



## INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

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<p>(21) International Application Number: PCT/US99/22519</p> <p>(22) International Filing Date: 30 September 1999 (30.09.99)</p> <p>(30) Priority Data:</p> <table border="0"> <tr> <td>60/102,501</td> <td>30 September 1998 (30.09.98)</td> <td>US</td> </tr> <tr> <td>60/102,692</td> <td>1 October 1998 (01.10.98)</td> <td>US</td> </tr> </table> <p>(71) Applicant (for all designated States except US): AVON PRODUCTS, INC. [US/US]; 1251 Avenue of the Americas, New York, NY 10020-1196 (US).</p> <p>(72) Inventors; and</p> <p>(75) Inventors/Applicants (for US only): TOKOSH, Richard [US/US]; 273 John Ochs Drive, Saddle Brook, NJ 07663 (US). KALAFSKY, Robert, E. [US/US]; 24 Willow Grove Court, Ogdensburg, NJ 07439 (US). PECHKO, Andrew, H. [US/US]; 965 E. Ridgewood Avenue, Ridgewood, NJ 07450 (US).</p> <p>(74) Agent: RUGGIERO, Charles, N., J.; Ohlandt, Greeley, Ruggiero &amp; Perle, L.L.P., 9th Floor, One Landmark Square, Stamford, CT 06901-2682 (US).</p>		60/102,501	30 September 1998 (30.09.98)	US	60/102,692	1 October 1998 (01.10.98)	US	<p>(81) Designated States: AE, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, 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, US, UZ, VN, YU, ZA, ZW, ARIPO patent (GH, GM, KE, LS, MW, SD, SL, SZ, TZ, 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).</p> <p><b>Published</b></p> <p><i>With international search report.</i></p> <p><i>With amended claims.</i></p>
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60/102,692	1 October 1998 (01.10.98)	US						
<p>(54) Title: COMPOSITIONS HAVING A SUNSCREEN FOR USE IN PERSONAL CLEANSING PRODUCTS</p>								
<p>(57) Abstract</p> <p>The present invention relates to personal cleansing compositions that provide effective sunscreen protection. The composition is used to make personal cleansing products such as cleansing bars, face and body washes, shower gels and shampoos that provide cleansing activity and sunscreen protection.</p>								

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**COMPOSITIONS HAVING A SUNSCREEN FOR USE  
IN PERSONAL CLEANSING PRODUCTS**

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**BACKGROUND OF THE INVENTION**

**1. Field of the Invention**

The present invention relates to compositions having a sunscreen. The composition is used to make personal cleansing products, such as, for example, cleansing bars, body and facial washes, shower gels and shampoos. More particularly, the present invention relates to personal cleansing products, such as a cleansing bar, a body and/or facial wash or a hair shampoo, that provide cleansing activity and sunscreen protection.

**2. Description of the Prior Art**

It has been recognized that exposure to ultraviolet radiation has deleterious effects on the skin. UV radiation has been linked to photoaging of the skin, resulting in undesired changes in the appearance of the skin, such as wrinkling and sagging. Exposure to UV radiation has even been linked to the more serious skin cancers, such as melanomas.

Accordingly, users have desired novel products that provide protection from UV radiation yet require a minimal amount of application time. Bathing provides an opportunity to efficiently apply effective sunscreen protection, especially in the United States where many users begin their day with a shower.

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Although, there have been attempts to incorporate sunscreens in cleaning compositions, heretofore such prior art sunscreen cleansing products have been liquid cleansing products, some of which require elaborate and, thus, expensive packaging. (See U.S. Patent No. 5,612,307 to Chambers et al.) Other prior art cleansing sunscreen compositions have failed to provide an effective cleansing/sunscreen bar that is commercially feasible to manufacture.

U.S. Patent No. 4,704,321 to Bernstein provides a liquid detergent with a sunscreen agent. However, the Bernstein formula fails to provide a personal cleansing composition that has been clinically shown to provide an SPF greater than 1.6, much less greater than 5. Furthermore, the Bernstein patent fails to provide a personal cleansing bar that includes a sunscreen or a method of producing such a cleansing bar.

