



(51) International Patent Classification:

A61K 8/31 (2006.01) A61K 8/58 (2006.01)

A61K 8/34 (2006.01) A61K 8/67 (2006.01)

A61K 8/37 (2006.01) A61Q 19/00 (2006.01)

(21) International Application Number:

PCT/EP2018/066641

(22) International Filing Date:

21 June 2018 (21.06.2018)

(25) Filing Language:

English

(26) Publication Language:

English

(30) Priority Data:

17180847.0 12 July 2017 (12.07.2017) EP

(71) Applicant (for AE, AG, AU, BB, BH, BN, BW, BZ, CA, CY, EG, GB, GD, GH, GM, IE, IL, IN, JO, KE, KN, KW, LC, LK, LS, MT, MW, MY, NA, NG, NZ, OM, PG, QA, RW, SA, SC, SD, SG, SL, SZ, TT, TZ, UG, VC, ZA, ZM, ZW only): **UNILEVER PLC** [GB/GB]; a company registered in England and Wales under company no. 41424 of Unilever House, 100 Victoria Embankment, London Greater London EC4Y 0DY (GB).

(71) Applicant (for all designated States except AE, AG, AU, BB, BH, BN, BW, BZ, CA, CY, EG, GB, GD, GH, GM, IE, IL, IN, JO, KE, KN, KW, LC, LK, LS, MT, MW, MY, NA, NG, NZ, OM, PG, QA, RW, SA, SC, SD, SG, SL, SZ, TT, TZ, UG, US, VC, ZA, ZM, ZW): **UNILEVER N.V.** [NL/NL]; Weena 455, 3013 AL Rotterdam (NL).

(71) Applicant (for US only): **CONOPCO, INC., D/B/A UNILEVER** [US/US]; 700 Sylvan Avenue (A4), Englewood Cliffs, New Jersey 07632 (US).

(72) Inventors: **BUHALOVA, Maria**; Conopco, Inc. d/b/a UNILEVER 40 Merritt Boulevard, Trumbull, CT Connecticut 06611 (US). **MOADDEL, Teanoosh**; Conopco, Inc. d/b/a UNILEVER 40 Merritt Boulevard, Trumbull, CT Connecticut 06611 (US).

(74) Agent: **CORSTEN, Michael, Allan**; Unilever PLC Patent Group Colworth House, Sharnbrook, Bedford Bedfordshire MK44 1LQ (GB).

(81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AO, AT, AU, AZ, BA, BB, BG, BH, BN, BR, BW, BY, BZ, CA, CH, CL, CN, CO, CR, CU, CZ, DE, DJ, DK, DM, DO, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT, HN, HR, HU, ID, IL, IN, IR, IS, JO, JP, KE, KG, KH, KN, KP, KR, KW, KZ, LA, LC, LK, LR, LS, LU, LY, MA, MD, ME, MG, MK, MN, MW, MX, MY, MZ, NA, NG, NI, NO, NZ, OM, PA, PE, PG, PH, PL, PT, QA, RO, RS, RU, RW, SA,

SC, SD, SE, SG, SK, SL, SM, ST, SV, SY, TH, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, ZA, ZM, ZW.

(84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LR, LS, MW, MZ, NA, RW, SD, SL, ST, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, RU, TJ, TM), European (AL, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HR, HU, IE, IS, IT, LT, LU, LV, MC, MK, MT, NL, NO, PL, PT, RO, RS, SE, SI, SK, SM, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, KM, ML, MR, NE, SN, TD, TG).

Declarations under Rule 4.17:

- as to applicant's entitlement to apply for and be granted a patent (Rule 4.17(ii))
- as to the applicant's entitlement to claim the priority of the earlier application (Rule 4.17(iii))
- of inventorship (Rule 4.17(iv))

Published:

- with international search report (Art. 21(3))

(54) Title: SKIN COMPOSITION BOOSTER OIL

(57) Abstract: Booster oils with stable oil soluble actives are described. The oils are suitable to be combined with end use compositions in order to enhance the compositions efficacy and ensure superior topical benefits to consumers after application.

SKIN COMPOSITION BOOSTER OIL

Field of the invention

5 The present invention is directed to a skin composition booster oil and a cosmetic composition having enhanced efficacy as a result of being boosted with such oil. The booster oil comprises active solubilized therein and may be added to a cosmetic composition via a dosing regimen. The regimen allows for the control of active strength in the composition topically applied to a consumer.

