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# ESCOBAR - URIBE ASOCIADOS

A B O G A D O S

Carrera 11A No. 94-76 Of. 305 - P.O. Box 94948, Bogotá, Colombia, S.A.
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2475/P

SUPERINTENDENCIA DE INDUSTRIA Y COMERCIO
DIVISIÓN DE NUEVAS CREACIONES
E. S. D.

Re: Expediente No. 02.068.644
Solicitud de Patente en nombre de
Johnson & Johnson Consumer Companies, Inc.

Yo, JIMENA ESCOBAR URIBE, identificada como aparece al pie de mi firma, domiciliada en Bogotá, en la Carrera 11 A No. 94-76 Of. 305, obrando como apoderada de la sociedad Johnson & Johnson Consumer Companies, Inc., solicitante de la patente de la referencia, anexo al presente memorial el siguiente documento:

Copia certificada de la solicitud de Patente Número 09/931,703 presentada en Estados Unidos de América el día 16 de agosto de 2001, con la debida traducción de lo pertinente.

A este mismo respecto, debe tenerse en cuenta que en la primera página de la copia en mención la Oficina de Patentes correspondiente certificó la fecha de presentación de esa solicitud, cumpliéndose de esta forma todos y cada uno de los requisitos establecidos en el inciso segundo del artículo 10 de la Decisión 486 de la Comisión de la Comunidad Andina.

Señor Superintendente,

JIMENA ESCOBAR URIBE
C.C.39.779.452 de usaquén
T.P. 68228

ESTADOS UNIDOS DE AMERICA
A TODOS AQUELLOS A QUIENES EL PRESENTE LLEGUE:

DEPARTAMENTO DE COMERCIO DE LOS ESTADOS UNIDOS
Oficina de Patentes y Marcas de los Estados Unidos

Agosto 1, 2002

La presente es para certificar que el anexo es una copia fiel de los registros de la Oficina de Patentes y Marcas de los Estados Unidos, de los documentos de la solicitud de patente identificada más adelante, que cumplieron con los requerimientos para concederse una fecha de presentación de acuerdo con 35 USC 111.

Número de Solicitud: 09/931,703

Fecha de Presentación: Agosto 16 de 2001

Por la autoridad del
Comisionado de Patentes y Marca

(fdo) P. SWAIN
Oficial Certificador
Sello oficial de la Oficina de Patentes y Marcas de los
Estados Unidos de América

LO QUE SE REIVINDICA ES:

1) Una composición detergente humectante que incluye:
   a) Un polímero catiónico.
   b) Un emoliente seleccionado del grupo formado por un diester, un triester o una mezcla obtenida de ellos.
   c) Un emoliente monoester; y
   d) Un surfactante limpiador.

2) La composición de la reivindicación 1 que incluye, basado en el peso total de la composición:
   a) Desde 0.01% hasta 5% de un polímero catiónico;
   b) Desde 0.1% hasta 5% de un emoliente seleccionado del grupo formado por un diester, un triester, o una mezcla de ellos.
   c) Desde 0.1% hasta 5% de un emoliente monoester; y
   d) Desde 0.5% hasta 50% de un surfactante limpiador.

3) La composición de la reivindicación 1 que incluye, basado en el peso total de la composición:
   a) Desde 0.01% hasta 2% de un polímero catiónico;
   b) Desde 1% hasta 2.5% de un emoliente seleccionado del grupo formado por un diester, un triester, o una mezcla de ellos.
   c) Desde 0.5% hasta 3% de un emoliente monoester; y
   d) Desde 5% hasta 15% de un surfactante limpiador.

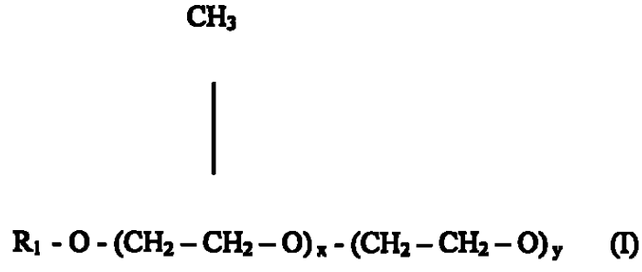
4) La composición de la reivindicación 1 donde el polímero catiónico se selecciona del grupo formado por polisacáridos catiónicos; homopolímeros catiónicos y copolímeros derivados de los ácidos acrílicos o metacrílicos; resinas de celulosa catiónicas; copolímeros catiónicos de cloruro de dimetildialilamonio y acrilamidas y / o ácido arílico; homopolímeros catiónicos de cloruro de dimetildialilamonio; iminas de polialquileno catiónico y etoxipolialquileno; siliconas cuaternizadas y copolímeros y las mezclas obtenidas de ellos.

5) Las composiciones de la reivindicación 4 en donde el polímero catiónico es una goma de guar catiónicas, un éter de hidroxietil celulosa cuaternizada, un copolímero de acrilamida y de los éteres de cloruro de dimetildialilamonio, un copolímero de vinilpirrolidona y vinilpirrolidona ramificada cuaternizada, y los copolímeros y las mezclas obtenidas de ellos.

6) La composición de la reivindicación 5 en donde el polímero catiónico es cloruro de guar hidroxipropiltrimonio, policuaternio 10 y los copolímeros y las mezclas obtenidas de ellos.

7) La composición de la reivindicación 1 en donde el diester o el triester se obtienen de la reacción de un diester o triester reactante que se compone de dos o tres porciones alcoxiladas grasas, con un poliol o poliácido aromático, ramificado o lineal.

8) La composición de la reivindicación 7, en donde las porciones alcoxiladas grasas son representadas por la formula I.



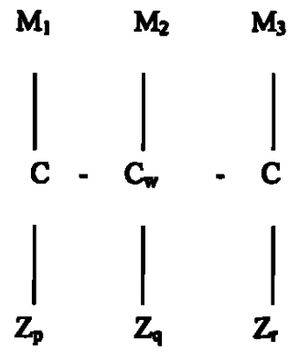
$$R_1 - O - (CH_2 - CH_2 - O)_x - (CH_2 - CH_2 - O)_y \qquad (I)$$

En donde:

$R_1$ es una porción grasa ya sea ramificada, lineal o aromática, sustituida o insustituida, saturada o insaturada con una cadena carbonada de una longitud desde 6 hasta 30 átomos; y

Cada x y y son independientemente cero o un entero desde 1 hasta 200, inclusive con la salvedad de que la suma de x y y en cada porción alcoxilada grasa, es independientemente entre 1 y 300, inclusive, y la suma de todos los x y y en el diester o triester no excede 800.

9) La composición de la reivindicación 7, en donde el poliol o poliácido aromático, ramificado o lineal, es como se establece en la estructura II:




(II)

En donde:

$M_1$, $M_2$, y $M_3$, son independientemente un hidroxi, dos hidrógenos con enlace sencillo o un oxigeno con doble enlace;

$Z_p$, $Z_q$, y $Z_r$ son independientemente hidrógeno o un hidroxi;

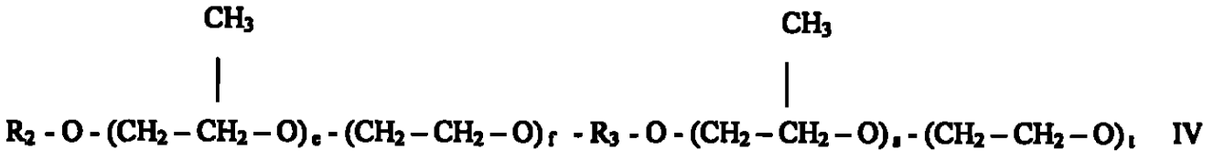
P, q y r son independientemente cero o uno, con la salvedad que la suma de p, q y r es como mínimo 2, y

W es cero o un entero entre 1 y 20, incluso.

10) La composición de la reivindicación 7, en donde el diester es Di- PPG – 2 Myreth – 10 Adipato.

11) La composición de la reivindicación 1, en donde el monoester resulta de la reacción de una porción ácida grasa que tiene una longitud de cadenas de carbonos de desde 4 átomos de carbono hasta 30 átomos de carbono, con un alcohol polihídrico o monohídrico.

12) La composición de la reivindicación 11, en donde el mono ester presenta una estructura establecida por la formula IV:



En donde:

$R_2$ es una porción grasa ya sea ramificada, lineal o aromática, sustituida o insustituida, saturada o insaturada con una cadena carbonada de una longitud desde 4 hasta 30 átomos.

$R_3$ es un alcohol polihídrico o monohídrico ramificado, lineal o aromático, sustituido o insustituido, saturado o insaturado con una cadena carbonada de una longitud desde 3 hasta 30 átomos; y

Cada e, f, s y t son independientemente cero o entero desde 1 hasta 100 incluso, con la salvedad de que la suma de e y f es cero o un entero entre 1 y 200 inclusive, que la suma de s y t es cero o un entero entre 1 y 200, incluso, y que la suma de e, f, s y t no excede 400.

13) La composición de la reivindicación 12 en donde el mono ester es un ester de glicerilo.

14) La composición de la reivindicación 13, en donde el ester de glicerilo es seleccionado del grupo formado por oleato de glicerilo, PEG –7 cocoato de glicerilo y las mezclas de ellos.

15) La composición de la reivindicación 1, en donde el surfactante se selecciona del grupo formado por aniónicos, no iónicos, anfotéricos, betaínas o catiónicos, como también las mezclas de ellos.

16) La composición de la reivindicación 15, en donde el surfactante aniónico se selecciona del grupo formado por alquil sulfatos, alquil eter sulfatos,

sulfosuccinatos, isetionatos, acilamidas, alquileter carboxilatos y alquil fosfatos, y las mezclas de ellos.

17) La composición de la reivindicación 15 en donde el surfactante no iónico se selecciona del grupo formado por ácidos grasos de alcoholes o etoxilatos de amida, etoxilatos de monoglicerida, etoxilatos de ester de sorbitán, alquil poliglicósidos, y las mezclas de ellos.

18) La composición de la reivindicación 15 en donde el surfactante anfotérico se selecciona del grupo formado por alquilimino – diproprionatos, alquilanfoglicinatos (mono o di), alquilanfopropionatos (mono o di), alquilanfoacetatos (mono o di), ácido N-alquil β – aminoproprionico, carboxilato alquil poliamino, imidazolinas fosforiladas y las mezclas de ellos.