U.S. Patent No. 4,954,332 to Bissett, et al. discloses photoprotective compositions comprising tocopherol sorbate and an anti-inflammatory. However, the Bissett et al. patent specifically distinguishes between pharmaceutical/cosmetic compositions, which may include sunscreens, and cleansing compositions, which are not disclosed as including sunscreens.

PCT publication WO 98/14559 discloses in Table III a bar composition having 5% octyl methoxycinnamate incorporated therein (Formula 205). However, the foregoing bar composition was evaluated only for the effect of the sunscreen component on the overall transparency of the bar composition. The efficacy, if any, of the bar composition in providing sunscreen protection was not evaluated. Although a clinical evaluation of the Formula 205 soap bar would likely fail to demonstrate an effective SPF since the Formula 205 soap bar fails to provide any agents that assist in preventing the sunscreen from being washed from the skin.

**BRIEF SUMMARY OF THE INVENTION**

It is an object of the present invention to provide a composition having a sunscreen that is used in personal cleansing products, such as cleansing bars, body and facial washes, shower gels, and shampoos.

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It is another object of the present invention to provide such a personal cleansing product for topical use that provides effective sunscreen protection.

10 It is yet another object of the present invention to provide such a personal cleansing bar that provides a sunscreen protection factor of greater than about 1.6.

15 It is a further object of the present invention to provide a process for making such a personal cleansing bar.

20 These and other objects of the present invention, in brief summary, are achieved by providing a personal cleansing composition that comprises a vehicle, a sunscreen and a film former, and by providing a process of preparing a personal cleansing bar from the foregoing composition by incorporating an absorbing agent.

**DETAILED DESCRIPTION OF THE INVENTION**

25 The personal cleansing composition or product of the present invention basically comprises a vehicle, a sunscreen, and a film former. The composition may include other ingredients, such as, for example, a fragrance and a color. All percentages set forth herein are weight percentages of the final composition unless otherwise specified.

30 The vehicle is any type of vehicle that is compatible with a surfactant or with surfactant systems, and can be topically applied. It is preferred that the vehicle is a cleansing base. The cleansing bases most

commonly used to manufacture personal cleansing products are soap bases, detergent or "syndet" bases or "combo" bases. ("Combo" bases, as the term indicates, comprise a combination of both syndet and soap bases.) In general, most such cleansing bases have a pH from about 4.5 to about 10.5. As known in the art, soap bases, generally have a higher pH than syndet bases. Soap bases generally have an average pH from about 10 to about 10.5. A superfatted soap base generally has an average pH of about 9 to about 9.5. Syndet bases have lower pH ranges than soap bases and are, thus, the more preferred bases for providing personal cleansing compositions having a pH similar to the pH of skin, about 4.5 to about 7.4. As can be expected, "combo" bases generally have an average pH that is intermediate syndet bases and soap bases, generally from about 7.5 to about 10.0. When the cleansing base is a syndet base, it is preferred that the cleansing base contains sodium cocoyl isethionate.

When one of the primary objectives in practicing the present invention is to provide a cleansing composition having a pH from about 4.5 to about 7.4, a syndet cleansing base is the preferred cleansing base. However, when one of the primary objectives in practicing the present invention is to provide cleansing bars in mass quantities for commercial use using conventional soap making machinery, the preferred cleansing base is the "combo" base.

When the personal cleansing product is a cleansing bar, one example of a preferred cleansing base has from about 40 wt% to about 50 wt% of sodium cocoyl isethionate, preferably in powder form; from about 10 wt% to about 20 wt% free fatty acid; from about 10 wt% to about 20 wt% of a combination of sodium stearate and sodium cocoate; from about 4 wt% to about 7 wt% water; from about 2 wt% to about 10 wt% sodium isethionate; and up to about 5 wt% sodium vinyl sulfonate. A preferred cleansing base for the cleansing bar and body wash embodiments of the

present invention is JORDAPON SB-II, a syndet base manufactured by BASF Corporation. Other suitable cleansing bases for use in the present invention are high active sodium cocyl isethionate solids (a non-limiting example is available from Finetex Corporation under the tradename  
5 "TAURANOL I-78") and high active sodium methyl cocyl taurate solids (a non-limiting example is manufactured by Finetex Corporation under the tradename "TAURANOL WS H.P.").