10

Background of the invention

Dry skin, age spots, as well as wrinkles are just a few of the imperfections that impact a consumer's skin. Personal care products, including creams and lotions, are typically
15 formulated with actives to address such imperfections. Traditional products typically display shortcomings since actives formulated in the products tend to be unstable and/or interact with each other to yield by-products with little to no known skin benefits. It is also true that active instability and interaction often results in a cosmetic composition that can be discoloured, have malodour or both wherein such
20 characteristics would invariably cause a consumer not to continue to use the product at issue.

There is increasing interest to develop cosmetic compositions that have stable actives and that are able to provide superior efficacy to consumers when they are topically
25 applied.

This invention, therefore, is directed to a skin composition booster oil. The skin composition booster oil has active solubilized therein and is suitable to be added to a cosmetic composition via a dosing regimen to unexpectedly result in cosmetic
30 composition with superior active efficacy when topically applied.

- 2 -

Additional Information

Efforts have been made for developing topical compositions. In U.S. Patent No. 8,124,063, a composition for moisturizing human skin is described.

5

Other efforts have been disclosed for making topical compositions that benefit skin. In U.S. Patent Nos. 8,409,550; 8,226,933 and 7,959,913, compositions containing boosters are described.

10 Still other efforts have been disclosed for preparing skin benefit compositions. In U.S. Patent No. 8,642,665, environmentally friendly and low whitening topical compositions are described.

None of the additional information describes a composition as set forth in the present
15 invention as claimed.

Summary of the invention

In a first aspect, the present invention is directed to a booster oil comprising:

- 20 (a) oil, the oil having a peroxide value from 0 to 4 meq/kg and a polarity index from 20 to 80 mN/m;
(b) oil soluble active

wherein oil makes up from 88 to 99.5% by weight of the booster oil, the booster oil optionally comprising structurant.

25

In a second aspect, the invention is directed to a cosmetic composition having added thereto the booster oil of the first aspect of the invention.

In a third aspect, the invention is directed to a regimen or method for adding the
30 booster oil of the first aspect of the invention to a cosmetic composition.

All other aspects of the invention will more readily become apparent from the description and examples which follow.

- 3 -

Skin, as used herein, is meant to include skin on the arms, face, feet, neck, chest, hands, legs, buttocks and scalp (including hair). End use composition (water or oil continuous but preferably oil continuous) is a composition for topical application and includes a cream, lotion, balm, serum, gel, mousse, deodorant, antiperspirant, shampoo, conditioner, and liquid personal wash. Active means an ingredient that improves a skin characteristic. The booster oil of the present invention is a composition with oil comprising stable and soluble active that may be combined with the end use composition. Polarity index means the value measured of the interfacial tension of an oil taken against water and measured via the drop weight method (M. Albaz et al.; The Measurement of Interfacial Tension by Drop Weight Method, Commun. Fac. Sci. Univ. Ank. Serie B, V 34, p 103, 1988). Peroxide value is a normal oxidation index of an oil as measured by standard iodometric titration. Actives not compatible means when present, their combined benefit can be inferior to the benefit each provides alone. Retinoic acid precursor is defined to mean a component that, when oxidized, can convert to retinoic acid.

Unless explicitly stated otherwise, all ranges described herein are meant to include all ranges subsumed therein. The term comprising is meant to encompass the terms consisting essentially of and consisting of. For the avoidance of doubt, a composition comprising the oil, structurant and active of this invention is meant to include a composition consisting essentially of the same and a composition consisting of the same. Stable, as used to characterize active in the booster oil, means active that remains intact prior to being combined with end use composition. All percentages used herein are meant to be by weight unless stated otherwise. Except in the operating comparative examples, or where otherwise explicitly indicated, all numbers in this description indicating amounts or ratios of materials or conditions and/or physical properties of materials and/or use are to be understood as modified by the word "about".

- 4 -

Detailed description of the invention

The only limitation with respect to the active that may be used in the booster oil of this invention is that the same is soluble therein and provides a benefit to skin when
5 topically applied.