19) La composición de la reivindicación 15 en donde el surfactante de betaína se selecciona de grupo formado por alquil betaínas, alquilamino betaínas, alquil sultainas, alquilamido sultainas y las mezclas de ellas.

20) La composición de la reivindicación 15 en donde el surfactante catiónico se selecciona del grupo formado por mono alquil cuaternarios (mono, di o tri), bencil cuaternarios, ester cuaternario, etoxilados cuaternarios, alquil aminas, y las mezclas de ellos.

21) La composición de la reivindicación 15 en donde el surfactante se selecciona del grupo formado por cocoamidopropil betaína, lauroamfodiacetato disodio, lauret sulfato de sodio, decil glucosida, cocoglucosida, POE 80 monolaurato de sorbitan, y mezclas de ellos.

22) La composición de la reivindicación 1 en donde cada monoester, diester y triester poseen un valor de HLB menor que o igual a 11.

23) La composición de la reivindicación 22 en donde cada monoester, diester y triester poseen un valor de HLB mayor que o igual a 4 y menor que o igual a 11.

24) Un producto para el cuidado personal que incluye la composición de la reivindicación 1.

25) El producto de la reivindicación 24 en la forma de una loción, crema, gel, jabón, baño, crema espumosa, tónico o lavado.

26) Un método de utilización de la composición de la reivindicación 1 para impartir un residuo humectante sobre la piel después de que se ha retirado dicha composición de la piel.

27) Un kit que incluye:

a) La composición de la reivindicación 1; y
b) Un implemento de limpieza

28) El kit de la reivindicación 27 en donde el implemento de limpieza es una almohadilla.

29) Un removedor de maquillaje que incluye la composición de la reivindicación 1.

30) Una composición detergente humectante que incluye,, basado en el peso total de la composición:

a) Desde 0.01% hasta 5% de cloruro de guar hidroxipropiltrimonio y/o policuaternio 10
b) Desde 0.1% hasta 5% de di - PPG – 2 Myreth – 10 adipato.
c) Desde 0.1% hasta 5% de gliceril ester; y
d) Desde 0.5% hasta 50% de un surfactante limpiador.

31) La composición de la reivindicación 30 en donde el ester de glicerilo es seleccionado del grupo formado por oleato de glicerilo, PEG-7 cocoato de glicerilo, y mezclas de ellos.

32) Un producto para el cuidado personal que incluye la composición de la reivindicación 30

33) El producto de la reivindicación 32 en forma loción, crema, gel, jabón, baño, crema espumosa, tónico o lavado.

34) Un método de utilización de la composición de la reivindicación 30 para impartir un residuo humectante sobre la piel después de que se ha retirado dicha composición de la piel.

35) Un kit que incluye:

a) La composición de la reivindicación 1; y
b) Un implemento de limpieza

36) El kit de la reivindicación 35 en donde el implemento limpiador es una almohadilla.

37) Un removedor de maquillaje que incluye la composición de la reivindicación 30.

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PA 875030

# THE UNITED STATES OF AMERICA

TO ALL TO WHOM THESE PRESENTS SHALL COME:

**UNITED STATES DEPARTMENT OF COMMERCE**

**United States Patent and Trademark Office**

**August 01, 2002**

**THIS IS TO CERTIFY THAT ANNEXED HERETO IS A TRUE COPY FROM THE RECORDS OF THE UNITED STATES PATENT AND TRADEMARK OFFICE OF THOSE PAPERS OF THE BELOW IDENTIFIED PATENT APPLICATION THAT MET THE REQUIREMENTS TO BE GRANTED A FILING DATE UNDER 35 USC 111.**

**APPLICATION NUMBER:** ***09/931,703***
**FILING DATE:** ***August 16, 2001***

**By Authority of the**
**COMMISSIONER OF PATENTS AND TRADEMARKS**

**P. SWAIN**
**Certifying Officer**

08/17/01

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# UTILITY PATENT APPLICATION TRANSMITTAL

*(only for new nonprovisional applications under 37 CFR 1.53(b))*

| | |
|---|---|
| *Attorney Docket No.* | JBP-561 |
| *First Inventor* | Gregory BOOKER et al. |
| *Title* | MOISTURIZING DETERGENT COMPOSITIONS |
| *Express Mail Label No.* | EL710605864US |

## APPLICATION ELEMENTS

*See MPEP Chapter 600 concerning utility patent application contents.*

ADDRESS TO: Commissioner for Patents
Box Patent Application
Washington, DC 20231

1. ☒ Fee Transmittal Form (e.g., PTO/SB/17)
*(submit an original and a duplicate for fee processing)*
2. ☐ Applicant claims small entity status.
3. ☒ Specification [Total Pages - 30]
*(Preferred arrangement set forth below)*
- Descriptive Title of the Invention
- Cross Reference to Related Applications
- Statement Regarding Fed sponsored R&D
- Reference to sequence listing, a table, or a computer program listing appendix
- Background of the Invention
- Brief Summary of the Invention
- Brief Description of the Drawings *(if filed)*
- Detailed Description
- Claim(s)
- Abstract of the Disclosure

4. ☐ Drawing(s)*(35 USC 113)* [Total Sheets ]
5. Oath or Declaration [Total Pages - 3]
a. ☒ Unexecuted (copy)
b. ☐ Copy from a prior application (37 CFR 1.63(d))
*(for continuation/divisional with Box 18 completed)*
i. ☐ **DELETION OF INVENTOR(S)**
Signed statement attached deleting inventor(s) named in the prior application, see 37 CFR 1.63(d)(2) and 1.33(b).

6. ☐ Application Data Sheet. See 37 CFR 1.76

7. ☐ CD-ROM or CD-R in duplicate, large table or Computer Program (Appendix)

8. Nucleotide and/or Amino Acid Sequence Submission (if applicable, all necessary)
a. ☐ Computer Readable Form (CRF)
b. ☐ Specification Sequence Listing on:
i. ☐ CD-ROM or CD-R (2 copies); or
ii. ☐ paper
c. ☐ Statement verifying identity of above copies

### ACCOMPANYING APPLICATION PARTS

9. ☐ Assignment Papers (cover sheet & document(s))
10. ☐ 37 CFR 3.73(b) Statement ☐ Power of Attorney
*(when there is an assignee)*
11. ☐ English Translation Document *(if applicable)*
12. ☐ Information Disclosure Statement (IDS)/PTO-1449 ☐ Copies of IDS Citations
13. ☐ Preliminary Amendment
14. ☒ Return Receipt Postcard (MPEP 503)
*(Should be specifically itemized)*
15. ☐ Certified Copy of Priority Document(s)
*(if foreign priority is claimed)*
16. ☐ Request and Certifications under 35 U.S.C. 122 (b)(2)(B)(i). Applicant must attach form PTO/SB/35 or its equivalent.
17. ☒ Other (Express Mail Certificate)

18. ☐ If a CONTINUING APPLICATION, *check appropriate box and supply the requisite information below and in a preliminary amendment, or in an Application Data Sheet under 37 CFR 1.76:*
☐ Continuation ☐ Divisional ☐ Continuation-in-Part (CIP) of prior application No.: , filed .
Prior application information: Examiner Group Art Unit:
For CONTINUATION or DIVISIONAL APPS only: The entire disclosure of the prior application, from which an oath or declaration is supplied under Box 5b, is considered a part of the disclosure of the accompanying continuation or divisional application and is hereby incorporated by reference. The incorporation can only be relied upon when a portion has been inadvertently omitted from the submitted application parts.

19. CORRESPONDENCE ADDRESS

☒ Customer Number or Bar Code Label 0000027777 or ☐ Correspondence Address below

Name: Philip S. Johnson, Esq.
Address: Johnson & Johnson
One Johnson & Johnson Plaza
New Brunswick, NJ 08933-7003 USA

20. TELEPHONE CONTACT

Please direct all telephone calls or telefaxes to Michele G. Mangini at:
Telephone: (732) 524-2810 Fax: (732) 524-2808

*21. SIGNATURE OF APPLICANT, ATTORNEY, OR AGENT REQUIRED*

| | |
|---|---|
| NAME | Michele G. Mangini Reg. No. 36,806 |
| SIGNATURE | |
| DATE | August 16, 2001 |

| FEE TRANSMITTAL | Complete If Known | |
|---|---|---|
| | Application Number | |
| | Filing Date | |
| | First Named Inventor | Gregory BOOKER et al. |
| | Group Art Unit | |
| | Examiner Name | |
| | Attorney Docket Number | JBP-561 |

## FEE CALCULATION

CLAIMS AS FILED

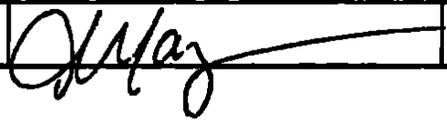
| (1) | (2) | (3) | (4) | (5) |
|---|---|---|---|---|
| FOR: | NUMBER FILED | NUMBER EXTRA | RATE | BASIC FEE $710.00 |
| TOTAL CLAIMS | 37 - 20 = | 17 | x 18.00 | $ 306.00 |
| INDEPENDENT CLAIMS | 2 - 3 = | 0 | x 80.00 | $ 0 |
| MULTIPLE DEPENDENT CLAIMS | ☐ | N/A | $270.00 | $ 0 |
| | | | TOTAL FEES | $1016.00 |



## METHOD OF PAYMENT

☒ Please charge Deposit Account No. 10-0750/JBP-561/MGM in the amount of $1,016.00. Three copies of this sheet are enclosed.

☒ The Commissioner is hereby authorized to charge any additional fees which may be required in connection with the filing of this communication, or credit any overpayment, to Account No. 10-0750/JBP-561/MGM. Three copies of this sheet are enclosed.

| SUBMITTED BY: | | | Complete (if applicable) |
|---|---|---|---|
| Typed or Printed Name | Michele G. Mangini | | Reg. No. 36,606 |
| Signature |  | Date: 8/16/01 | Deposit Account No. 10-0750 |

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DOCKET NO. JBP-561

IN THE UNITED STATES
PATENT AND TRADEMARK OFFICE

Applicant: Gregory BOOKER et al.

