or polyglycerol,
- polyalkylene glycols and
- glycerol carbonate.

[0026] The addition products of ethylene oxide and/or propylene oxide onto fatty alcohols, fatty acids, alkylphenols, glycerol mono- and diesters and sorbitan mono- and diesters of fatty acids or onto castor oil are known commercially available products. They are homologue mixtures of which the average degree of alkoxylation corresponds to the ratio between the quantities of ethylene oxide and/or propylene oxide and substrate with which the addition reaction is carried out. $C_{12/18}$ fatty acid monoesters and diesters of addition products of ethylene oxide onto glycerol are known as lipid layer enhancers for cosmetic formulations. The preferred emulsifiers are described in more detail as follows:

[0027] Partial glycerides. Typical examples of suitable partial glycerides are hydroxystearic acid monoglyceride, hydroxystearic acid diglyceride, isostearic acid monoglyceride, isostearic acid diglyceride, oleic acid monoglyceride, oleic acid diglyceride, ricinoleic acid monoglyceride, ricinoleic acid diglyceride, linoleic acid monoglyceride, linoleic acid diglyceride, linolenic acid monoglyceride, linolenic acid diglyceride, erucic acid monoglyceride, erucic acid diglyceride, tartaric acid monoglyceride, tartaric acid diglyceride, citric acid monoglyceride, citric acid diglyceride, malic acid monoglyceride, malic acid diglyceride and technical

mixtures thereof which may still contain small quantities of triglyceride from the production process. Addition products of 1 to 30 and preferably 5 to 10 mol ethylene oxide onto the partial glycerides mentioned are also suitable.

[0028] Sorbitan esters. Suitable sorbitan esters are sorbitan monoisostearate, sorbitan sesquiosostearate, sorbitan diisostearate, sorbitan triisostearate, sorbitan monooleate, sorbitan sesquioleate, sorbitan dioleate, sorbitan trioleate, sorbitan monoerucate, sorbitan sesquierucate, sorbitan dierucate, sorbitan trierucate, sorbitan monoricinoleate, sorbitan sesquiricinoleate, sorbitan diricinoleate, sorbitan triricinoleate, sorbitan monohydroxystearate, sorbitan sesquihydroxystearate, sorbitan dihydroxystearate, sorbitan trihydroxystearate, sorbitan monotartrate, sorbitan sesquitartrate, sorbitan ditartrate, sorbitan tritartrate, sorbitan monocitrate, sorbitan sesquicitrate, sorbitan dicitrate, sorbitan tricitrate, sorbitan monomaleate, sorbitan sesquimaleate, sorbitan dimaleate, sorbitan trimaleate and technical mixtures thereof. Addition products of 1 to 30 and preferably 5 to 10 mol ethylene oxide onto the sorbitan esters mentioned are also suitable.

[0029] Polyglycerol esters. Typical examples of suitable polyglycerol esters are Polyglyceryl-2 Dipolyhydroxystearate (Dehymuls[®] PGPH), Polyglycerin-3-Diisostearate (Lameform[®] TGI), Polyglyceryl-4 Isostearate (Isolan[®] GI 34), Polyglyceryl-3 Oleate, Diisostearoyl Polyglyceryl-3 Diisostearate (Isolan[®] PDI), Polyglyceryl-3 Methylglucose Distearate (Tego Care[®] 450), Polyglyceryl-3 Beeswax (Cera Bellina[®]), Polyglyceryl-4 Caprate (Polyglycerol Caprate T2010/90), Polyglyceryl-3 Cetyl Ether (Chimexane[®] NL), Polyglyceryl-3 Distearate (Cremophor[®] GS 32) and Polyglyceryl Polyricinoleate (Admul[®] WOL 1403), Polyglyceryl Dimerate Isostearate and mixtures thereof. Examples of other suitable polyolesters are the mono-, di- and triesters of trimethylol propane or pentaerythritol with lauric acid, cocofatty acid, tallow fatty acid, palmitic acid, stearic acid, oleic acid, behenic acid and the like optionally reacted with 1 to 30 mol ethylene oxide.

[0030] Anionic emulsifiers. Typical anionic emulsifiers are aliphatic C₁₂₋₂₂ fatty acids, such as palmitic acid, stearic acid or behenic acid for example, and C₁₂₋₂₂ dicarboxylic acids, such as azelaic acid or sebacic acid for example.

