



- (72) NAJDEK, LINDA, US
(72) PECK, DERRON T., US
(72) CIRIELLO, ELENA M., US
(72) VITALE, RALPH, US
(71) E-L MANAGEMENT CORPORATION, US
(51) Int.Cl.⁷ A61K 7/00, A61K 7/48, A61K 7/02
(30) 1998/05/07 (09/074,051) US
(54) **COMPOSITION COSMETIQUE A DEUX PHASES**
(54) **DUAL PHASE COSMETIC COMPOSITION**

(57) L'invention concerne une composition pharmaceutique et cosmétique liquide à deux phases, comprenant une phase huileuse et une phase aqueuse. Ladite composition contient, en tant qu'agent de démixage, un agent filmogène, tel que du polyvinylpyrrolidone et des dérivés de celui-ci. Les compositions de l'invention sont particulièrement utiles en tant que démaquillants.

(57) The present invention relates to a liquid dual phase cosmetic or pharmaceutical composition comprising an oil phase and an aqueous phase, the composition containing as a demixing agent a film forming agent such as polyvinylpyrrolidone and derivatives thereof. The compositions of the invention are particularly useful as makeup removers.

PCTWORLD INTELLECTUAL PROPERTY ORGANIZATION
International Bureau

INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(51) International Patent Classification ⁶ : A61K 7/00, 7/48, 7/02	A1	(11) International Publication Number: WO 99/56704 (43) International Publication Date: 11 November 1999 (11.11.99)
(21) International Application Number: PCT/US99/05969 (22) International Filing Date: 18 March 1999 (18.03.99) (30) Priority Data: 09/074,051 7 May 1998 (07.05.98) US (71) Applicant: E-L MANAGEMENT CORPORATION [US/US]; 767 Fifth Avenue, New York, NY 10153 (US). (72) Inventors: NAJDEK, Linda; 64 Matinecock Avenue, East Islip, NY 11730 (US). PECK, Derron, T.; 37 Wilbur Avenue, Manorville, NY 11949 (US). CIRIELLO, Elena, M.; 26 Monterey Place, Yonkers, NY 10710 (US). VITALE, Ralph; 28 Henry Road, Centereach, NY 11720 (US). (74) Agent: LOWNEY, Karen, A.; E-L Management Corporation, 125 Pine Lawn Road, Melville, NY 11747 (US).	(81) Designated States: AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GE, GH, GM, HR, HU, ID, IL, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, UZ, VN, YU, ZA, ZW, ARIPO patent (GH, GM, KE, LS, MW, SD, SL, SZ, UG, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG). Published <i>With international search report.</i>	
(54) Title: DUAL PHASE COSMETIC COMPOSITION (57) Abstract The present invention relates to a liquid dual phase cosmetic or pharmaceutical composition comprising an oil phase and an aqueous phase, the composition containing as a demixing agent a film forming agent such as polyvinylpyrrolidone and derivatives thereof. The compositions of the invention are particularly useful as makeup removers.		

DUAL PHASE COSMETIC COMPOSITION

Field of the Invention

The present invention relates to cosmetic compositions. In particular, the invention relates
5 to two-phase cleansing compositions which are particularly useful in makeup removal.

Background of the Invention

Dual phase skin cosmetic compositions are currently very popular, in that they provide a
broad range of cleansing/conditioning potential within a single product, and are also aesthetically
10 appealing to the consumer. Typically, the dual phase product contains an aqueous phase and an oil
phase, each adapted to removing a particular type of residue from the skin, or delivering a particular
type of active. In a common use, for example, the aqueous phase of a dual phase cleansing
composition is designed to remove water-soluble material from the skin, while the oil phase is
designed to remove oil-based, or "waterproof" material from the skin.

15 A number of factors must be considered in making a successful dual phase product. For
example, in order to function properly, the two phases must be vigorously mixed, providing a
temporary apparently homogeneous single phase product which delivers both phases to the region to
be treated simultaneously. This typically means that the product must contain one or more
surfactants or emulsifiers, which will render the two phases at least temporarily compatible during
20 the mixing and application stage. Surfactants are also frequently useful in the removal of
waterproof makeup. Unfortunately, many such emulsifiers are drying to the skin and/or are
irritating to users, and in particular cannot be routinely used in the eye area.

On the other hand, however, it is also desirable that the two phases separate quickly after
use, as the emulsified product has a cloudy appearance that is unappealing to consumers. After
25 prolonged, continuous mixing of the two phases during regular use, the time it takes for the phases
to separate becomes longer and longer, and the product rapidly loses its initially attractive
appearance. Moreover, oil soluble actives may be unstable if they remain in prolonged contact with
the aqueous phase, and therefore, the amount of time spent in contact with the water phase should be
minimized. As can readily be seen, these two aspects of the dual phase product, namely, the need for
30 rapid and complete emulsification followed by rapid and complete separation, are at odds with each
other, and to achieve both satisfactorily in a single product, in a way that is both cosmetically
acceptable and attractive to the user, is often difficult. The present invention, however, provides a
dual phase product in which the phases mix well and completely, and yet demixing is accomplished
rapidly after use. Moreover, the product is non-irritating, and when used as a makeup remover, is
35 highly successful in removing even the most difficult to remove oil-based cosmetics.