For : MOISTURIZING DETERGENT COMPOSITIONS

09931703 .081501

Express Mail Certificate

"Express Mail" mailing number: EL710605884US

Date of Deposit: August 16, 2001

I hereby certify that this complete application, including 30 specification pages with 37 claims, transmittal (2 pp.), and unexecuted Declaration and Power of Attorney, is being deposited with the United States Postal Service "Express Mail Post Office to Addressee" service under 37 CFR 1.10 on the date indicated above and is addressed to the Commissioner for Patents, Box Patent Applications, Washington, D.C. 20231.

An executed Combined Declaration and Power of Attorney will be submitted to the United States Patent and Trademark Office upon receipt of the U.S. Serial Number for this patent application.

Karen Hall Morgan
(Typed or printed name of person mailing paper or fee)

Karen Hall Morgan
(Signature of person mailing paper or fee)

# MOISTURIZING DETERGENT COMPOSITIONS

## BACKGROUND OF THE INVENTION

### 1. Field Of The Invention

The present invention relates to a mild moisturizing detergent composition having superior cleansing and moisturizing performance as well as low skin and ocular irritancy effects.

### 2. Description Of The Prior Art

Historically, moisturizing cleansers have incorporated oils or silicones as the primary means for providing moisturization to hair and skin. See, e.g., U.S. Patent No. 5,085,857 (silicone gums); and U.S. Patent No. 6,194,364 (nonpolar oils or silicones in cleansing emulsion). However, because such ingredients tend to reduce the viscosity of the product and suppress its foamability, these moisturizing cleansers are not aesthetically preferred by customers.

One known method for overcoming these deleterious effects of the oils and silicones is to increase the concentration of the surfactants in the cleansing product. Although the resulting products possess the high foaming aesthetics preferred by customers, such products disadvantageously are not mild, do not effectively deposit the silicone and oil onto the skin, and further enhance the drying of the skin. Attempts have been made to overcome the detrimental effects of oils and silicones in a cleansing system by separating the oils and silicones from the cleansing system. See e.g., U.S. Patent No. 5,612,307. While this approach may minimize the aforementioned negative effects associated with oils and silicones, it created an additional need for a two compartment packaging, which is not only expensive but also complicated to manufacture.

Therefore, there is a need for a moisturizing detergent that not only provides superior skin moisturization, but also is capable being viscosified easily, provides consumer acceptable levels of foam, and does not require complicated packaging. There is further a need for such a moisturizing detergent that would not compromise the mildness and safety properties of the overall cleansing composition.

## SUMMARY OF THE INVENTION

It has been discovered that the aforementioned objectives can be achieved by the moisturizing detergent composition of the present invention comprising, consisting of, and/or consisting essentially of:

a. a cationic polymer;

b. an emollient selected from the group consisting of a diester, a triester, or a mixture thereof;

c. a monoester emollient; and

d. a cleansing surfactant.

Another embodiment of the present invention is directed to a moisturizing detergent composition comprising, consisting of, and/or consisting essentially of , based upon the total weight of the composition,

a. from about 0.01 percent to about 5 percent of guar hydroxypropyltrimonium chloride and/or polyquaternium 10;

b. from about 0.1 percent to about 5 percent of di-PPG-2 myreth-10 adipate;

c. from about about 0.1 percent to about 5 percent of a glyceryl ester; and

d. from about 0.5 percent to about 50 percent a cleansing surfactant.

We have unexpectedly found that the moisturizing detergent compositions of the present invention not only provide superior skin cleansing and moisturization, but also are capable of viscosity building and foam boosting without compromising the mildness and safety properties of the overall cleansing composition.

## DETAILED DESCRIPTION OF PREFERRED EMBODIMENTS

The moisturizing detergent composition of the present invention is comprised of, consists of, and/or consists essentially of, based upon the total weight of the composition, from about 0.01 percent to about 5 percent, e.g. from about 0.01 percent to about 3 percent or from about 0.01 percent to about 2 percent of a cationic polymer; from about 0.1 percent to about 5 percent, e.g. from about 0.5 percent to about 3 percent, or from about 0.1 percent to about 2.5 percent of an emollient selected from the group consisting of a diester, a triester, or a mixture thereof; from about 0.1 percent to about 10 percent, e.g. from about 0.5 percent to about 5 percent or from about 0.75 percent to about 3 percent of a monoester emollient; and from about 0.5 percent to about 50 percent, e.g. from about 5 percent to about 15 percent, of a cleansing surfactant.

Cationic polymers that are suitable for use in the composition of the present invention include, but are not limited to those having a high molecular weight ranging from about 2,000 to about 5,000,000, e.g. from about 5,000 to about 3,000,000 or from about 100,000 to about 1,000,000.

Representative classes of suitable cationic polymers include, but are not limited to cationic polysaccharides; cationic homopolymers and copolymers derived from acrylic and or methacrylic acid; cationic cellulose resins; cationic copolymers of dimethyldiallylammonium chloride and acrylamide and/or acrylic acid; cationic homopolymers of dimethyldiallylammonium chloride; cationic polyalkylene and ethoxypolyalkylene imines; quaternized silicones and copolymers and mixtures thereof.

For example, such cationic polymers include the cationic guar gums such as guar hydroxypropyltrimonium chloride, which is commercially available from Rhodia Incorporated, under the tradename, "Jaguar C17;" quaternized hydroxy ethyl cellulose ethers, which are commercially available from Amerchol Corporation under the tradename, "Ucare Polymer JR 400:" copolymers of acrylamide and dimethyldiallylammonium chloride ethers, which are also known as polyquaternium 7 and are commercially available from the McIntyre Group Ltd. under the tradename, "Mackernium 007" or from Allied Colloids under the tradename "Salcare SC10;" copolymers of vinylpyrrolidone and quaternized branched vinylpyrrolidone, which are commercially available from BASF Corporation under the tradename, "Luviquat Care;" Polyquaternium-6, which is available commercially from Allied Colloids under the tradename, "Salcare SC30;" and copolymers and mixtures thereof.

Diester or triester emollients suitable for use in the present invention may be made via the known reaction of fatty alkoxylated esters with a straight, branched or aromatic polyol or poly acid to form a diester or triester of a straight, branched or aromatic polyol or poly acid. The diester or triester reactant is comprised of two or three fatty alkoxylated moieties, respectively, having the structure set forth in formula I.:

$$R_1\text{-}O\text{-}(CH_2\text{-}CH_2\text{-}O)_x\text{-}(CH_2\text{-}\underset{\displaystyle CH_3}{\underset{|}{CH}}\text{-}O)_y \qquad (I.)$$

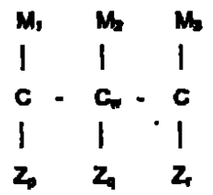
wherein:

$R_1$ is a saturated or unsaturated, substituted or unsubstituted, straight, branched, or aromatic fatty moiety having a carbon chain length of from about 6 to about 30 atoms; and

Each x and y are independently zero or an integer from 1 to 200, inclusive, with the proviso that the sum of x and y in each fatty alkoxylated moiety is independently between 1

and 300, inclusive, and the sum of all xs and ys in the diester or triester does not exceed 600.

The straight, branched, or aromatic polyol or polyacid is of the formula set forth in structure II.:



II.

Wherein:

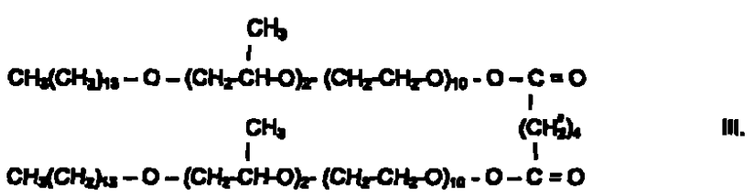
$M_1$, $M_2$, and $M_3$ are independently a hydroxy, two single bonded hydrogens, or a double bonded oxygen;

$Z_p$, $Z_q$, and $Z_r$ are independently hydrogen or a hydroxy;

p, q, and r are independently zero or one, with the proviso that the sum of p + q + r is at least 2; and

w is zero or an integer between 1 and 20, inclusive.

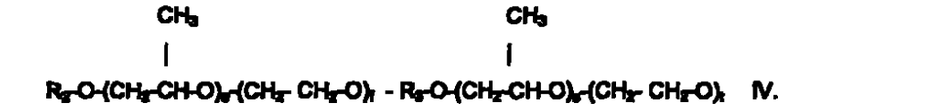
One suitable diester is Di-PPG-2 Myreth-10 Adipate, which is commercially available from Croda, Incorporated under the tradename, "Cromollient SCE," and has the structure set forth in formula III.:



III.

Monoester emollients suitable for use in the present invention include the esters made via the known reaction of a straight, branched or aromatic fatty acid having from about 4 carbon atoms to about 30 carbon atoms with a straight, branched or aromatic monohydric or polyhydric alcohol. If desired, the monohydric or polyhydric alcohol may be alkoxylated

using known methods to improve its water solubility. The resulting monoester is of the structure set forth in formula IV.:



Wherein:

$R_2$ is a saturated or unsaturated, substituted or unsubstituted straight, branched, or aromatic fatty moiety having a carbon chain length of from about 4 to about 30 atoms;

$R_3$ is a saturated or unsaturated, substituted or unsubstituted, straight, branched, or aromatic monohydric or polyhydric alcohol having a carbon chain length from about 3 atoms to about 30 atoms; and

Each e, f, s, and t are independently zero or integers from 1 to 100, inclusive, with the proviso that the sum of e and f is zero or an integer between 1 and 200, inclusive, that the sum of s and t is zero or an integer between 1 and 200, inclusive, and that the sum of e, f, s, and t does not exceed 400.

Examples of monoesters suitable for use in the present invention include the glyceryl esters, such as glyceryl oleate, which is commercially available from the Goldschmidt Chemical Corporation under the tradename, "Tegin O;" PEG-7 Glyceryl Cocoate, which is commercially available from Croda Incorporated under the tradename, "Glycerox HE;" and mixtures thereof.

In one embodiment, the HLB value of one or more of the di-/tri-ester emollients and monoester emollients is less than about 11, e.g. from about 2 to about 11 or from about 4 to about 11. In another embodiment, all of the di-/tri-ester emollients and the monoester emollients have an HLB value of less than about 11, e.g. from about 2 to about 11 or from about 4 to about 11.

Surfactants suitable for use in the present invention include those which are anionic, nonionic, amphoteric, betaine, or cationic, as well as mixtures thereof.