[0031] Amphoteric emulsifiers. Other suitable emulsifiers are amphboteric or zwitterionic surfactants. Zwitterionic surfactants are surface-active compounds which contain at least one quaternary ammonium group and at least one carboxylate and one sulfonate group in the molecule. Particularly suitable zwitterionic surfactants are the so-called betaines, such as the N-alkyl-N,N-dimethyl ammonium glycinate, for example cocoalkyl dimethyl ammonium glycinate, N-acylaminopropyl-N,N-dimethyl ammonium glycinate, for example cocoacylaminopropyl dimethyl ammonium glycinate, and 2-alkyl-3-carboxymethyl-3-hydroxyethyl imidazolines containing 8 to 18 carbon atoms in the alkyl or acyl group and cocoacylaminoethyl hydroxyethyl carboxymethyl glycinate. The fatty acid amide derivative known under the CTFA name of *Cocamidopropyl Betaine* is particularly preferred. Ampholytic surfactants are also suitable emulsifiers. Ampholytic surfactants are surface-active compounds which, in addition to a C_{8/18} alkyl or acyl group, contain at least one free amino group and at least one -COOH- or -SO₃H- group in the molecule and which are capable of forming inner salts. Examples of suitable ampholytic surfactants are N-alkyl glycines, N-alkyl propionic acids, N-alkylaminobutyric acids, N-alkyliminodipropionic acids, N-hydroxyethyl-N-alkylamidopropyl glycines, N-alkyl taurines, N-alkyl sarcosines, 2-alkylaminopropionic acids and alkylaminoacetic acids containing around 8 to 18 carbon atoms in the alkyl group. Par-

particularly preferred ampholytic surfactants are N-cocoalkylaminopropionate, cocoacylaminoethyl aminopropionate and C_{12/18} acyl sarcosine.

[0032] Thickening agents

5 **[0033]** Suitable thickeners are polymeric thickeners, such as Aerosil® types (hydrophilic silicas), polysaccharides, more especially xanthan gum, guar-guar, agar-agar, alginates and tyloses, carboxymethyl cellulose and hydroxyethyl cellulose, also relatively high molecular weight polyethylene glycol monoesters and diesters of fatty acids, polyacrylates (for example Carbopols® [Goodrich] or Synthalens® [Sigma]), polyacrylamides, polyvinyl alcohol and
10 polyvinyl pyrrolidone, surfactants such as, for example, ethoxylated fatty acid glycerides, esters of fatty acids with polyols, for example pentaerythritol or trimethylol propane, narrow-range fatty alcohol ethoxylates and electrolytes, such as sodium chloride and ammonium chloride.

15 [0034] Polymers

[0035] Suitable cationic polymers are, for example, cationic cellulose derivatives such as, for example, the quaternized hydroxyethyl cellulose obtainable from Amerchol under the name of Polymer JR 400®, cationic starch, copolymers of diallyl ammonium salts and acrylamides, quaternized vinyl pyrrolidone/vinyl imidazole polymers such as, for example, Luviquat®
20 (BASF), condensation products of polyglycols and amines, quaternized collagen polypeptides such as, for example, Lauryldimonium Hydroxypropyl Hydrolyzed Collagen (Lamequat® L, Grünau), quaternized wheat polypeptides, polyethyleneimine, cationic silicone polymers such as, for example, amodimethicone, copolymers of adipic acid and dimethylaminohydroxypropyl diethylenetriamine (Cartaretine®, Sandoz), copolymers of acrylic acid with dimethyl diallyl ammonium chloride (Merquat® 550, Chemviro), polyaminopolyamides and crosslinked water-soluble polymers thereof, cationic chitin derivatives such as, for example, quaternized chitosan, optionally in microcrystalline distribution, condensation products of dihaloalkyls, for example dibromobutane, with bis-dialkylamines, for example bis-dimethylamino-1,3-propane, cationic guar gum such as, for example, Jaguar CBS, Jaguar C-17, Jaguar C-16 of Celanese, quaternized ammonium salt polymers such as, for example,
30 Mirapol® A-15, Mirapol® AD-1, Mirapol® AZ-1 of Miranol and the various polyquaternium types (for example 6, 7, 32 or 37) which can be found in the market under the tradenames Rheocare® CC or Ultragel® 300.