Summary of the Invention

The present invention relates to a liquid dual phase cosmetic or dermatological composition comprising an aqueous phase and an oil phase, at least one of the phases containing as a demixing agent, a film forming agent. In a preferred embodiment, the demixing agent is a polyvinylpyrrolidone (hereinafter referred to as "PVP") or a copolymer thereof. The compositions of the invention are particularly useful when employed as a makeup remover, but may also be used for skin conditioning, or delivery of cosmetic or therapeutic active agents to the skin for the treatment and/or amelioration of various skin conditions.

10

Detailed Description of the Invention

The demixing agents used in the present dual phase compositions are well-known in the art for being useful as film forming agents and for being useful in improving water resistance and wear of compositions. However, it has not been previously known that they can be used to facilitate rapid separation of phases in a two phase emulsion. In addition to this function, however, these demixing agents have the additional advantage of being extremely mild, and non-irritating. In particular, they do not appear to cause any irritation when in contact with the eye, which cannot be said of many other demixing agents.

Any film-forming agent may be used in the compositions of the invention. Examples of useful categories of demixing agents include acrylic acid polymers and copolymers, such as cycloalkyl methacrylate copolymer; chitin or chitosan or derivatives thereof; or polyquaternium film formers, such as polyquaternium-11. A preferred demixing agent is PVP or a copolymer thereof. Particularly preferred are PVP/hexadecene copolymer and/or PVP/polycarbamyl polyglycol ester. PVP/hexadecene copolymer is available commercially under the tradename Ganex V-216®, from ISP Sutton Labs of Chatham, New Jersey. Other demixing agents include for example, PVP/dimethylaminoethylmethacrylate copolymer, PVP/eicosene copolymer, PVP/ethyl methacrylate/methacrylic acid copolymer, PVP/VA copolymer, PVP/1-triacontene, and listings of film formers in the CTFA Cosmetic Ingredient Handbook, incorporated herein by reference.

The demixing agent is added to either the oil phase or the water phase of the composition, usually in an amount of from about 0.001 to about 10 percent, preferably in an amount of about 0.01 to about 1 percent. Dual phase compositions prepared with such a demixing agent emulsify rapidly and uniformly upon vigorous shaking, and demulsify completely upon resting within approximately 5 to 20 minutes. The remainder of the composition is formulated depending on the nature of the desired end product. The ratio of the oil phase to aqueous phase is not critical, and can be varied in

5 to 20 minutes. The remainder of the composition is formulated depending on the nature of the desired end product. The ratio of the oil phase to aqueous phase is not critical, and can be varied in accordance with the type of product, but will generally be between 30:70 to 70:30, more preferably between 40:60 to 60:40. Most preferably, the aqueous phase is present as a higher weight per cent than the oil phase. The aqueous phase may be any cosmetically acceptable water based material, such as deionized water, or floral water.

The oil phase may be any cosmetically or pharmaceutically acceptable oil, such an oil being defined for the present purpose as any pharmaceutically or cosmetically acceptable material which is substantially insoluble in water. As the oils can perform different functions in the composition, the specific choice is dependent on the purpose for which it is intended. The oils may be volatile or non-volatile, or a mixture of both. For example, suitable volatile oils include, but are not limited to, both cyclic and linear silicones, such as cyclomethicone, octamethylcyclotetrasiloxane, and decamethylcyclopentasiloxane; or straight or branched chain hydrocarbons having from 8-20 carbon atoms, such as decane, dodecane, tridecane, tetradecane, and C8-20 isoparaffins.

Non-volatile oils include, but are not limited to, vegetable oils, such as coconut oil, jojoba oil, corn oil, sunflower oil, palm oil, soybean oil; carboxylic acid esters such as isostearyl neopentanoate, cetyl octanoate, cetyl ricinoleate, octyl palmitate, dioctyl malate, cocodicaprylate/caprate, decyl isostearate, myristyl myristate; animal oils such as lanolin and lanolin derivatives, tallow, mink oil or cholesterol; glyceryl esters, such as glyceryl stearate, glyceryl dioleate, glyceryl distearate, glyceryl linoleate, glyceryl myristate; non-volatile silicones, such as dimethicone, dimethiconol, dimethicone copolyol, phenyl trimethicone, methicone, simethicone; and non-volatile hydrocarbons, such as isoparaffins, squalane, or petrolatum.