Classes of anionic surfactants useful in this invention include the alkyl sulfates, alkyl ether sulfates, sulfosuccinates, isethionates, acyl amides, alkyl ether carboxylates and alkyl phosphates, wherein the alkyl group has from about 6 carbon atoms to about 30 carbon atoms, with about 10 to about 14 carbon atoms being preferred.

Types of nonionic surfactants that are suitable for use in this invention include the fatty alcohol acid or amide ethoxylates, monoglyceride ethoxylates, sorbitan ester ethoxylates and alkyl polyglycosides.

Classes of amphoteric surfactants that are suitable for use in this invention include alkylimino-diproprionates, alkylamphoglycinates (mono or di), alkylamphopropriontes (mono or di), alkylamphoacetates (mono or di), N-alkyl β-aminoproprionic acids, alkylpolyamino carboxylates, and phosphorylated imidazolines.

Types of betaines that are suitable for use in this invention include alkyl betaines, alkylamido betaines, alkyl sultaines and alkylamido sultaines, wherein the alkyl group has from about 6 carbon atoms to about 30 carbon atoms, with about 10 to about 14 carbon atoms being preferred.

Classes of cationic surfactants that are suitable for use in this invention include alkyl quaternaries (mono, di, or tri), benzyl quaternaries, ester quaternaries, ethoxylated quaternaries, alkyl amines, and mixtures thereof, wherein the alkyl group has from about 6 carbon atoms to about 30 carbon atoms, with about 8 to about 22 carbon atoms being preferred.

The moisturizing cleanser compositions of the present invention may also include one or more optional ingredients nonexclusively including a pearlescent or opacifying agent, a thickening agent, humectants, chelating agents, and additives which enhance their appearance, feel and fragrance, such as colorants, fragrances, preservatives, pH adjusting agents, and the like. The pH of the mild cleansing compositions of this invention is preferably maintained in the range of from about 5 to about 7.5, and more preferably from about 5.5 to about 7.0.

Commercially available pearlescent or opacifying agents which are capable of suspending water insoluble additives and/or which tend to indicate to consumers that the resultant product is a moisturizing cleanser are suitable for use in this invention. The pearlescent or opacifying agent may be present in an amount, based upon the total weight of the composition, of from about 1 percent to about 10 percent, preferably from about 1.5 percent to about 7 percent, and more preferably, from about 2 percent to about 5 percent.

Examples of suitable pearlescent or opacifying agents include, but are not limited to mono or diesters of (a) fatty acids having from about 18 to about 22 carbon atoms and (b) either ethylene or propylene glycol; mono or diesters of (a) fatty acids having from about 16 to about 22 carbon atoms (b) a polyalkylene glycol of the formula: $HO-(JO)_a-H$, wherein J is an alkylene group having from about 2 to about 3 carbon atoms; and a is 2 or 3;fatty

alcohols containing from about 16 to about 22 carbon atoms; fatty esters of the formula: $KCOOCH_2L$, wherein K and L independently contain from about 15 to about 21 carbon atoms; inorganic solids insoluble in the shampoo composition, and mixtures thereof

The pearlescent or opacifying agent may be introduced to the mild cleansing composition as a pre-formed, stabilized aqueous dispersion, such as that commercially available from Henkel Corporation of Hoboken, New Jersey under the tradename, "Euperlan PK-3000." This material is a combination of glycol distearate (the diester of ethylene glycol and stearic acid), Laureth-4 ($CH_3(CH_2)_{10}CH_2(OCH_2CH_2)_4OH$) and cocamidopropyl betaine and preferably is in a weight percent ratio of from about 25 to about 30: about 3 to about 15: about 20 to about 25, respectively.

Commercially available thickening agents, which are capable of imparting the appropriate viscosity to the mild cleansing compositions are suitable for use in this invention. If used, the thickener should be present in the shampoo compositions in an amount sufficient to raise the Brookfield viscosity of the composition to a value of between about 500 to about 10,000 centipoise. Examples of suitable thickening agents nonexclusively include: mono or diesters of 1) polyethylene glycol of formula: $HO-(CH_2CH_2O)_zH$, wherein z is an integer from about 3 to about 200; and 2) fatty acids containing from about 16 to about 22 carbon atoms; fatty acid esters of ethoxylated polyols; ethoxylated derivatives of mono and diesters of fatty acids and glycerine; hydroxyalkyl cellulose; alkyl cellulose; hydroxyalkyl alkyl cellulose; and mixtures thereof. Preferred thickeners include polyethylene glycol ester, and more preferably PEG-150 distearate which is available from the Stepan Company of Northfield, Illinois or from Comiel, S.p.A. of Bologna, Italy under the tradename, "PEG 6000 DS".

Commercially available humectants, which are capable of providing moisturization and conditioning properties to the mild cleansing composition, are suitable for use in the present invention. The humectant may be present in an amount of from about 0 percent to about 10 percent, preferably from about 0.5 percent to about 5 percent, and more preferably from about 0.5 percent to about 3 percent, based on the overall weight of the composition. Examples of suitable humectants nonexclusively include: 1) water soluble liquid polyols selected from the group comprising glycerine, propylene glycol, hexylene glycol, butylene glycol, dipropylene glycol, and mixtures thereof; 2)polyalkylene glycol of the formula: $HO-(R''O)_b-H$, wherein R'' is an alkylene group having from about 2 to about 3 carbon atoms and b is an integer of from about 2 to about 10; 3) polyethylene glycol ether of methyl glucose of formula $CH_3-C_6H_{10}O_5-$

$(OCH_2CH_2)_c$-OH, wherein c is an integer from about 5 to about 25; 4) urea; and 5) mixtures thereof, with glycerine being the preferred humectant.

Examples of suitable chelating agents include those which are capable of protecting and preserving the compositions of this invention. Preferably, the chelating agent is ethylenediamine tetraacetic acid ("EDTA"), and more preferably is tetrasodium EDTA, available commercially from Dow Chemical Company of Midland, Michigan under the tradename, "Versene 100XL" and is present in an amount, based upon the total weight of the composition, from about 0 to about 0.5 percent, and preferably from about 0.05 percent to about 0.25 percent.

Suitable preservatives include Quaternium-15, available commercially as "Dowicil 200" from the Dow Chemical Corporation of Midland, Michigan, and are present in the composition in an amount, based upon the total weight of the composition, from about 0 to about 2.0 percent, and preferably from about 0.05 percent to about 0.10 percent.

The compositions of the present invention are preferably used in personal care products such as shampoos, washes, baths, gels, lotions, creams, and the like.

In one embodiment, the composition may be incorporated into a bath fizz ball, such as those described in U.S. Patent Nos. 4,650,661; 4,686,707; and 4,002,758; which are incorporated herein by reference.

The composition of the present invention may be used on the body in conjunction with any personal cleansing implement known in the art such as a washcloth, a mesh or apertured film, pouf, sponge, brush and the like. In one embodiment, the composition may be marketed together with one or more of such implements in a kit.

In one embodiment, the compositions of the present invention are "substantially free" of oils or silicones. As used herein, "substantially free" shall mean that the moisturizing cleanser composition contains, based upon the total weight of the composition, less than about 1 percent, for example, less than about 0.5 percent or less than about 0.2 percent oils and/or silicones.

The invention illustratively disclosed herein suitably may be practiced in the absence of any component, ingredient, or step which is not specifically disclosed herein. Several examples are set forth below to further illustrate the nature of the invention and the manner of carrying it out. However, the invention should not be considered as being limited to the details thereof.

**EXAMPLES**

**Example 1: *Preparation of Moisturizing Detergent Composition***

The moisturizing detergent composition of Example 1 was prepared according to the materials and amounts listed in Table 1.:

Table 1

| Tradename / Supplier | INCI Name | %w/w |
|---|---|---|
| Plantaren 2000 from Cognis Corporation | Decyl Glucoside | 0.8 |
| Lamesoft P065 from Cognis Corporation | | 3.00 |
| | Water | 1.05 |
| | Coco glucoside | 1.05 |
| | Glyceryl oleate | 0.9 |
| PEG 6000 DS from Stepan Company | PEG 150 distearate | 1.4 |
| Atlas G4280 from Uniqema | POE 80 sorbitan laurate | 5.0 |
| Water | Deionized water | 59.87 |
| Polymer JR from Amerchol Corporation | Polyquaternium 10 | 0.12 |
| Glucquat 125 from Amerchol Corporation | Lauryl methyl gluceth-10 hydroxypropyldimonium chloride | 1.00 |
| Tegobetaine L-7 (30%) from Goldschmidt Chemical Corporation | Cocamidopropyl betaine | 12.00 |
| Monateric 949J from Uniqema | Disodium lauroamphodiacetate | 2.00 |
| Polyox WSR-205 from Amerchol Corporation | PEG 14-M | 0.10 |
| Glycerin from Cognis Corporation | Glycerin | 0.50 |
| Cromollient SCE from Croda Inc. | DI-PPG-Myreth-10-Adipate | 1.00 |
| Lipovol J from Lipo Chemicals, Inc. | Jojoba oil | 0.1 |
| Drakeol 7 from Penreco | Mineral oil | 0.10 |
| Fragrance | Fragrance | 0.50 |
| Dowicil 200 from Dow Chemical Company | Quaternium 15 | 0.05 |
| Versene 100XL from Dow Chemical | Tetrasodium EDTA | 0.48 |

| | | |
|---|---|---|
| Company | | |
| Euperlan PK 3000 from Cognis Corporation | | 2.00 |
| | Cocamidopropyl betaine | |
| | Glycol distearate | |
| | Laureth-4 | |
| Citric acid (20%) | Citric acid | As needed |

The composition of Example 1 was prepared as follows:

The following Pre-Mixtures were prepared:

Pre-Mixture 1: PEG-14M and glycerin were mixed in an independent container under ambient conditions.

Pre-Mixture 2: DI-PPG-2-myreth-10-adipate, mineral oil, and jojoba oil were mixed in an independent container under ambient conditions.

Pre Mixture 3: The fragrance and 1 part of POE-80 sorbitan laurate were mixed in an independent container under ambient conditions.

Component amounts in this procedure are given in terms of parts by weight of active to prepare 100 parts of the cleansing composition.