[0036] Suitable anionic, zwitterionic, amphoteric and nonionic polymers are, for example,
35 vinyl acetate/crotonic acid copolymers, vinyl pyrrolidone/vinyl acrylate copolymers, vinyl acetate/butyl maleate/isobornyl acrylate copolymers, methyl vinylether/maleic anhydride copolymers and esters thereof, uncrosslinked and polyol-crosslinked polyacrylic acids, acrylamidopropyl trimethylammonium chloride/acrylate copolymers, octylacrylamide/methyl methacrylate/tert.-butylaminoethyl methacrylate/2-hydroxypropyl methacrylate copolymers, polyvinyl pyrrolidone, vinyl pyrrolidone/vinyl acetate copolymers, vinyl pyrrolidone/dimethylaminoethyl methacrylate/vinyl caprolactam terpolymers and optionally derivatized cellulose ethers and silicones.
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[0037] COMPOSITIONS

[0038] In a preferred embodiment the compositions of the present invention comprise

- (a1) about 0.5 to about 5 % b.w., preferably about 1 to about 4 % b.w. and even more preferred about 2 to about 3 % b.w. alpha, omega alkane diols;
 - (a2) about 0.5 to about 10 % b.w., preferably about 1 to about 8 % b.w. and even more preferred about 2 to about 5 % b.w. fatty acid alkyl esters;
 - (b) about 85 to about 99 % b.w., preferably about 88 to about 92 % b.w. b.w. carriers; and
 - (c) 0 to about 10 % and preferably about 1 to about 5 % b.w. additives
- on condition that the amounts add to 100 % b.w.

[0039] FRAGRANCES

[0040] The nature of the fragrance which is applied to human skin or hair once the primer has been applied is not critical for the present invention. The technical teaching works for all kind of fragrances, independent if they are dedicated for males or females. Typical examples encompass:

[0041] Natural perfumes

[0042] Natural perfumes include the extracts of blossoms (lily, lavender, rose, jasmine, neroli, ylang-ylang), stems and leaves (geranium, patchouli, petitgrain), fruits (anise, coriander, caraway, juniper), fruit peel (bergamot, lemon, orange), roots (nutmeg, angelica, celery, cardamom, costus, iris, calmus), woods (pinewood, sandalwood, guaiac wood, cedarwood, rosewood), herbs and grasses (tarragon, lemon grass, sage, thyme), needles and branches (spruce, fir, pine, dwarf pine), resins and balsams (galbanum, elemi, benzoin, myrrh, olibanum, opoponax). Animal raw materials, for example civet and beaver, may also be used.

[0043] Synthetic fragrances

[0044] Typically, the synthetic fragrances represent aldehydes, ketones, alcohols, ethers, esters, hydrocarbons their mixtures. In the following these types of fragrances are illustrated but not limited by examples:

[0045] Aldehydes. Examples for suitable fragrances showing an aldehyde structure encompass melonal, triplal, ligustral, adoxal, anisaldehyde, cymal, ethylvanillin, florhydral, florazon, helional, heliotropin, hydroxycitronellal, koavon, lauraldehyde, canthoxal, lyral, lilial, adoxal, anisaldehyde, cumal, methyl-nonyl-acetaldehyde, citronellal, citronellyloxy-acetaldehyde, cyclamenaldehyde, bourgeonal, p-tert.-bucinal, phenylacetaldehyde, undecylenaldehyde, vanillin; 2,6,10-trimethyl-9-undecenal, 3-dodecen-1-al, α -n-Amylzimtaldehyde, 4-methoxy-benz-aldehyde, benzaldehyde, 3-(4-tert-butylphenyl)-propanal, 2-methyl-3-(para-methoxy-phenyl)propanal, 2-methyl-4-(2,6,6-trimethyl-2(1)-cyclohexen-1-yl)butanal, 3-phenyl-2-pro-penal, cis-/trans-3,7-dimethyl-2,6-octadien-1-al, 3,7-dimethyl-6-octen-1-al, [(3,7-dimethyl-6-octenyl)-xy]-cetaldehyde, 4-isopropylbenzaldehyde, 1,2,3,4,5,6,7,8-octahydro-8,8-dimethyl-2-naphthaldehyde, 2,4-dimethyl-3-cyclohexen-1-