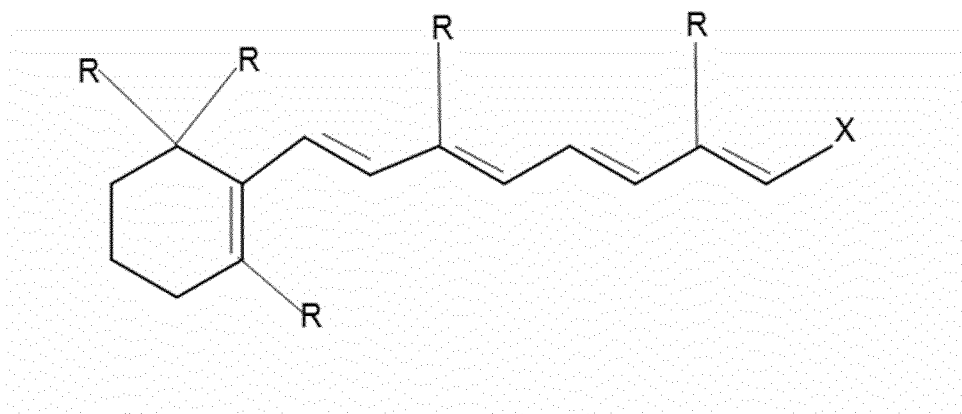
Illustrative examples of the actives suitable for use in this invention include those which are oil soluble like Vitamin A, D, E and K (and their oil soluble derivatives), sunscreens like ethylhexylmethoxycinnamate, bis-ethyl hexyloxyphenol methoxyphenol triazine, 2-
10 ethylhexyl-2-cyano-3,3-diphenyl-2-propanoic acid, drometrizole trisiloxane, 3,3,5-trimethyl cyclohexyl 2-hydroxybenzoate, 2-ethylhexyl-2-hydroxybenzoate or mixtures thereof.

Additional oil soluble actives suitable for use include resorcinols like 4-ethyl resorcinol,
15 4-hexyl resorcinol, 4-phenylethyl resorcinol, 4-cyclopentyl resorcinol, 4-cyclohexyl resorcinol, 4-isopropyl resorcinol or mixture thereof. Also, 5-substituted resorcinols like 4-cyclohexyl-5-methylbenzene-1,3-diol, 4-isopropyl-5-methylbenzene-1,3-diol, mixtures thereof or the like may be used. The 5-substituted resorcinols, and their synthesis are described in commonly assigned U.S. Published Patent Application No.
20 2016/0000669A1.

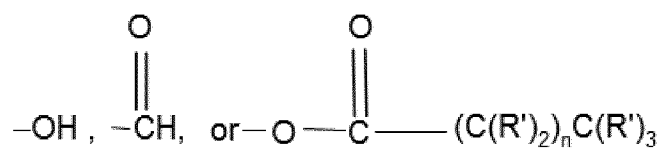
Even other oil soluble actives suitable for use include omega-3 fatty acids, omega-6 fatty acids, climbazole, farnesol, ursolic acid, myristic acid, geranyl geraniol, oleyl betaine, cocoyl hydroxyethyl imidazoline, hexanoyl sphingosine, 12-hydroxystearic
25 acid, petroselinic acid, conjugated linoleic acid, mixtures thereof or the like.

In an especially preferred embodiment, the oil soluble active used in this invention is a retinoic acid precursor represented by the formula:

- 5 -



where each R is independently a hydrogen or a C₁₋₆ alkyl group and X is

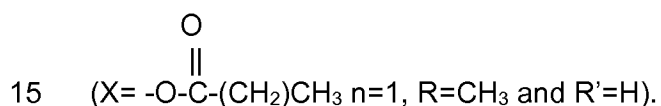


5

and further where each R' is hydrogen or a C₁-C₃ alkyl and n is an integer from 0 to 16 (preferably, 1 to 5) and the retinoic acid precursor is retinol, retinal, retinyl propionate, retinyl palmitate, retinyl acetate or a mixture thereof.

10

Preferably, each R is CH₃, each R' is hydrogen and the preferred retinoic acid precursor is retinyl propionate,



Still another retinoic acid precursor suitable for use is hydroxyanasatil retinoate made commercially available under the name Retextra[®] as supplied by Molecular Design International. The same may be used in a mixture with the actives described herein.

20

It is within the scope of this invention for a first and second active to be present in the booster oil of the present invention at a weight ratio of 1.5:0.25 to 0.25:1.5, and typically, at a weight ratio of 1.3:1 to 1:1.3, including all ratios subsumed therein.

- 6 -

In another embodiment, when the booster oil comprises a first active, like a retinoic acid precursor, and a second active not compatible with the first active, like resorcinol, from 2 to 5, and preferably from 3 to 7, and most preferably, from 4 to 10 times more
5 (by weight) of one is used over the other.