The decyl glucoside, cocoglucoside, and glyceryl oleate were mixed in an independent container under ambient conditions until the resulting solution was clear. The solution was then heated to a temperature of about 50 °C to 55 °C with constant stirring. PEG 150 distearate was added thereto with stirring at constant temperature until the PEG 150 distearate was dissolved therein. As the resulting solution was cooled to 40° C, the following components were added thereto sequentially with stirring, and the solution was homogeneous before the addition of each subsequent component: (4 parts) POE-80 sorbitan laurate; (59.67 parts) water; polyquaternium-10; lauryl methyl gluceth-10 hydroxypropyldimonium chloride; cocamidopropylbetaine; disodium lauroamphodiacetate; PEG-14M/glycerin pre-mix; and DI-PPG-2-myreth-10-adipate/mineral oil/jojoba oil pre-mix.

After the resulting mixture was cooled to a temperature of about 40° C, the following components were added thereto sequentially, and the solution was homogeneous before the addition of each subsequent component: fragrance/POE-80 sorbitan laurate premixture, quaternium-15, tetrasodium EDTA, glycol distearate, and laureth - 4. After sodium chloride was added thereto, the pH of the resulting solution was adjusted with citric acid to about 6.8.

The remaining water was added thereto with stirring until the final solution was homogeneous.

The viscosity of the resulting solution was 1300 cps as measured by a Brookfield DV-I+ Viscometer using a # 2 spindle and speed of 6 rpm.

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**Example 2: *Preparation of Moisturizing Detergent Composition***

The moisturizing detergent composition of Example 2 was prepared according to the materials and amounts listed in Table 2.:

Table 2

| Tradename / Supplier | INCI Name | %w/w |
|---|---|---|
| Lamesoft P065 | | 3.00 |
| | Water | 1.05 |
| | Coco glucoside | 1.05 |
| | Glyceryl oleate | 0.9 |
| PEG 6000 DS | PEG 150 distearate | 1.0 |
| Alias G4280 | POE 80 sorbitan laurate | 5.0 |
| Water | Deionized water | 65.69 |
| Polymer JR | Polyquaternium 10 | 0.10 |
| Glucquat 125 | Lauryl methyl gluceth-10 hydroxypropyldimonium chloride | 1.00 |
| Tegobetaine L-7 (30%) | Cocamidopropyl betaine | 8.00 |
| Monateric 949J | Disodium lauroamphodiacetate | 2.00 |
| Polyox WSR-205 | PEG 14-M | 0.05 |
| Glycerin | Glycerin | 0.50 |
| Cromollient SCE | DI-PPG-Myreth-10-Adipate | 1.00 |
| Jaguar C17 from Rhodia, Inc | Guar hydroxypropyltrimonium chloride | 0.1 |
| Dowicil 200 | Quaternium 15 | 0.05 |
| Versene 100XL | Tetrasodium EDTA | 0.508 |
| Rhodapex from Rhodia, Inc. | Sodium Laureth-2 Sulfate | 10.00 |
| Euperlan PK 3000 | | 2.00 |
| | Cocamidopropyl betaine | |
| | Glycol distearate | |

| | | |
|---|---|---|
| | Laureth-4 | |
| Sodium hydroxide solution (20%) | Sodium hydroxide | As needed |
| Citric acid (20%) solution | Citric acid | As needed |

The composition of Example 2 was prepared as follows:

The following Pre-Mixtures were prepared:

Pre-Mixture 1: PEG-14M and glycerin were mixed in an independent container under ambient conditions.

Component amounts in this procedure are given in terms of parts by weight of active to prepare 100 parts of the cleansing composition.

Guar hydroxypropyltrimonium chloride and polyquaternium 10 were added to a beaker containing (65.59 parts) water with stirring under ambient conditions until dissolved. After heating the solution to 50° C, PEG 150 distearate was stirred therein at constant heat until dissolved. As the resulting solution was cooled to 40 °C, the lauryl methyl glucath-10 hydroxypropyldimonium chloride was added thereto with mixing until homogeneous. The following components were then added thereto sequentially with stirring, and the solution was homogeneous before the addition of each subsequent component: POE-80 sorbitan laurate; cocamidopropylbetaine; disodium lauroamphodiacetate; sodium laureth-2 sulfate; coco glucoside and glyceryl oleate; DI-PPG-2-myreth-10-adipate; and PEG-14M/glycerin pre-mix.

After the resulting mixture was cooled to a temperature of about 40 °C, the following components were added thereto sequentially, and the solution was homogeneous before the addition of each subsequent component: quaternium-15, tetrasodium EDTA, glycol distearate and laureth - 4. The pH of the resulting solution was adjusted with citric acid and sodium hydroxide to about 6.25 to about 7.25. The remaining water was added thereto with stirring until the final solution was homogeneous.

The viscosity of the resulting solution was 16,500 cps as measured by a Brookfield DV-I+ Viscometer using a # 2 spindle and speed of 1.5 rpm.

Example 3: *Preparation of Moisturizing Detergent Composition*

The moisturizing detergent composition of Example 3 was prepared according to the materials and amounts listed in Table 3.:

Table 3

| Tradename / Supplier | INCI Name | %w/w |
|---|---|---|
| Plantaren 2000 | Decyl Glucoside | 8.00 |
| Glycerox HE from Croda Inc. | PEG 7 glyceryl cocoate (having HLB of 10.6) | 1.00 |
| PEG 6000 DS | PEG 150 distearate | 1.4 |
| Atlas G4280 | POE 80 sorbitan laurate | 5.0 |
| Water | Deionized water | 61.67 |
| Polymer JR | Polyquaternium 10 | 0.12 |
| Glucquat 125 | Lauryl methyl gluceth-10 hydroxypropyldimonium chloride | 1.00 |
| Tegobetaine L-7 (30%) | Cocamidopropyl betaine | 12.00 |
| Monateric 949J | Disodium lauroamphodiacetate | 2.00 |
| Polyox WSR-205 | PEG 14-M | 0.10 |
| Glycerin | Glycerin | 0.50 |
| Cromollient SCE | DI-PPG-Myreth-10-Adipate | 1.00 |
| Lipovol J | Jojoba oil | 0.1 |
| Drakeol 7 | Mineral oil | 0.10 |
| Fragrance | Fragrance | 0.50 |
| Dowicil 200 | Quaternium 15 | 0.05 |
| Versene 100XL | Tetrasodium EDTA | 0.46 |
| Euperlan PK 3000 | | 2.00 |
| | Cocamidopropyl betaine | |
| | Glycol distearate | |
| | Laureth-4 | |
| Sodium chloride | Sodium chloride salt | 5.00 |
| Citric acid (20%) | Citric acid | As needed |

The composition of Example 3 was prepared as follows:

The following Pre-Mixtures were prepared:

Pre-Mixture 1: 4 parts POE 80 sorbitan laurate, decyl glucoside, and PEG 7 glyceryl cocoate were mixed in an independent container under ambient conditions until clear.

Pre-Mixture 2: DI-PPG-2-myreth-10-adipate, mineral oil, and jojoba oil were mixed in an independent container under ambient conditions.

Pre Mixture 3: The fragrance and 1 part of POE-80 sorbitan laurate were mixed in an independent container under ambient conditions.

*Pre-Mixture 4: The PEG 14M and glycerin were mixed in an independent container* under ambient conditions.

Component amounts in this procedure are given in terms of parts by weight of active to prepare 100 parts of the cleansing composition.

After heating the pre-mixture 1 to a temperature of about 50° C to 55° C with constant stirring, PEG 150 distearate was added thereto with stirring at constant temperature until the PEG 150 distearate was dissolved therein. After the resulting solution was removed from the heat, the following components were added thereto sequentially with stirring, and the solution was homogeneous before the addition of each subsequent component: (61.67 parts) water; polyquaternium-10; lauryl methyl gluceth-10 hydroxypropyldimonium chloride; cocamidopropylbetaine; disodium lauroamphodiacetate; PEG-14M/glycerin pre-mix; and DI-PPG-2-myreth-10-adipate/mineral oil/jojoba oil pre-mix.

After the resulting mixture was cooled to a temperature of about 40 °C, the following components were added thereto sequentially, and the solution was homogeneous before the addition of each subsequent component: fragrance/POE-80 sorbitan laurate premixture, quaternium-15, tetrasodium EDTA, and glycol distearate/ laureth - 4 mixture. After sodium chloride was added thereto, the pH of the resulting solution was adjusted with citric acid to about 6.8. The remaining water was added thereto with stirring until the final solution was homogeneous.

The viscosity of the resulting solution was 405 cps as measured by a Brookfield DV-I+ Viscometer using a # 2 spindle and speed of 6 rpm.

**Example 4: *Preparation of Moisturizing Detergent Composition***

The moisturizing detergent composition of Example 4 was prepared in accordance with the procedure set forth in Example 3 using the materials and amounts listed in Table 3, with the exception that the "Glycerox HE" was substituted with an equivalent amount of PEG

6 caprylic/capric glycerides, which is commercially available from Croda Incorporated under the tradename, "Glycerox 767" and has an HLB value of 13.2.

The viscosity of the resulting solution was 145 cps as measured by a Brookfield DV-I+ Viscometer using a # 2 spindle and speed of 6 rpm.

**Example 5:: *Comparison of Moisturizing Detergent Composition With Commercial Products***

Three hundred female consumer panelists who have previously used moisturizing cleanser compositions participated in a blind comparative study between the composition produced in accordance with Example 2, as well as five other commercially available cleansers: 1) "Cetaphil_Gentle Skin Cleanse available from Galderma Laboratories, Incorporated; 2) "Aveeno Baby Cleanser" available from Johnson & Johnson Consumer Companies, Inc., 3) "Purpose Gentle Cleansing Wash" available from Johnson & Johnson Consumer Companies, Inc., 4) "Oil of Olay Sensitive Skin Foaming Facial Wash" available from the Procter and Gamble Company; and 5) "RoC Enydrial Foaming Gel" available from Johnson & Johnson Consumer Companies, Inc., .