carboxyaldehyde, 2-methyl-3-(isopropyl-phenyl)propanal, decyl aldehyde, 2,6-dimethyl-5-heptenal; 4-(tricyclo[5.2.1.0 (2,6)]-decylidene-8)-butanal; octahydro-4,7-methano-1H-indenecarboxaldehyde; 3-ethoxy-4-hydroxybenzaldehyde, para-ethyl-alpha,alpha-dimethylhydrozimtaldehyde, α -methyl-3,4-(methylenedioxy)-hydrocinnamaldehyde, 3,4-methylenedioxybenzaldehyde, α -n-hexyl-cinnamaldehyde, m-cymene-7-carboxaldehyde, α -methylphenylacetaldehyde, 7-hydroxy-3,7-dimethyl octanal, undecenal, 2,4,6-trimethyl-3-cyclohexene-1-carboxaldehyde, 4-(3)-(4-methyl-3-pentenyl)-3-cyclohexen-carboxaldehyde, 1-dodecanal, 2,4-dimethyl-cyclohexene-3-carboxaldehyde, 4-(4-hydroxy-4-methylpentyl)-3-cyclohexene-1-carboxaldehyde, 7-methoxy-3,7-dimethyloctan-1-al, 2-methyl undecanal, 2-methyl decanal, 1-nonanal, 1-octanal, 2,6,10-trimethyl-5,9-undecadienal, 2-methyl-3-(4-tertbutyl)propanal, 3-(4-ethylphenyl)-2,2-dimethylpropanal, 3-(4-methoxyphenyl)-2-methylpropanal, methylno-nylacetaldehyde, 2-phenylpropan-1-al, 3-phenylprop-2-en-1-al, 3-phenyl-2-pentylprop-2-en-1-al, 3-phenyl-2-hexylprop-2-enal, 3-(4-isopropylphenyl)-2-methylpropan-1-al, 3-(4-ethylphenyl)-2,2-dimethylpropan-1-al, 3-(4-tert-butylphenyl)-2-methyl-propanal, 3-(3,4-Methylenedioxy-phenyl)-2-methylpropan-1-al, 3-(4-Ethylphenyl)-2,2-dimethylpropanal, 3-(3-Isopropylphenyl)-butan-1-al, 2,6-Dimethylhept-5-en-1-al, Dihydrozimtaldehyde, 1-methyl-4-(4-methyl-3-pentenyl)-3-cyclohexene-1-carboxaldehyde, 5- or 6-Methoxyhexahydro-4,7-methanoindan-1 or 2-carboxyaldehyde, 3,7-dimethyloctan-1-al, 1-undecanal, 10-undecen-1-al, 4-hydroxy-3-methoxybenzaldehyde, 1-methyl-3-(4-methylpentyl)-3-cyclohexene-carboxyaldehyde, 7-hydroxy-3,7-dimethyloctanal; trans-4-decenal, 2,6-nonadienal, p-tolylacetaldehyde; 4-methylphenylacetaldehyde, 2-methyl-4-(2,6,6-trimethyl-1-cyclohexen-1-yl)-2-butenal, o-methoxyzimtaldehyde, 3,5,6-trimethyl-3-cyclohexenecarboxaldehyde, 3,7-dimethyl-2-methylene-6-octenal, phenoxyacetaldehyde; 5,9-dimethyl-4,8-decadienal, peony aldehyde (6,10-dimethyl-3-oxa-5,9-undecadien-1-al), hexahydro-4,7-methanoindan-1-carboxaldehyde, octanal, 2-methyl octanal, alpha-methyl-4-(1-methylethyl)benzene-acetaldehyde, 6,6-dimethyl-2-norpinene-2-propionaldehyde, p-methyl phenoxy acetaldehyde, 2-methyl-3-phenyl-2-propen-1-al, 3,5,5-trimethylhexanal, hexahydro-8,8-dimethyl-2-naphthaldehyde, 3-propyl-bicyclo[2.2.1]-hept-5-ene-2-carbaldehyde, 9-decenal, 3-methyl-5-phenyl-1-pentanal, methylnonyl acetaldehyde, 1-p-menthene-q-carboxaldehyde, citral or its mixtures, lilial citral, 1-decanal, n-undecanal, n-dodecanal, hlorhydal, 2,4-dimethyl-3-cyclohexen-1-carboxaldehyde 4-methoxybenzaldehyde, 3-methoxy-4-hydroxy-benzaldehyde, 3-ethoxy-4-hydroxybenzaldehyde, 3,4-methylenedioxybenzaldehyde, 3,4-dimethoxybenzaldehyde and their mixtures.