In another embodiment, less than 0.3% by weight, and preferably, less than 0.1% by weight, and most preferably, no second active, like resorcinol, is present in the oil when the first active, like a retinoic acid precursor, is present, based on total weight of the
10 booster oil and when the first and second active are not compatible with each other in the same composition.

In still another embodiment, less than 0.3% by weight, and preferably, less than 0.1% by weight, and most preferably, no first active, like a retinoic acid precursor, is present
15 when a second active, like resorcinol, is present, based on total weight of the booster oil and when the first and second active are not compatible with each other in the same composition.

In a preferred embodiment, a retinoic acid precursor and a resorcinol are present in the
20 booster oil at a weight ratio from 0.6:1.0 to 1.0:0.6, and preferably, from 0.8:1 to 1 to 0.8.

Typically, the amount of oil soluble active used in this invention is from 0.001 to 2.5%, and preferably, from 0.01 to 2%, and most preferably, from 0.05 to 2% by weight,
25 based on total weight of booster oil and including all ranges subsumed therein.

In a most preferred embodiment, the booster oil of the present invention has retinyl propionate and hexyl- and/or ethyl resorcinol as active. In another preferred embodiment, the booster oil comprises as active retinyl propionate and climbazole.
30

Oils (i.e., carrier oil to make booster oil with soluble active) suitable for use in this invention include those having a peroxide value from 0 to 4, and preferably, from 0.0 to 3.5, and most preferably, from 0.0 to 2.25. Such oils will also have a polarity index

- 7 -

from 0.1 to 80 mN/m, and preferably, from 1.0 to 75 mN/m, and most preferably, from 10 to 70 mN/m.

Illustrative examples of oils suitable for use in this invention include hydrocarbons and
5 polymer oils like mineral oil, squalane, squalene, isohexadecane or hydrogenated
polyisobutene; and silicone oils like dimethicone (e.g., DC245, made commercially
available from Dow Chemical) or cyclomethicone; and esters like isopropyl myristate,
isopropyl palmitate, isopropyl isostearate, isostearyl palmitate, isostearyl myristate,
isostearyl isostearate, oleyl oleate, decyl oleate, decylcocoate,
10 ethylhexylhydroxystearate, ethylhexyl palmitate, ethylhexyl stearate, cetearyl
ethylhexanoate, cetearyl isononanoate, propylene glycol dicaprylate/dicaprate or
caprylic capric triglyceride. Mixtures of the above oils may be used, but an often
preferred oil is one comprising at least 3%, and preferably, at least 5%, and most
preferably, at least 7% to 100% by weight caprylic capric triglyceride, mineral oil,
15 silicone oil and/or ester oil (such as isopropyl palmitate), based on total weight of oil in
the booster oil.

Oil typically makes up from 88 to 99.5%, and preferably, from 90 to 96%, and most
preferably, from 90 to 94% by weight of the total weight of booster oil, including all
20 ranges subsumed therein. In a preferred embodiment, the booster oil of the present
invention consisting essentially of oil and oil soluble active, and more preferably, oil, oil
soluble active and structurant, and use of the booster oil to boost end use composition
is most desirable.

25 The end use compositions suitable to be combined (i.e., dosed or used with) the
booster oil of the present invention are typically emulsions that comprise from 2 to 98%
by weight water. Such emulsions may comprise from 2 to 98% by weight oil whereby
the oil may be identical to that of the oil used to make the booster oil with soluble active
as defined herein.

30

The emulsifiers suitable for use in the end use composition that is dosed with booster
oil typically have an HLB from 5 to 20, and preferably, from 5 to 18, and most
preferably from 5 to 7, including all ranges subsumed therein. Illustrative examples of
the types of emulsifiers suitable for use in the end use composition described in this

- 8 -

invention include cetareth-20, cetaryl glucoside, ceteth-10, ceteth-20, isostareth lauramide, lecithin, linoleamide, oleth-10, PEG-20, methyl glucose sesquistearate, polysorbate 20, polysorbate 40, polysorbate 60, polysorbate 80, polysorbate 85, stearamide MEA, mixtures thereof or the like.

5

Emulsifiers sold under the names Scatties®, Tween®, Alkest® and Canarcel® are suitable for use. Preferred emulsifiers include those with an HLB of 7 or under such as glyceryl laurate, ceteth 2, glyceryl stearate, PEG-4 dilaurate and the like.