During the study, the panelists were divided into six groups of 50 participants. Each group was assigned one of the six above mentioned products, then asked to wash their faces with that product at least 5 times a week for a total of 2 weeks. At the end of the study, each panelist completed a questionnaire regarding the benefits of using the product. The results of the questionnaires are set forth in Tables 4, 5, and 6 below:

Table 4 Key Di ecture From Panelist Questionnaires

| | NON-FOAMING | | FOAMING | | | |
|---|---|---|---|---|---|---|
| | Cetaphil (A) | veeno Baby Cleanser (B) | Moisturizing Cleanser of Ha (C) | Purpose Gentle Cleansing Wash (D) | Oil of Ole Foaming Face Wash (E) | ROC Enfrial Foaming Gel (F) |
| KRY DIRECTIONALS ON QUESTIONNAIRE: | | | | | | |
| CONSISTENCY Just About Right" | 36% | 60%A | 86%A Bd | 72%A | 78%Ab | 76%Ab |
| AMOUNT OI LATHER 11 pt | .96 | 3.50 | 6.70ABE | 6.10AB | 5.68AB | 6.58ABa |
| AMOUNT OF LATHER ust About Right" | 32% | 42% | 72%ABd | 54%A | 60%AB | 62%AB |
| LATHER CONSISTENCY 0 pt | n/a | n/a | 6.80DbJ | 5.50 | 5.52 | 5.48 |
| ING OF LATHER CONSISTENCY 5pt | n/a | n/a | .06d | 3.52 | .68 | 3.66 |
| LATHER TEXTURE 10 pt | n/a | n/a | .04D | 6.20 | 6.66 | 6.50 |
| LIKING OF LATHER TEXTURE pt | n/a | n/a | 94 | .62 | 3.66 | 76 |
| EASE OF RINSING 5 pt | 4. | .20 | 4.38 | .20 | 16 | 4.04 |
| EASE OF WIPING 5 pt | 4.20 | 4.20 | n/a | n/a | n/a | n/a |
| OISTURIZED SKIN FEEL AFTER USE<br>ery oisturized<br>Somewhat Moisturized<br>Not All Moisturized | 8%D<br>44%<br>8% | 36%<br>54%<br>10% | 40%<br>50%<br>10% | 26%<br>60%<br>14% | 36%<br>56%<br>8% | 42%d<br>46%<br>2% |
| DRY/TK'HT SKIN I'LEL AFTER USE<br>ery Dry or Tight<br>Somewhat Dry or Tight<br>Not At All Dry or Tight | 0%<br>2%<br>88%aDe | 2%<br>6%<br>52%CDEf | 4%<br>22%B<br>74% | 4%<br>28%AB<br>68% | 4%<br>20%B<br>74% | 2%<br>20%B<br>8% |

Table 4 (cont.)

| | NON-FOAMING | | FOAMING | | | |
|---|---|---|---|---|---|---|
| | Cetaphil (A) | vesno Baby Cleanser (B) | Moisturizing Cleanser of Ex. 2 (C) | Purpose Gentle Cleansing Wash (D) | Oi of Olay Foaming Face Wash (E) | ROC Retinol Foaming Gel (F) |
| CLEANSER USED TO REMOVE M KEUP<br>Yes<br>No | 80%a<br>20% | 78%a<br>22% | 74%<br>26% | 74%<br>26% | 62%<br>38%ab | 72%<br>28% |
| REMOVING MAKEUP 10 pt | 7.38 | 97 | 8.51ABE | 8 03B | 7.58 | 8 42ABc |
| | (n=40) | (n=39) | (n=37) | (n=3 ) | (n=31) | (n=36) |
| EASE O REMOVING MAKEUP 10 pt | .55 | .00 | 8.34AB | 8.05b | 7 84 | .42aB |

Table 5. Panelists Agree Completely/Somewhat" Wi[illegible]ated Benefits

| | NON-FOAMING | | FOAMING | | | |
|---|---|---|---|---|---|---|
| | Cetaphi (A) | vcmo Baby Cleanser (B) | Moisturizing Cleanser of Ba (C) | Purpose Gentle Cleansing Wash (D) | Oil of Olay Foaming ace Wash (E) | ROC Enderal Foaming Gel (F) |
| AGREE COMPLETELY /SOMEWHAT Top Box | | | | | | |
| BND BENEFITS | | | | | | |
| Is an Effective Cleanser | 78% | 74% | 94%ABe | 90%B | 82% | 92%aB |
| Cleans & Moisturizes At The Same Time | 78% | 8% | 88% | 78% | 80% | 86% |
| Cleans Without Drying Skin | 86% | 88% | 90% | 80% | 88% | 86% |
| Leaves Skin Soft & Smooth | 84% | 80% | 88% | 84% | 84% | 88% |
| Does Not Clog Pores | 72% | 80% | 92%AbF | 82% | 82% | 72% |
| Helps Skin Look & Feel Health | 72% | 74% | 94%ABDEF | 78% | 80% | 4% |
| Helps Even Out Blotchy & Uneven Skin Tone | 34% | 54% | 60%A | 52%a | 50% | 48% |
| Leaves Skin Feeling lean | 76% | 72% | 96%ABe | 92%AB | 86%b | 92%AB |
| Leaves Skin Feeling Refreshed | 76% | 72% | 92%ABe | 84% | 80% | 82% |
| Helps Unclog Pores | 52% | 58% | 78%ABdef | 62% | 60% | 60% |
| Smoothes Rough, Uneven Patches | 44% | 48% | 70%ABDE | 50% | 48% | 64%A |
| Helps to Improve Skin Texture | 54% | 60% | 84%A DE | 66% | 62% | 72%a |
| Provides Long Lasting Moisture | 66% | 64% | 82%aBd | 66% | 76% | 72% |
| Soothes Dr Skin | 72% | 64% | 84%BD | 66% | 76% | 82%Bd |
| Adds Moisture Back to The Skin | 68% | 64% | 86%AB | 74% | 74% | 78% |
| AMONG WOMEN WHO USED THE PRODUCT TO REMOVE MAKEUP- | (n=40) | (n=39) | (n=37) | (n=37) | (n=3 ) | (n=36) |
| Removes Makeup Cleanses One Step | 80% | 77% | 100%ABDE | 86% | 87% | 94%aB |
| Removes Foundation or Base Makeup | 88% | 85% | 97%bd | 86% | 90% | 89% |
| Removes Eye Makeup | 70% | 69% | 76% | 76% | % | 83% |

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Table 5 (cont.)

| | NON-FOAMING | | FOAMING | | | |
|---|---|---|---|---|---|---|
| | Cetaphil (A) | vesno Baby Cleanser (B) | Moisturizing Cleanser of Ex. 2 (C) | Purpose Gentle Cleansing Wash (D) | Oi nf hy Foaming Face Wash (E) | ROC Enfrial Foaming Gel (F) |
| AGREE COM LETEL SOMEWHA Top 2 Box | | | | | | |
| PRODUCT CHARACTERISTICS. | | | | | | |
| Is Good for Even Very Dry Skin | 84%d | 80% | 82% | 70% | 78% | 84%d |
| Is Product for Someone In M | 60% | 70% | 86%Abf | 78%a | 78%a | 72% |
| Not Irritating our Skin | 90% | 92% | 98%adf | 90% | 92% | 88% |
| Is Good for Use Everyda | 84% | 90% | 96%Ae | 90% | 86% | 90% |
| Is Pleasant Use | 66% | 78% | 90%AF | 86%Af | 86%A | 70% |
| Has Good Consistency or Thickness | 36% | 62%A | 84%ABf | 80%Ab | 80%Ab | 72%A |
| Is Not Irritating Eyes | 80% | 92%ef | 96%AFEF | 84% | 84% | 78% |
| Rinses Off Easily & Completely | 86% | 82% | 96%aBEF | 88% | 84% | 78% |
| Leaves No Unpleasant Residus On Skin | 82% | 86% | 96%ABE | 94%aBE | 76% | 88% |
| Good For Sensitive Skin | 78% | 70% | 88%Bd | 4% | 82% | 82% |
| Gentle to Skin | 92% | 92% | 96%E | 90% | 84% | 90% |
| Moisturizes Better Than Other Cleansers | 62% | 60% | 84%ABDef | 62% | 68% | 70% |
| Is High Quality Product | 60% | 64% | 88%ABdF | 74% | 76%a | 68% |
| Fragrance Free | 86%cDEF | 76%D | 72%d | 54% | 68% | 64% |
| Wipes Off Easily & Completely | 82% | 84% | n/a | n/a | n/a | n/a |

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Table (cont)

| | NON FOAMING | | FOAMING | | | |
|---|---|---|---|---|---|---|
| | Cetaphi (A) | vasso Baby Cleanser (B) | Moisturizing Cleanser of Ex. 2 (C) | Purpose Gentle Cleansing Wash (D) | Oil of Olay Foaming Face Was (E) | ROC Hydrat Foaming Gel (F) |
| AGREE COMPLETELY/SOMEWHA Top Box | | | | | | |
| END ENEFITS. | | | | | | |
| Is An Effective Cleanser | 48% | 44% | 74%ABEf | 60% | 54% | 56% |
| Cleans & Moisturizes At The Same Time | 36% | 46% | 66%BE | 50% | 46% | 50% |
| Cleans Without Drying Skin | 56% | 56% | 62% | 56% | 54% | 50% |
| Leaves Skin Soft & Smooth | 38% | 50% | 60% | 48% | 38% | 38% |
| Does Not Clog Pores | 42% | 40% | 64%AEF | 56% | 54% | 44% |
| Helps Skin Look & Feel Healthier | 28% | 40% | 64%ABD | 42% | 54%A | 50%A |
| Helps to Even Out Blotchy & Uneven Skin ane | 10% | 24%a | 22% | 16% | 22% | 20% |
| Leaves Skin Feeling Clean | 44% | 44% | 76%ABef | 64%AB | 60% | 60% |
| Leaves Skin Feeling Refreshed | 48% | 46% | 70%AB | 50% | 54% | 54% |
| lelps Unclog Pores | 8% | 32% | 40%Ad | 22% | 28% | 36%A |
| Smoothes Rough, Uneven Patches | 2% | 20% | 38%Abe | 24% | 20% | 30%A |
| Helps to Improve Skin Texture | 22% | 30% | 46%Ad | 8% | 34% | 44%Ad |
| Provides Long Lasting Moisture | 30% | 30% | 48% | 38% | 42% | 40% |
| Soothes Dry Skin | 8% | 38% | 48%A | 44a% | 8% | 44%a |
| Adds Moisture Back to The Skin | 22% | 38a% | 52% | 40a% | 38a% | 46%A |
| AMONG WOMEN WHO USED THIS PRODUCT TO REMOV MAKEUP- | (n=40) | (n=39) | (n=37) | (n=37) | (n=3 ) | (n=36) |
| Removes Makeup Ieanses In One Step | 48% | 38% | 70%AB | 57% | 55% | 56%a |
| Removes Foundation or Base Makeup | 55%B | 31% | 68%B | 59%B | 61%B | 56%B |
| Removes Eye Makeup | 50%b | 28% | 54%B | 49%b | 45% | 50%b |