[0046] As explained above, said ketones or said aldehydes may show an aliphatic, cycloaliphatic, aromatic, ethylenically unsaturated structure or a mixture of these elements. The components may also include heteroatoms or show a polycyclic structure. Suitable substituents for all these structures are hydroxyl and/or amino groups. Further fragrances are compiled in the following document: *Steffen Arctander* „Published 1960 and 1969 respectively, Reprinted 2000 ISBN: Aroma Chemicals Vol. 1: 0-931710-37-5, Aroma Chemicals Vol. 2: 0-931710-38-3“, which is hereby incorporated by reference.

[0047] Ketones. Examples for suitable fragrances showing a ketone structure encompass buccoxime, iso jasmone, methyl beta naphthyl ketone, moschus indanone, tonalid/moschus plus, α -damascone, β -damascon, δ -damascone, Iso-damascone, damascenone, damarose, methyl-dihydrojasmonate, menthone, carvone, campher, fenchone, alphasolone, β -ionone,

dihydro- β -ionone, γ -methylionone, fleuramone, dihydrojasmonone, cis-Jasmon, iso-E-Super, methyl cedrenyl ketone, or methyl cedrylone, acetophenone, methyl acetophenone, p-methoxyacetophenone, methyl- β -naphthyl ketone, benzylacetone, benzophenone, p-hydroxyphenylbutanone, celery Ketone or livescon, 6-isopropyl-deca-hydro-2-naphthone, dimethyloctenone, freskomenth, 4-(1-ethoxyvinyl)-3,3,5,5-tetramethyl cyclohexanone, methylheptenone, 2-(2-(4-Methyl-3-cyclohexen-1-yl)propyl)-cyclopentanone, 1-(p-menthene-6(2)-yl)-1-propanone, 4-(4-Hydroxy-3-methoxyphenyl)-2-butanone, 2-Acetyl-3,3-dimethyl-norbornan, 6,7-dihydro-1,1,2,3,3-pentamethyl-4(5H)-indanone, 4-damascol, dulcinyll or cassione, gelsone, hexalone, isocyclemone E, Methylcyclocitronone, methyl lavender ketone, orivone, p-tert-butyl cyclohexanone, verdone, delphone, muscone, neobutenone, plicatone, veloutone, 2,4,4,7-tetramethyl-oct-6-en-3-one, tetrameran, hedion and their mixtures. The preferred ketones are selected from the group comprising α -damascone, δ -damascone, iso-damascone, carvone, γ -methyl ionone, Iso-E-Super, 2,4,4,7-tetramethyl-oct-6-en-3-one, benzylacetone, β -damascone, damascenone, methyl dihydrojasmonate, methyl cedrylone, hedione and their mixtures

[0048] Alcohols. Suitable fragrance alcohols encompass for example 10-undecen-1-ol, 2,6-dimethylheptan-2-ol, 2-methylbutanol, 2-methylpentanol, 2-phenoxyethanol, 2-phenylpropanol, 2-tert-Butylcyclohexanol, 3,5,5-trimethylcyclohexanol, 3-hexanol, 3-methyl-5-phenylpentanol, 3-octanol, 1-octen-3-ol, 3-phenylpropanol, 4-heptenol, 4-isopropylcyclohexanol, 4-tert-butylcyclohexanol, 6,8-dimethyl-2-nonanol, 6-nonen-1-ol, 9-decen-1-ol, α -methyl benzylalcohol, α -terpineol, amylsalicylate, benzyl alcohol, benzyl salicylate, β -terpineol, butyl salicylate, citronellol, cyclohexyl salicylate, decanol, dihydromyrcenol, dimethyl benzylcarbinol, dimethyl heptanol, dimethyl octanol, ethyl salicylate, ethyl vanillin, anethol, eugenol, geraniol, heptanol, hexyl salicylate, isoborneol, isoeugenol, isopulegol, linalool, menthol, myrtenol, n-hexanol, nerol, nonanol, octanol, para-menthan-7-ol, phenylethylalcohol, phenol, phenyl salicylate, tetrahydro geraniol, tetrahydro linalool, thymol, trans-2-cis-6-nonadienol, trans-2-nonen-1-ol, trans-2-octenol, undecanol, vanillin, cinnamyl alcohol and their mixtures.