The composition also may contain other cosmetically or therapeutically useful components. It may, for example, be desirable to incorporate other surfactants into the formulation, again depending on the intended purpose of the formulation, for example, as cleansing agents to assist in wetting skin, emulsifying oils or solubilizing soil on skin or as foaming agents. The surfactants employed may be any that are traditionally used for cosmetic or pharmaceutical purposes, and may be selected from nonionic, anionic, cationic or amphoteric surfactants, the identities of which are well known to those skilled in the art. Additional surfactants may be distributed in either or both of the phases of the formulation, and selection is limited only by a given surfactant's compatibility with the phase into which it is incorporated, and by the location to which the composition is to be applied. Other potentially useful components of the formulation include emollients, humectants, fragrances, preservatives, and buffers. Such materials are routinely used in cosmetic products, and

listings of appropriate materials can be found, for example in the International Cosmetic Ingredients Handbook, Third Edition, 1996 (CTFA).

As noted above, the formulation can also be used for therapeutic or quasi-therapeutic purposes, and therefore may also comprise useful active ingredients, for the purposes of treating both the skin and hair. Useful active ingredients include, but are not limited to antioxidants, antimicrobials, sunscreens, analgesics, anesthetics, anti-acne agents, antidandruff agents, antidermatitis agents, antipruritic agents, anti-inflammatory agents, antihyperkeratolytic agents, anti-dry skin agents, antiperspirants, antipsoriatic agents, antiseborrheic agents, hair conditioners and hair treatment agents, antiaging agents, antiwrinkle agents, antihistamine agents, skin lightening agents, depigmenting agents, wound-healing agents, vitamins, corticosteroids, tanning agents, or hormones. The location of the active in the formulation is determined by its solubility and/or stability in either oil or water.

The formulations of the present invention are useful for a variety of purposes, including skin or hair cleansers, skin or hair treatment products, sunscreen or suntanning products, and the like. In a particularly preferred embodiment, however, the composition is used for removing makeup. As already noted, the demixing agents, because of their mildness, are eminently well-suited to being employed in a product which is usable around the eye. When combined with an appropriate group of additional components, particularly in the oil phase, the resulting makeup remover successfully cleans skin surfaces, particularly eyes and lips, of even the most transfer-resistant of currently used cosmetics, while remaining gentle and non-irritating to the user.

In this preferred embodiment, the oil phase contains a combination of both volatile and non-volatile oils. The volatile oil portion is preferably a volatile hydrocarbon present in amounts of from about 30-70%, and more preferably 40-60%, and the non-volatile present at about 0.1-10%, preferably 0.2-5% by weight of the total composition. In a particularly preferred embodiment, the oil phase contains a blend of oils comprising isododecane at 25-40% by weight of the total composition, a volatile C₁₆ isoparaffin at 15-30% by weight of the total composition, and the non-volatile silicone at 0.1-1% by weight of the total composition.

The non-volatile portion of the oil phase is preferably a non-volatile silicone oil. A preferred non-volatile silicone is dimethicone. In a particularly preferred embodiment, the amount of volatile oil used is considerably higher than that of the non-volatile oils; for example, the volatile oil will be present in an amount of about 30-70%, preferably about 40-60%, of the total composition, and the non-volatile oil in an amount of about 0.1-10%, preferably about 0.2-5% of the total composition.

In another embodiment, for example, the volatile oil portion contains a combination of a volatile silicone and a volatile hydrocarbon. More specifically, the oil phase contains a blend of oils comprising a low molecular weight cyclic silicone at 25-40% by weight of the total composition, a volatile C₁₆ isoparaffin at 15-30% by weight, and the non-volatile silicone at 0.1-1% by weight of the total composition.

In this preferred embodiment, it may be desirable to provide an additional small amount of surfactant in the oil phase to facilitate removal of the cosmetic residue from the skin. The amount of surfactant added is preferably no more than 5%, and more preferably is in the range of 0.1-1%. The surfactant may be of any type, i.e., anionic, nonionic, cationic or amphoteric; however, if the makeup remover is intended for use in the eye area, it is preferred that the surfactant should be a mild surfactant, such as LIPO-PEG-2DL or disodium cocoaamidacetate (Miranol).

The invention is further illustrated in the following non-limiting examples:

15 EXAMPLES

1. The following illustrates a formulation of the present invention:

<u>MATERIAL</u>	<u>% BY WT</u>
Isododecane	30
Isohexadecane	20
Dimethicone	0.5
PVP/hexadecene copolymer	0.1
PEG-4 Dilaurate	0.4
Purified water	45
Sodium chloride	1
Potassium phosphate	0.2
Phenoxyethanol	0.5
Glycerin	0.2
Hexylene glycol	2

WO 99/56704

PCT/US99/05969

Methylparaben 0.1

The components are combined as follows: the oil phase components, isododecane, isohexadecane, silicone and PEG-4 dilaurate are mixed with PVP/hexedecene copolymer (Ganex V-216®), and the water phase components, sodium chloride, potassium phosphate, hexylene glycol, fragrance, 5 preservative and water are mixed together. First the oil phase is added to the selected container, then the water phase is added.