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Table 1 (cont.

| | NON-FOAMING | | FOAMING | | | |
|---|---|---|---|---|---|---|
| | Cetaphil (A) | vesno Baby Cleanser (B) | Moisturizing Cleanser of Ex. 2 (C) | Purpose Gentle Cleansing Wash (D) | Oil of Olay Foaming Face Wash (E) | ROC Retinol Foaming Gel (F) |
| AGREE COMPLETEL /SOMEWHA Top Box | | | | | | |
| RODUCT CHARACTERISTICS | | | | | | |
| Good for Even Very Dry Skin | 42% | 42% | 56%D | 34% | 40% | 44% |
| Product for Someone Like Me | 36% | 42% | 62%ABD | 36% | 8% | 46% |
| Not Irritating Your Skin | 4% | 62% | 74% | 72% | 72% | 62% |
| Good for Use Everyday | 66% | 62% | 74%f | 74%f | 62% | 58% |
| Pleasant Use | 40% | 52% | 56%f | 54% | 58%aF | 38% |
| Has Good Consistency or Thickness | 8% | 30% | 62%ABD | 38%A | 46%A | 48%A |
| Is Not Irritating to Eyes | 46% | 58% | 68%Af | 68%Af | 54% | 50% |
| Rinses Off Easily & Completel | 58% | 48% | 66%b | 66%b | 38% | 52% |
| Leaves No Unpleasant Residue On Skin | 60% | 52% | 78%aBEF | 70%bF | 54% | 50% |
| Is Good For Sensi ve Skin | 38% | 38% | 62%AB | 50% | 50% | 48% |
| Gentle Skin | 48% | 50% | 72%A | 60% | 62% | 50% |
| Moisturizes Better Than Other Cleansers | 30% | 28% | 42% | 28% | 28% | 34% |
| High Quality Product | 26% | 36% | 54%Ab | 40% | 2%a | 40% |
| Is Fragrance Free | 56%d | 46% | 44% | 38% | 44% | 44% |
| Wipes Off Easily & Completely | 54% | 42% | n/a | n/a | n/a | n/a |

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Table 6. Comparison Brand Used Most Often

| | NON-FOAMING | | FOAMING | | | |
|---|---|---|---|---|---|---|
| | Cetaphil (A) | veeno Baby Cleanser (B) | Moisturizing Cleanser of Ex 2 (C) | Purpose Gentle Cleansing Wash (D) | Ox af Olay Foaming Face Wash (E) | ROC Enfrial Foaming Gel (F) |
| COM RED TO BRAND USED MOST OFTEN | | | | | | |
| LEAVING SKIN SOFT & SMOOTH pt | 3.42d | 3.22 | 3.54 | 3.08 | 3.34 | 3.3 |
| PROVIDING LONG LASTING MOISTI RIZATION 5 PT | 3 24 | 3.20 | 3.56bl | 3.04 | 3.32 | 3.34 |
| LEAVING SKIN FEELING CLEA 5 pt | .08 | 2.92 | 66ABDe | 1 | 3.28b | 3 BaB |
| BEING GOOD FOR EVEN VERY DRY SKIN 5pt | 3.34 | 3 38 | 3 4ebDE | 3 1 | 24 | 3 44 |
| CLEANS NG & MOISTURIZING A THE SAME TIMS 5 pt | 3 48 | 3 28 | 3 82BD | 3.30 | 3.46 | 3.54 |
| RELIEVING DR SKIN 5 pt | 3.28 | 3.30 | 3 72ABDE | 3.08 | 3.22 | 3.42 |
| LEVEL OF SKIN RRIT TION | | | | | | |
| Extremely Irritating | 2% | 0% | 0% | 0% | 0% | 0% |
| ery Irritating | 0% | 0% | 0% | 0% | 2% | 0% |
| Somewhat Irritating | 2% | 0% | 0% | 2% | 2% | 4% |
| Slightly Irri tag | 4% | 2% | 0% | 4% | 4% | 4% |
| Not ll Irritating | 92% | 98% | 100%AdEF | 94% | 92% | 92% |
| UNPLEASAN EYE REACTIONS | | | | | | |
| es | 2% | 2% | 2% | 2% | 4% | 2% |
| No | 98% | 98% | 98% | 98% | 96% | 98% |
| EVIL OF EYE RRIT TION | | | | | | |
| Extremely Irritating | 0% | 0% | 0% | 0% | 0% | 0% |
| ery Irritating | 0% | 0% | 2% | 0% | 2% | 0% |
| Somewhat Irritating | 2% | 2% | 0% | 0% | 0% | 2% |
| Slightly Irritating | 0% | 2% | 2% | 2% | 4% | 2% |
| Not All Irritating | 98% | 96% | 96% | 98% | 94% | 96% |

capital letter represents that the value given for the cleanser of that colum is at 95 degre confidence level with respect to the value given for the cleanser denoted by th capital letter For example, "86% ABd" means that the 86% value is accurate to a 95% confidence level with respect to th values for the cleansers of columns A and B

** lowercase letter represents that the val given for the cleanser of that colum is at 90 degree confidence level with respect to the value given for the cleanser denoted by the capital letter For example "86% ABd" mean that the 86% lue is accurate to a 90% confidence level with respect to the valu for the cleansers of colum d

This Example showed that th moisturizing detergent composition of the present invention was superior with respect to cleansing moisturizing nd improving healthy look nd feel of skin, while remaining very gentle to skin nd eyes This Example further showed that the moisturizing detergent composition of the present invention was an effective eye and face make-up remover

We Claim:

1.) A moisturizing detergent composition comprising:

a. a cationic polymer;

b. an emollient selected from the group consisting of a diester, a triester, or a mixture thereof;

c. a monoester emollient; and

d. a cleansing surfactant.

2.) The composition of claim 1 comprising, based upon the total weight of the composition,

a. from about 0.01 percent to about 5 percent of a cationic polymer;

b. from about 0.1 percent to about 5 percent of an emollient selected from the group consisting of a diester, a triester, or a mixture thereof;

c. from about 0.1 percent to about 5 percent of a monoester emollient; and

d. from about 0.5 percent to about 50 percent of a cleansing surfactant.

3.) The composition of claim 1 comprising, based upon the total weight of the composition,

a. from about 0.01 percent to about 2 percent of a cationic polymer;

b. from about 1 percent to about 2.5 percent of an emollient selected from the group consisting of a diester, a triester, or a mixture thereof;

c. from about about 0.5 percent to about 3 percent of a monoester emollient; and

d. from about 5 percent to about 15 percent of a cleansing surfactant.

4.) The composition of claim 1 wherein the cationic polymer is selected from the group consisting of cationic polysaccharides; cationic homopolymers derived from acrylic and/or methacrylic acid; copolymers derived from acrylic and/or methacrylic acid; cationic cellulose resins; cationic copolymers of dimethyldiallylammonium chloride and acrylamide and/or acrylic acid; cationic homopolymers of dimethyldiallylammonium chloride; cationic polyalkylene imines; cationic ethoxypolyalkylene imines; quaternized silicones; and copolymers and mixtures thereof.

5.) The compositions of claim 4 wherein the cationic polymer is a cationic guar gum, a quaternized hydroxyethyl cellulose ether, a copolymer of acrylamide and

dimethyldiallylammonium chloride ether, a copolymer of vinyl pyrrolidone and quaternized branched vinylpyrrolidone, and copolymers and mixtures thereof.

6.) The composition of claim 5 wherein the cationic polymer is guar hydroxypropyltrimonium chloride, polyquaternium 10, and copolymers and mixtures thereof.

7.) The composition of claim 1 wherein the diester or triester results from the reaction of a diester or triester reactant comprised of two or more fatty alkoxylated moieties with a straight, branched or aromatic polyol or poly acid.

8.) The composition of claim 7, wherein the fatty alkoxylated moieties are of the formula I.:

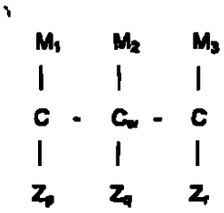
$$R_1\text{-}O\text{-}(CH_2\text{-}CH_2\text{-}O)_x\text{-}(CH_2\text{-}\underset{\displaystyle CH_3}{\underset{|}{CH}}\text{-}O)_y \qquad (I)$$

wherein:

$R_1$ is a saturated or unsaturated, substituted or unsubstituted, straight, branched, or aromatic fatty moiety having a carbon chain length of from about 6 to about 30 atoms; and

Each x and y are independently zero or an integer from 1 to 200, inclusive, with the proviso that the sum of x and y in each fatty alkoxylated moiety is independently between 1 and 300, inclusive, and the sum of all xs and ys in the diester or triester does not exceed 800.

9.) The composition of claim 7, wherein the straight, branched, or aromatic polyol or polyacid is of the structure II.:



II.

Wherein:

$M_1$, $M_2$, and $M_3$ are independently a hydroxy, two single bonded hydrogens, or a double bonded oxygen;

$Z_p$, $Z_q$, and $Z_r$ are independently hydrogen or a hydroxy;

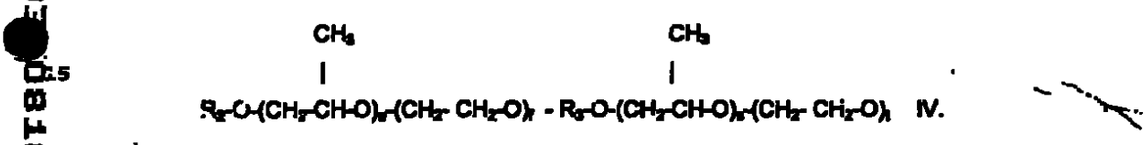
p, q, and r are independently zero or one, with the proviso that the sum of p + q + r is at least 2; and

w is zero or an integer between 1 and 20, inclusive.