[0049] Esters. Examples for suitable fragrances showing a ketone structure encompass benzyl acetate, phenoxyisobutyrate, p-tert.-butylcyclohexylacetate, linalylacetate, dimethylbenzylcarbinylacetate (DMBCA), phenylethylacetate, benzylacetate, ethylmethylphenylglycidate, allylcyclohexylpropionate, styrylpropionate, benzylsalicylate, cyclohexylsalicylate, floramat, melusat, jasmacyclate and their mixtures.

[0050] Ethers. Examples for suitable fragrances showing a ketone structure encompass benzylethyl ether or ambroxan.

[0051] Hydrocarbons.

[0052] Examples for suitable fragrances representing hydrocarbons encompass terpenes, e.g. limonen and pinen.

INDUSTRIAL APPLICABILITY

[0053] Another object of the present invention is directed towards a method for enhancing lastening of fragrances on human skin or hair encompassing the following steps:

- (i) providing the fragrance primer composition of Claim 1;
- 5 (ii) applying said composition to the part of human skin and/or hair to which the application of the fragrance is desired in an amount suitable to cover said region or regions with a film;
- (iii) applying the fragrance to the same area skin and/or hair.

10 **[0054]** In a preferred embodiment the skin and/or hair region to which said primer composition is applied is allowed to dry for about 5 to about 10 minutes before the fragrance is applied.

[0055] Finally, another object of the present invention refers to the use of any the components forming group (a1) or (a2) or their mixtures as fragrance primers to enhance lasting of fragrances on human skin and/or hair.

15

EXAMPLES

[0056] METHODOLOGY

5 [0057] The aim of the present studies has been identifying compositions capable of enhancing the lasting of fragrances on the skin. For this purpose primer compositions were applied separately to the skin in amounts sufficient to cover the area where the fragrance was applied 10 minutes later.

10 [0058] The substantivity test was conducted by a panel consisting of 12 experienced perfumers. First evaluation took place either after 6 or 7 hours and the second evaluation after 8 or 9 hours respectively, depending whether the fragrance was an eau de toilette or an eau de parfum. The results represent average values from all panelists and have the following meanings:

- | | | |
|----|---|-------------------|
| | 0 | not perceivable |
| 15 | 1 | extremely weak |
| | 2 | very weak |
| | 3 | weak |
| | 4 | moderate |
| | 5 | strong |
| 20 | 6 | very strong |
| | 7 | deeply strong |
| | 8 | extremely strong. |

[0059] The primer compositions and the performance results are reported in the following examples. All results showed a significance of at least 95 %.

25 [0060] The formulations were prepared according to the following protocol:

1. Add all components of phase A in a beaker and homogenize at a 45 C
2. Prepare a 2 % b.w. solution of methocel in water and add NaOH to neutralize the polymer. Dissolve all components of phase B under agitation in a separate beaker.
3. Add phase C and then phase B to phase and homogenize solution under agitation.

30

[0061] EXAMPLES 1 TO 4, COMPARISON EXAMPLES C1 TO C4**[0062] Table 1A**

Fragrance primer composition 1 (amounts in % b.w.)

Phase	Ingredient	INCI	Amount
A	Ultramona® RH-400	PEG-40 Hydrogenated Castoi Oil	3.5
	Ceteareth-20	Ceteareth-20	3.5
	SymMollient® S	Cetearyl Nonanoate	2.0
	PCL Liquid 100	Cetearyl Ethylhexanoate	2.0
B	Ethanol		ad 100
	Methocel® 40-100	Hydroxypropyl Methylcellulose	0.15
C	Hydrolite® 5	Pentylene Glycol	3.0