What we claim is:

1. A dual phase liquid cosmetic or pharmaceutical composition comprising an aqueous phase and an oil phase, the composition containing as a demixing agent an effective amount of a film forming agent.
5
2. The composition of claim 1 in which the film forming agent is selected from the group consisting of polyvinylpyrrolidone and copolymers thereof.
- 10 3. The composition of claim 2 wherein the derivative is polyvinylpyrrolidone hexadecene copolymer.
4. The composition of claim 1 in which the demixing agent is present in an amount of from about 0.001 to about 10 percent by weight of the total composition.
15
5. The composition of 4 in which the demixing agent is present in an amount of from about 0.01 to about 1 percent by weight of the total composition.
6. The composition of claim 1 in which the oil phase and aqueous phase are present in a ratio
20 of from about 30:70 to about 70:30, by weight of the total composition.
7. The composition of claim 1 in which the aqueous phase and oil phase are present in a ratio of from about 40:60 to about 60:40, by weight of the total composition.
- 25 8. A liquid dual phase makeup removal composition comprising an oil phase and an aqueous phase, the composition containing as a demixing agent, an effective amount of a film forming agent.
9. The composition of claim 8 wherein the film forming agent is selected from the group consisting of polyvinylpyrrolidone and copolymers thereof, and acrylic acid polymers or
30 copolymers.
10. The composition of claim 9 in which the agent is polyvinylpyrrolidone hexadecene copolymer.

11. The composition of claim 8 in which the agent is present in an amount of from about 0.001 to about 10 percent by weight of the total composition.
12. The composition of claim 11 in which the compound is present in an amount of from about 5 0.01 to about 1 percent by weight of the total composition.
13. The composition of claim 8 in which the oil phase contains a combination of volatile and non-volatile oils.
- 10 14. The composition of claim 13 in which the amount of volatile oil is about 30 to about 70 percent by weight of the total composition and the amount of non-volatile oil is about 0.1 to about 10 percent by weight of the total composition.
15. The composition of claim 13 in which the volatile oil is a volatile hydrocarbon.
- 15 16. The composition of claim 15 in which the volatile hydrocarbon is isododecane, isohexadecane, or a combination thereof.
17. The composition of claim 13 in which the volatile oil comprises both a volatile silicone and 20 a volatile isoparaffin.
18. The composition of claim 17 in which the volatile silicone is cyclomethicone and the volatile isoparaffin is a C₁₆ isoparaffin.
- 25 19. The composition of claim 13 in which the non-volatile oil comprises a non-volatile silicone.
20. The composition of claim 19 in which the silicone is dimethicone.
21. A liquid dual phase makeup removal composition comprising an oil phase and an aqueous 30 phase, the composition containing as a demixing agent, an effective amount of polyvinylpyrrolidone or copolymers thereof.
22. A composition of claim 21 in which the demixing agent is polyvinylpyrrolidone hexadecene copolymer.

23. The composition of claim 22 in which the oil phase comprises a volatile oil and a non-volatile oil.
- 5 24. The composition of claim 23 in which the volatile oil is present in an amount of from about 30 to about 70 percent by weight of the total composition and the non-volatile oil is present in an amount of about 0.1 to about 10 percent by weight of the total composition.
- 10 25. The composition of claim 24 in which the volatile oil comprises a volatile silicone and a volatile paraffin.
26. The composition of claim 25 in which the non-volatile oil comprises a non-volatile silicone.
- 15 27. The composition of claim 26 which comprises a cyclic silicone present in an amount of about 25 to about 40 percent by weight of the total composition, a C₁₆ isoparaffin present in an amount of about 15 to about 30 percent by weight of the total composition, and a non-volatile silicone present in an amount of about 0.1 to about 1 percent by weight of the total composition.
- 20 28. The composition of claim 27 in which the cyclic silicone is cyclomethicone, the isoparaffin is isohexadecane, and the non-volatile silicone is dimethicone.
29. The composition of claim 28 which comprises an additional surfactant in an amount of no greater than about 5 percent by weight of the total composition.
- 25 30. The composition of claim 29 in which the additional surfactant is present in an amount of from about 0.1 to about 1 percent by weight of the total composition.
31. The composition of claim 21 in which the oil phase and the aqueous phase are present in a ratio of about 40:60 to about 60:40.
- 30 32. The composition of claim 23 in which the volatile oil is a volatile hydrocarbon.
33. The composition of claim 32 in which the volatile oil is isododecane, isohexadecane or a combination thereof.