10. The composition of claim 7, wherein the diester is di-PPG-2 myreth-10 adipate.

11. The composition of claim 1, wherein the monoester results from the reaction of a fatty acid moiety having a carbon chain length of from about 4 carbon atoms to about 30 carbon atoms with a monohydric or polyhydric alcohol.

12. The composition of claim 11, wherein the monoester is of the structure IV.:



IV.

Wherein:

$R_6$ is a saturated or unsaturated, substituted or unsubstitued straight, branched, or aromatic fatty moiety having a carbon chain length of from about 4 to about 30 atoms;

$R_9$ is a saturated or unsaturated, substituted or unsubstituted, straight, branched, or aromatic monohydric or polyhydric alcohol having a carbon chain length from about 3 atoms to about 30 atoms;

Each e, f, s, and t are independently zero or integers from 1 to 100, inclusive, with the provisos that the sum of e and f is zero or an integer between 0 and 200, inclusive, that the sum of s and t is zero or an integer between 0 and 200, inclusive, and that the sum of e, f, s, and t does not exceed 400.

13. The composition of claim 12, wherein the monoester is a glyceryl ester.

14. The composition of claim 13, wherein the glyceryl ester is selected from the group consisting of glyceryl oleate, PEG-7 glyceryl cocoate, and mixtures thereof.

15. The composition of claim 1, wherein the surfactant is selected from the group consisting of anionic, nonionic, amphoteric, betaine, cationic, and mixtures thereof.

16. The composition of claim 15, wherein the anionic surfactant is selected from the group consisting of alkyl sulfates, alkyl ether sulfates, sulfosuccinates, isethionates, acyl amides, alkyl ether carboxylates, alkyl phosphates, and mixtures thereof.

17. The composition of claim 15, wherein the nonionic surfactant is selected from the group consisting of fatty alcohol acid ethoxylates, fatty alcohol amide ethoxylates, monoglyceride ethoxylates, sorbitan ester ethoxylates, alkyl polyglycosides, and mixtures thereof.

18. The composition of claim 15 wherein the amphoteric surfactant is selected from the group consisting of alkyliminо-diproprionates, alkylamphoglycinates (mono or di), alkylamphopropriorates (mono or di), alkylamphoacetates (mono or di), N-alkyl β-aminoproprionic acids, alkylpolyamino carboxylates, phosphorylated imidazolines, and mixtures thereof.

19. The composition of claim 15 wherein the betaine surfactant is selected from the group consisting of alkyl betaines, alkylamido betaines, alkyl sultaines, alkylamido sultaines, and mixtures thereof.

20. The composition of claim 15 wherein the cationic surfactant is selected from the group consisting of mono alkyl quaternaries, di alkyl quaternaries, tri alkyl quaternaries, benzyl quaternaries, ester quaternaries, ethoxylated quaternaries, alkyl amines, and mixtures thereof.

21. The composition of claim 15 wherein the surfactant is selected from the group consisting of cocoamidopropyl betaine, disodium lauroamphodiacetate, sodium laureth sulfate, decyl glucoside, cocoglucoside, POE 80 sorbitan monolaurate, and mixtures thereof.

22. The composition of claim 1 wherein each monoester, diester, and triester possesses an HLB of less than or equal to about 11.

23. The composition of claim 22 wherein each monoester, diester, and triester possesses an HLB of greater than or equal to about 4 and less than or equal to about 11.

24. A personal care product comprised of the composition of claim 1.

25. The product of claim 24 in the form of a lotion, cream, gel, soap, bath, mousse, tonic, or wash.

26. A method of using the composition of claim 1 to impart a moisturizing residue to skin after the composition is rinsed therefrom.

27. A kit comprised of:

a) the composition of claim 1; and

b) a cleansing implement.

28. The kit of claim 27 wherein the cleansing implement is a pouf.

29. A makeup remover comprised of the composition of claim 1.

30. A moisturizing detergent composition comprising, based upon the total weight of the composition,

a. from about 0.01 percent to about 5 percent of guar hydroxypropyltrimonium chloride and/or polyquaternium 10;

b. from about 0.1 percent to about 5 percent of di-PPG-2 myreth-10 adipate;

c. from about about 0.1 percent to about 5 percent of a glyceryl ester; and

d. from about 8 percent to about 50 percent a cleansing surfactant.

31. The composition of claim 30 wherein the glyceryl ester is selected from the group consisting of glyceryl oleate, PEG-7 glyceryl cocoate, and mixtures thereof.

32. A personal care product comprised of the composition of claim 30.

33. The product of claim 32 in the form of a lotion, cream, gel, soap, bath, mousse, tonic, or wash.

34. A method of using the composition of claim 30 to impart a moisturizing residue to skin after the composition is rinsed therefrom.

35. A kit comprised of:

a) the composition of claim 30; and

b) a cleansing implement.

36. The kit of claim 35 wherein the cleansing implement is a pouf.

37. A makeup remover comprised of the composition of claim 30.

## Abstract Of The Disclosure

A moisturizing detergent composition that is mild to the skin and eyes is disclosed. The composition includes a cationic polymer, a monoester emollient, a di-and/or tri-ester emollient and a surfactant. The compositions are useful as shampoos, washes, baths, gels, lotions, creams, and the like.



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**DECLARATION AND POWER OF ATTORNEY FOR UTILITY OR DESIGN PATENT APPLICATION (37 CFR 1.63)**

☐ Declaration Submitted with Initial Filing OR ☒ Declaration Submitted after Initial Filing (Surcharge (37 CFR 1.16(e)) required)

| | |
|---|---|
| Attorney Docket Number | JBP-561 |
| First Named Inventor | Gregory BOOKER et al. |
| *COMPLETE IF KNOWN* | |
| Application Number | |
| Filing Date | |
| Group Art Unit | |
| Examiner Name | |

As a below named inventor, I hereby declare that:

My residence, mailing address, and citizenship are as stated below next to my name.
I believe I am the original, first and sole inventor (if only one name is listed below) or an original, first and joint inventor (if plural names are listed below) of the subject matter which is claimed and for which a patent is sought on the invention entitled:

MOISTURIZING DETERGENT COMPOSITIONS
*(Title of the Invention)*

the specification of which

☐ is attached hereto

OR

☒ was filed on 08/16/2001 as United States Application Number or PCT International Application Number
☐ and was amended on (MM/DD/YYYY)

I hereby state that I have reviewed and understand the contents of the above identified specification, including the claims, as amended by any amendment specifically referred to above.

I acknowledge the duty to disclose information which is material to patentability as defined in 37 CFR 1.56, including for continuation-in-part applications, material information which became available between the filing date of the prior application and the national or PCT International filing date of the continuation-in-part application.

I hereby claim foreign priority benefits under 35 U.S.C. 119(a)-(d) or 365(b) of any foreign application(s) for patent or inventor's certificate, or 365(a) of any PCT International application which designated at least one country other than the United States of America, listed below and have also identified below, by checking the box, any foreign application for patent or inventor's certificate, or any PCT International application having a filing date before that of the application on which priority is claimed.

| Prior Foreign Application Number(s) | Country | Foreign Filing Date (MM/DD/YYYY) | Priority Not Claimed | Certified Copy Attached? YES | NO |
|---|---|---|---|---|---|
| | | | ☐ | ☐ | ☐ |

☐ Additional foreign application numbers are listed on a supplemental priority data sheet PTO/SB/02B attached hereto:

099317030 081601

HH

103

D 931703 081601

## DECLARATION - Utility or Design Patent Application

I hereby claim the benefit under 35 U.S.C. 119(e) of any United States provisional application(s) listed below.

| Application Number(s) | Filing Date (MM/DD/YYYY) | |
|---|---|---|
| | | ☐ Additional provisional application numbers are listed on a supplemental priority data sheet PTO/SB/02B attached hereto. |

I hereby claim the benefit under Title 35, United States Code, §120 of any United States application(s) listed below and, insofar as the subject matter of each of the claims of this application is not disclosed in the prior United States application in the manner provided by the first paragraph of Title 35, United States Code, §112, I acknowledge the duty to disclose material information as defined in Title 37, Code of Federal Regulations, §1.56(a) which occurred between the filing date of the prior application and the national or PCT international filing date of this application:

| Application Serial No. | Filing Date | Status |
|---|---|---|
| | | Patented<br>Patented<br>Patented |

I hereby appoint:

☒ Practitioners at Customer Number 00002777 →

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AND

☐ Practitioner(s) named below:

Name — Registration Number

as my/our attorney(s) or agent(s) to prosecute the application identified above, and to transact all business in the United States Patent and Trademark Office connected therewith.

Address all telephone calls to Michele G. Manghi at telephone number (732) 524-2810.

Direct all correspondence to: ☒ Customer Number or Bar Code Label 00002777 OR ☐ Correspondence address below

| | | |
|---|---|---|
| Name: | | |
| Address: | | |
| Address: | | |
| City: | State: | ZIP |
| Country | Telephone: | Fax: |

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under 18 U.S.C. 1001 and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

| NAME OF SOLE OR FIRST INVENTOR: | ☐ A petition has been filed for this unsigned inventor |
|---|---|
| Given Name (first and middle (if any)) Gregory | Family Name or Surname BOOKER |
| Inventor's Signature | Date |
| Residence: City Philadelphia | State PA / Country U.S.A. / Citizenship U.S.A. |
| Mailing Address 2913 Swain Street | |
| City Philadelphia | State PA / ZIP 19130 / Country U.S.A. |

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under 18 U.S.C. 1001 and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

| NAME OF SECOND INVENTOR: | ☐ A petition has been filed for this unsigned inventor |
|---|---|
| Given Name (first and middle (if any)) Joseph | Family Name or Surname LIBRIZZI |
| Inventor's Signature | Date |
| Residence: City Neshanic | State NJ / Country U.S.A. / Citizenship U.S.A. |
| Mailing Address 19 Norz Drive | |
| City Neshanic | State NJ / ZIP 08853 / Country U.S.A. |

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under 18 U.S.C. 1001 and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

| NAME OF THIRD INVENTOR: | ☐ A petition has been filed for this unsigned inventor |
|---|---|
| Given Name (first and middle (if any)) Dolores | Family Name or Surname SANTORA |
| Inventor's Signature | Date |
| Residence: City Hillsborough | State NJ / Country U.S.A. / Citizenship U.S.A. |
| Mailing Address 28 Dilmars Circle | |
| City Hillsborough | State NJ / ZIP 08844 / Country U.S.A. |