[0063] Table 1B

Performance

Ex.	Fragrance	Primer No.	Time [h]	Without primer	With primer
C1	UOMINI BLACKWOOD @ 9 %	1	6	5.3	
1	UOMINI BLACKWOOD @ 9 %	1	6		5.8
C2	UOMINI BLACKWOOD @ 9 %	1	8	4.6	
2	UOMINI BLACKWOOD @ 9 %	1	8		5.3
C3	MAKE B TOPICAL COLOR @ 13 %	1	7	5.2	
3	MAKE B TOPICAL COLOR @ 13 %	1	7		5.9
C4	MAKE B TOPICAL COLOR @ 13 %	1	9	5.0	
4	MAKE B TOPICAL COLOR @ 13 %	1	9		5.5

[0064] EXAMPLES 5 TO 8, COMPARISON EXAMPLES C5 TO C8**[0065] Table 2A**

Fragrance primer composition 2 (amounts in % b.w.)

5

Phase	Ingredient	INCI	Amount
A	Ultramona® RH-400	PEG-40 Hydrogenated Castor Oil	3.0
	Ceteareth-20	Ceteareth-20	3.5
	SymMollient® S	Cetearyl Nonanoate	2.0
B	Ethanol		ad 100
	Methocel® 40-100	Hydroxypropyl Methylcellulose	0.15
C	Hydrolite® 5	Pentylene Glycol	3.0

[0066] Table 2B

Performance

Ex.	Fragrance	Primer No.	Time [h]	Without primer	With primer
C5	UOMINI BLACKWOOD @ 9 %	2	6	5.5	
5	UOMINI BLACKWOOD @ 9 %	2	6		5.7
C6	UOMINI BLACKWOOD @ 9 %	2	8	5.1	
6	UOMINI BLACKWOOD @ 9 %	2	8		5.6
C7	MAKE B TOPICAL COLOR @ 13 %	2	7	4.7	
7	MAKE B TOPICAL COLOR @ 13 %	2	7		5.3
C8	MAKE B TOPICAL COLOR @ 13 %	2	9	4.1	
8	MAKE B TOPICAL COLOR @ 13 %	2	9		4.9

10

[0067] EXAMPLES 9 TO 20, COMPARISON EXAMPLES C9 TO C20**[0068] Table 3A**

Fragrance primer composition 3 (amounts in % b.w.)

5

Phase	Ingredient	INCI	Amount
A	Ultramona® RH-400	PEG-40 Hydrogenated Castor Oil	3.0
	Ceteareth-20	Ceteareth-20	3.0
	SymMollient® S	Cetearyl Nonanoate	2.0
	PCL Liquid 100	Cetearyl Ethylhexanoate	2.0
B	Ethanol		ad 100
	Methocel® 40-100	Hydroxypropyl Methylcellulose	0.15
C	Hydrolite® 5	Pentylene Glycol	2.0

[0069] Table 1B

Performance

Ex.	Fragrance	For male	For female	Primer No.	Time [h]	Without primer	With primer
C9	POTINARI	X		3	0	6.3	
9	POTINARI	X		3	0		6.4
C10	POTINARI	X		3	6	4.7	
10	POTINARI	X		3	6		5.3
C11	POTINARI	X		3	8	4.4	
11	POTINARI	X		3	8		4.8
C12	QUASAR	X		3	0	6.2	
12	QUASAR	X		3	0		6.5
C13	QUASAR	X		3	6	5.4	
13	QUASAR	X		3	6		5.5
C14	QUASAR	X		3	8	4.3	
14	QUASAR	X		3	8		5.3
C15	FLORATTA CEREJEIRA		X	3	0	6.6	
15	FLORATTA CEREJEIRA		X	3	0		6.6
C16	FLORATTA CEREJEIRA		X	3	6	4.7	
16	FLORATTA CEREJEIRA		X	3	6		5.0
C17	FLORATTA CEREJEIRA		X	3	8	4.4	
17	FLORATTA CEREJEIRA		X	3	8		5.0

C18	FLORATTA IN BLUE		X	3	0	6.3	
18	FLORATTA IN BLUE		X	3	0		6.3
C19	FLORATTA IN BLUE		X	3	6	4.7	
19	FLORATTA IN BLUE		X	3	6		5.0
C20	FLORATTA IN BLUE		X	3	8	4.5	
20	FLORATTA IN BLUE		X	3	8		4.9