- 10 Emulsifiers typically make up from 0.1 to 25%, and preferably, from 0.5 to 20%, and most preferably, from 0.8 to 5% by weight of the end use composition, including all ranges subsumed therein. As noted, the end use composition may be an oil-in-water or water-in-oil composition, but it is preferably a water-in-oil composition.
- The end use compositions suitable to be combined (i.e., dosed or used with) the
- 15 booster oil of the present invention can also include double emulsions with the external phase preferably being oil.

- Preservatives can desirably be incorporated into the end use composition of this invention to protect against the growth of potentially harmful microorganisms. Suitable
- 20 traditional preservatives for compositions of this invention are alkyl esters of para-hydroxybenzoic acid. Other preservatives which have more recently come into use include hydantoin derivatives, propionate salts, and a variety of quaternary ammonium compounds. Cosmetic chemists are familiar with appropriate preservatives and routinely choose them to satisfy the preservative challenge test and to provide product
- 25 stability. Particularly preferred preservatives are iodopropynyl butyl carbamate, phenoxyethanol, 1,2-octanediol, hydroxyacetophenone, ethylhexylglycerine, hexylene glycol, methyl paraben, propyl paraben, imidazolidinyl urea, sodium dehydroacetate and benzyl alcohol. The preservatives should be selected having regard for the use of the composition and possible incompatibilities between the preservatives and other
- 30 ingredients in the emulsion. Preservatives are preferably employed in amounts ranging from 0.01% to 2% by weight in the end use composition, including all ranges subsumed therein. Combinations of 1,2-octanediol and phenoxyethanol, or iodopropynyl butyl carbamate and phenoxyethanol are often preferred. Also preferred is a preservative system with hydroxyacetophenone alone or in a mixture with other preservatives.

- 9 -

Thickening agents (structurants) may optionally be included (preferably are included) in the booster oil (when they are oil soluble) of the present invention as well as the end use composition being combined with booster oil. Particularly useful are oil soluble thickening agents such as for example ViscUp™ (hydrogenated styrene butadiene copolymer) made commercially available by Lonza. Other suitable thickening agents can include Silicone elastomers, fumed silica, magnesium-aluminum silicate. Still others could include polyamides such as those sold under the tradename Sylvaclear™, Sylvasol™, Uniclear™, Sylvagel™. Clays such as Betonite, hectorite are also suitable oil gellants. Also other suitable gellants can include natural organophilic layered silicates sold under tradename Tixogel™, Garamite™. Still other thickening agents can include hydrogenated castor oil sold under the tradename Rheocin™. Hydrophobically modified polysaccharides can also be used. Examples include hydrophobically modified starches, natural/synthetic gums and cellulose.

In the case of the water phase of the end use composition, maltodextrin, xanthan gum, citrus fibers and carboxymethyl cellulose are the often preferred thickening agents used. Structurant typically makes up from 0.001 to 20%, and preferably, from 0.1 to 16%, and most preferably, from 0.25 to 12.5% by weight of the booster oil and/or the end use composition, including ranges subsumed therein. In an especially preferred embodiment, structurant is present in the booster oil at a weight percent of 2.5 to 6.5% by weight of the total weight of booster oil, including all ranges subsumed therein.

Fragrances, fixatives and exfoliants may optionally be included in booster oil and/or end use composition of the present invention. Each of these substances may range from about 0.05 to about 5%, preferably between 0.1 and 3% by weight.

Conventional humectants may optionally be employed as additives to the end use composition of the present invention as a skin benefit agent. These are generally polyhydric alcohol type materials. Typical polyhydric alcohols include glycerol (i.e., glycerine or glycerin), propylene glycol, dipropylene glycol, polypropylene glycol, polyethylene glycol, sorbitol, hydroxypropyl sorbitol, hexylene glycol, 1,3-butylene glycol, isoprene glycol, 1,2,6-hexanetriol, ethoxylated glycerol, propoxylated glycerol and mixtures thereof. Most preferred is glycerin, propylene glycol or a mixture thereof.

- 10 -

The amount of humectant employed may range anywhere from 0.0 to 15% by weight of the total weight of the end use composition.

Conventional sensory particles may optionally be employed such as for example
5 polyethylene, polymethylmethacrylate, silica beads sold by KOBO. These typically make up from 0.1 to 2.0% by weight of the end use composition when they are used.