CLAIMS

1. A fragrance primer composition comprising or consisting of:
 - (a) at least one fragrance primer selected from the group consisting of
 - (a1) alpha, omega alkane diols and/or
 - (a2) fatty acid alkyl esters, and
 - (b) a cosmetically acceptable carrier.
2. The composition of Claim 1, wherein said alpha, omega alkane diols follow general formula (I),

$$\text{OH}-(\text{CH}_2)_n\text{OH} \quad (\text{I})$$

in which n stands for an integer of from 4 to 10.
3. The composition of Claim 2, wherein said alpha, omega alkane diol is 1,5-pentandiol.
4. The composition of Claim 1, wherein said fatty acid alkyl esters follow general formula (II),

$$\text{R}^1\text{CO}-\text{OR}^2 \quad (\text{II})$$

in which R¹ represents a linear or branched, saturated or unsaturated acyl radical having 0 or 1 to 3 double bonds and 6 to 22 carbon atoms and R² stands for a linear or branched alkyl radical having 6 to 22 carbon atoms.
5. The composition of Claim 4, wherein said fatty acid alkyl ester follows general formula (II) in which R¹CO represents a saturated linear or branched acyl radical having 6 to 12 carbon atoms.
6. The composition of Claim 4, wherein said fatty acid alkyl ester follows general formula (II) in which R² stands for a linear alkyl radical having 12 to 18 carbon atoms.
7. The composition of Claim 4 containing at least one linear fatty acid alkyl ester and at least one branched fatty acid alkyl ester.
8. The composition of Claim 4, wherein said fatty acid alkyl ester is either cetearyl nonanoate or cetearyl ethylhexanoate.
9. The composition of Claim 4, wherein said fatty acid alkyl ester is a mixture of cetearyl nonanoate and cetearyl ethylhexanoate.
10. The composition of Claim 1, wherein said cosmetically acceptable carrier is selected from the group consisting of water, ethanol, ethylene glycol, diethylene glycol, propylene glycol, dipropylene glycol, butylene glycol, dibutylene glycol and glycerol.
11. The composition of Claim 1 further comprising additives selected from the group consisting of oil bodies, emulsifiers, thickeners, polymers and mixtures thereof.

12. The composition of Claim 1, comprising
- (a1) about 0.5 to about 5 % b.w. alpha, omega alkane diols;
 - (a2) about 0.5 to about 10 % b.w. fatty acid alkyl esters;
 - (b) about 85 to about 99 % b.w. carriers; and
 - 5 (c) 0 to about 10 % additives
- on condition that the amounts add to 100 % b.w.
13. A method for enhancing lastening of fragrances on human skin or hair encompassing the following steps:
- (i) providing the fragrance primer composition of Claim 1;
 - 10 (ii) applying said composition to the part of human skin and/or hair to which the application of the fragrance is desired in an amount suitable to cover said region or regions with a film;
 - (iii) applying the fragrance to the same area skin and/or hair.
14. The method of Claim 13, wherein the skin and/or hair region to which said primer composition is applied is allowed to dry for about 5 to about 10 minutes before the
- 15 fragrance is applied.
15. Use of any the components forming group (a1) or (a2) or their mixtures as fragrance primers to enhance lasting of fragrances on human skin and/or hair.

INTERNATIONAL SEARCH REPORT

International application No
PCT/EP2016/053885

A. CLASSIFICATION OF SUBJECT MATTER INV. A61K8/34 A61K8/37 A61Q13/00 A61K8/73 ADD.		
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) A61K A61Q		
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, BIOSIS, EMBASE, WPI Data		
C. DOCUMENTS CONSIDERED TO BE RELEVANT		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
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X	US 6 468 513 B1 (MURPHY C SHAWN [US] ET AL) 22 October 2002 (2002-10-22) examples 3,4 -----	1,4-8, 10,11 1-15
Y	WO 03/013447 A2 (DOW CORNING [US]; BUCKINGHAM ANN M [US]; COUREL BENEDICTE [BE]; MALCZE) 20 February 2003 (2003-02-20) page 1, paragraph 1 page 9, paragraph 29 page 20, paragraphs 64,65 page 21; table 1 examples VI,VII -----	1-15
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☒ Further documents are listed in the continuation of Box C. ☒ 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 13 May 2016		Date of mailing of the international search report 27/05/2016
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 Tullberg, Erik

INTERNATIONAL SEARCH REPORT

International application No

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C(Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT		
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Information on patent family members

International application No

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