The end use composition of the present invention may optionally include water soluble actives like Vitamin B₂, Vitamin B₃ (niacinamide), Vitamin B₆, Vitamin C and the like.
10 Derivatives of the vitamins may also be employed.

For instance, Vitamin C derivatives such as ascorbyl tetraisopalmitate, magnesium ascorbyl phosphate and ascorbyl glycoside may be used. Other water soluble actives suitable for use in the water continuous phase of the end use composition and extracts
15 like sage, aloe vera, green tea, grapeseed, thyme, chamomile, liquorice or rosemary extract or mixtures thereof. Still other water soluble actives suitable for use include alpha hydroxyacids like lactic and glycolic acid, beta hydroxy acids like salicylic acid, amino acids like cystine, arginine, lysine, glutamine, glycine, glutamic acid (and its derivatives, like pyroglutamic acid), alanine, valine and skin benefit agents like ferulic
20 acid, hyaluronic acid, and allantoin. Water soluble sunscreens like ensulizole may also be used. Total amount of water soluble actives (including mixtures) suitable for use in the end use composition of this invention may range from 0.0 to 15%, preferably from 0.001 to 10%, optimally from 0.01 to 4% by weight based on total weight of the end use composition and including all ranges subsumed therein.

25

When making the booster oil of the present invention, the desired ingredients may be mixed to produce the oil continuous composition having soluble active therein. Typically moderate shear is used under atmospheric conditions with temperature being from ambient to 85°C. The end use compositions suitable for use in this invention may
30 be mixed via conventional methods including those which use standard homogenization techniques. The end use compositions suitable for use can also be those which are commercially available.

- 11 -

In a preferred embodiment, the booster oil of the invention has a viscosity from 750 to 15,000 cps, and preferably, from 2,000 to 10,000 cps, and most preferably, from 4,000 to 7,000 cps, including all ranges subsumed therein, where the viscosity of the booster oil may be measured with a Brookfield (DV-1+) Viscometer, temperature 25°C and set
5 at 20 RPM, RV6 for 30 seconds.

The booster oil of the present invention typically should have less than 5% by weight water, and preferably, 0.0 to 2.5 % by weight water based on total weight of the booster oil and including all ranges subsumed therein. In a most preferred embodiment, the
10 booster oil is anhydrous, and therefore, free of water.

The oil soluble actives described for use in the booster oil of this invention may also be present within the oil phase of the end use composition. Typically, such oil soluble actives make up from 0.0 to 20%, and preferably, from 0.01 to 16%, and most
15 preferably, from 1.0 to 12% by weight of the end use composition, including all ranges subsumed therein. In an especially preferred embodiment, from 0.001 to 6%, and most preferably, from 0.03 to 3.5% by weight of a resorcinol derivative is present in the oil phase of the end use composition with no retinoic acid precursor present therein.

20 If gels are desired, to the booster oil may be added oil based gelling agents like those comprising lecithin, phospholipids, phytostearol or mixtures thereof. Such agents typically make up from 0.1 to 2%, and preferably, from 0.5 to 1.5% by weight of the booster oil, including all ranges subsumed therein.

25 The booster oil of the present invention is dosed into the end use composition and typically a consumer is instructed to combine booster oil with end use composition already in the consumer's hand. The same may first be mixed in a small vessel like a reusable plastic cup. Instructions on how much booster to combine with end use composition will be provided so that the consumer, by mixing in his or her hands
30 (stirring or collectively on his or her body), will produce a well-mixed and enhanced end use composition that has intact active ready to apply to skin in need of an improvement. Typically, instructions will be provided to not use the booster oil alone and only in combination with end use composition. Booster dosing may be achieved with a package suitable to release drops or with a package having an eye dropper,

- 12 -

preferably with volume marked. Typically, the consumer will be instructed to use from 2 to 8 and preferably, from 4 to 6 times by weight more end use composition than booster oil, including all ranges subsumed therein.

- 5 The end use compositions suitable for boosting with booster oil of this invention are limited only to the extent that they may be topically applied to provide a consumer benefit. Superior products made commercially available by Unilever® under the brand names Dove®, Ponds®, Simple®, Vaseline®, Fair and Lovely®, St Ives®, Noxema®, Suave®, Kate Somerville® and the like are especially preferred for use with the booster
10 oil of this invention.

The Examples provided are to facilitate an understanding of the invention. They are not intended to limit the scope of the claims.

15 **Example 1**

The following ingredients were mixed under moderate shear (atmospheric pressure conditions and temperature at 40°C) to produce booster oils consistent with this invention. Amount of active present was determined by HPLC.

20

Ingredient	Weight Percent
Caprylic Capric Triglyceride (CCT)	Balance
Isopropyl Palmitate	36%
Mineral Oil 70	47%
Silicone Oil (DC245)	2%
4-Hexyl Resorcinol	0.4%
Retinyl Propionate	0.37%
Climbazole	0.25%
ViscUp™ (hydrogenated styrene butadiene copolymer)	4%

- The booster oil made according to this Example when stored at 45°C for three months surprisingly displayed nearly no visible color change with 90% of the original amount of hexyl resorcinol used and 80% of the original amount of retinyl propionate used
25 remaining intact. The results show that active level and selection of oil consistent with

- 13 -

the criteria set out in this invention unexpectedly yield an oil based booster with stable active.

Example 2

5

The following ingredients were mixed in a manner similar to the one described in Example 1.

Sample 1	% by weight	Sample 2	% by weight	Sample 3	% by weight	Sample 4	% by weight
Caprylic capric triglyceride	99.2	Caprylic capric triglyceride	91	Caprylic capric triglyceride	75	Caprylic capric triglyceride	50
Retinyl propionate	0.4	Retinyl propionate	4.3	Retinyl propionate	12	Retinyl propionate	24
4-hexyl resorcinol	0.4	4-hexyl resorcinol	4.7	4-hexyl resorcinol	13	4-hexyl resorcinol	26

- 10 Surprisingly, after storage for 5 days at 45°C and HPLC analysis, the following results were obtained.

	% Retinyl Propionate Remaining	% 4-Hexyl Resorcinol Remaining
Sample 1	100	93
Sample 2	73	86
Sample 3	7	56
Sample 4	0	49

- 15 The results indicate that when active exceeds 2.5%, stability of the active is compromised.

- 14 -

Example 3

The following Samples were made by mixing ingredients in a manner similar to the one described in Example 1. The Samples were stored for 11 days at 70°C.

- 15 -

Ingredient	Sample 5 (wt%)	Sample 6 (wt%)	Sample 7 (wt%)	Sample 8 (wt%)	Sample 9 (wt%)	Sample 10 (wt%)	Sample 11 (wt%)	Sample 12 (wt%)
Retinyl Propionate	0.5	0.5	0.5	0.5	0.5	4.3	0.4	4.3
4-Hydroxy Resorcinol	-	0.4	-	0.4	0.4	4.7	0.4	4.7
Isopropyl Palmitate	99.6	99.2	-	-	99.2	91	-	-
Isopropyl Isostearate	-	-	99.6	99.2	-	-	99.2	91

- 16 -

Surprisingly, after storage and assessment with HPLC analysis, the following results were obtained.

	% Retinyl Propionate Remaining	% 4-Hexyl Resorcinol Remaining
Sample 5	8	-
Sample 6	45	100
Sample 7	0	-
Sample 8	16	58
Sample 9	45	100
Sample 10	2	46
Sample 11	16	58
Sample 12	9	69

- 5 The results indicate that when oil and/or active amount is/are used in a manner that does not meet the criteria of the present invention, stability of the actives present decreases.

Example 4

10

Booster oil similar to the one made in Example 1 was combined with a commercially available lotion (Pond's age miracle™) to further enhance the performance of the latter. The panelists were instructed to utilize 5 parts of end use composition for every part of booster oil and to combine the components with shear in a reusable cosmetic cup. The resulting end use product was then applied to the panelist's hands to deliver excellent topical benefits. Surprisingly, the composition was easy to mix and apply. The composition did not result in unpleasant sensory characteristic upon application.

15

Claims

1. A booster oil comprising
 - (a) oil, the oil having a peroxide value from 0 to 4 meq/kg and a polarity index from 20 to 80 mN/m;
 - (b) oil soluble activewherein oil makes up from 88 to 99.5% by weight of the booster oil, the booster oil optionally comprising structurant.
2. The booster oil according to claim 1 wherein the structurant is present at an amount from 2.5 to 5.5 percent by weight.
3. The booster oil according to claim 1 or 2 wherein the oil soluble active is a retinoic acid precursor or a resorcinol derivative.
4. The booster oil according to any one of the preceding wherein the oil soluble active is a mixture of retinoic acid precursor and resorcinol derivative.
5. The booster oil according to any one of the preceding claims wherein the retinoic acid precursor is retinyl propionate, and 4-hexyl resorcinol, 4-ethyl resorcinol or a mixture thereof.
6. The booster oil according to any one of the preceding claims wherein the oil comprises caprylic capric triglyceride, silicone oil, mineral oil, isopropyl palmitate or a mixture thereof.
7. The booster oil according to any one of the preceding claims wherein the booster oil further comprises climbazole.
8. The booster oil according to any one of the preceding claims wherein the booster oil further comprises omega-3 fatty acids, omega-6 fatty acids, climbazole, farnesol, ursolic acid, myristic acid, geranyl geraniol, oleyl betaine, cocoyl hydroxyethyl

- 18 -

imidazoline, hexanoyl sphingosine, 12-hydroxystearic acid, petroselinic acid, conjugated linoleic acid or a mixture thereof.

9. Use of the booster oil of claim 1 to boost efficacy of an end use composition and treating a skin condition with the end use composition.

10. A method for enhancing the efficacy of an end use composition comprising the steps of:

- (a) applying end use composition and the booster composition of claim 1 to at least one palm of a consumer's hand and/or a body surface;
- (b) instructing the consumer to mix the end use composition and booster composition together in a palm of a hand or together on a body surface; and
- (c) applying the resulting enhanced composition topically to skin in need of improvement.

INTERNATIONAL SEARCH REPORT

International application No
PCT/EP2018/066641

A. CLASSIFICATION OF SUBJECT MATTER INV. A61K8/31 A61K8/34 A61K8/37 A61K8/58 A61K8/67 A61Q19/00 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, WPI Data		
C. DOCUMENTS CONSIDERED TO BE RELEVANT		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	DATABASE GNPD [Online] MINTEL; 1 April 2014 (2014-04-01), "Tone Correcting Face Oil", XP002774729, Database accession no. 2388657 Ingredients -----	1,3,5,6
X	US 8 124 063 B2 (BARROW S R; CHANDAR P; HARICHIAN B) 28 February 2012 (2012-02-28) cited in the application example 5 -----	1-3,6
Y		1-10
X	US 2017/071834 A1 (MURUGESAN KAVITHA [GB] ET AL) 16 March 2017 (2017-03-16) paragraphs [0008] - [0017], [0019], [0022], [0023], [0038], [0040] claims 6, 15; examples -----	1-10
Y		1-10
	-/-	
☒ 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 29 August 2018		Date of mailing of the international search report 10/09/2018
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 Perrone Dunet, S

INTERNATIONAL SEARCH REPORT

International application No

PCT/EP2018/066641

C(Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	FR 2 925 298 A1 (OREAL [FR]) 26 June 2009 (2009-06-26) claims 1, 6, 14, 27, 30, 31, 33 -----	1-10
X,P	WO 2017/173291 A1 (OREAL [FR]; DERSH JUSTIN [US]; GENESKY GEOFFREY [US]; GOLDBERG JODI [U]) 5 October 2017 (2017-10-05) paragraphs [0009], [0029], [0037] - [0041]; examples; table 12 -----	1-10

INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No

PCT/EP2018/066641

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
US 8124063	B2	28-02-2012	AR 051143 A1 20-12-2006
			AT 390910 T 15-04-2008
			AU 2005299029 A1 04-05-2006
			BR PI0516884 A 23-09-2008
			CA 2583815 A1 04-05-2006
			CN 101048199 A 03-10-2007
			CN 101048200 A 03-10-2007
			CN 101083974 A 05-12-2007
			DE 602005005847 T2 07-05-2009
			EP 1809235 A1 25-07-2007
			ES 2303282 T3 01-08-2008
			ES 2367363 T3 02-11-2011
			JP 4871873 B2 08-02-2012
			JP 2008517881 A 29-05-2008
			KR 20070072537 A 04-07-2007
			RU 2007119380 A 27-11-2008
			TW 200630110 A 01-09-2006
			US 2006088495 A1 27-04-2006
			WO 2006045427 A1 04-05-2006
			ZA 200702260 B 29-10-2008
			ZA 200702262 B 27-08-2008
			ZA 200703871 B 25-09-2008
			ZA 200703873 B 27-08-2008
US 2017071834	A1	16-03-2017	AU 2016228245 A1 30-03-2017
			GB 2542368 A 22-03-2017
			US 2017071834 A1 16-03-2017
FR 2925298	A1	26-06-2009	NONE
WO 2017173291	A1	05-10-2017	NONE