A second, more preferred, example of a cleansing base for  
10 formulating cleansing bars of the present invention has from about 30 wt% to about 70 wt%, preferably from about 50 wt% to about 55 wt%, of sodium cocoyl isethionate in powder form; from about 5 wt% to about 15 wt%, preferably from about 8 wt% to 12 wt% stearic acid, which is preferably triple pressed; and from about 1 wt% to about 10 wt%, more  
15 preferably from about 2 wt% to about 4 wt%, sodium isethionate. The remainder of this preferred cleansing base may include from about 1 wt% about 3 wt% PEG-1000; from about 4 wt% to about 6 wt% water; from about 0.1 wt% to about 2 wt% sodium chloride; and from about 3 wt% to about 10 wt% maltodextrin (a non-limiting example being  
20 MALTRIN M-100, available from Grain Processing Company).

A third example of a preferred cleansing base includes from about 25 wt% to about 55 wt%, more preferably from about 35 wt% to about 45 wt% of a conventional soap base that comprises about 85% tallow and  
25 about 15% coconut oil; from about 25 wt% to about 55 wt%, more preferably from about 35 wt% to about 45 wt% sodium cocoyl isethionate, preferably in powder form. This preferred cleansing base may also include from about 0.1 wt% to about 2.0 wt% titanium dioxide. In addition, while most conventional soap making processes remove some or all of  
30 the glycerin formed, the cleansing base of the present invention can include up to 10 wt% of glycerin. This feature greatly reduces commercial costs associated with glycerin removal.

When the personal cleansing product is a shampoo, it is preferred that the cleaning base also has either a salt of an alkyl ether sulfate, a salt of an alkyl sulfate, a polyglucoside, or any mixture thereof. It is more preferred that the salt of the alkyl ether sulfate is a salt of lauryl ether sulfate. It is more preferred that the salt of the alkyl sulfate is a salt of lauryl sulfate. It is more preferred that the polyglucoside is lauryl polyglucose (a non-limiting example is available under the tradename "PLANTAREN" from Henkel Corporation). The preferred salts are sodium salts, ammonium salts or triethanolamine ("TEA") salts. When the personal cleansing product is a face and/or body wash (i.e. a liquid personal cleansing product, and not a cleansing bar), it is preferred that the cleansing base has sulfosuccinates, amphoterics, imidazolines, polyglucosides, or mixtures thereof. The preferred polyglucoside is lauryl polyglucose.

15

The cleansing composition of the present invention includes a sunscreen that is compatible with the chosen vehicle or a cleansing base. The composition includes a sunscreen.

20

When a salt of the sunscreen is suitable for use in the present invention, as indicated above, the salt may be an organic salt or an inorganic salt. Organic and inorganic salt equivalents to the sunscreens indicated above are known in the art.

25

Preferred ranges for exemplary sunscreens are listed below in TABLE 1.

**TABLE 1**

	<u>SUNSCREEN</u>	<u>PERCENTAGE</u>
	OXYBENZONE	2-10
30	SULSIOBENZONE	5-10
	DIOXYBENZONE	1-3
	MENTHYL ANTHRANILATE	3-6
	PARA AMINOBENZOIC ACID (PABA)	5-15
	DEA METHOXYCINNAMATE	8-10
35	OCTOCRYLENE	7-10



	OCTYL METHOXYCINNAMATE*	2-10
	OCTYL SALICYLATE	3-5
	HOMOMENTHYL SALICYLATE	4-15
	OCTYL DIMETHYL PABA	1.4-5
5	TEA SALICYLATE	5-12
	TITANIUM DIOXIDE	2-25
	ZINC OXIDE	2-25
	BUTYLMETHOXY DIBENZOYLMETHANE**	0.1-5
	4-METHYL BENZILIDENE CAMPHOR	0.1-6
10	OCTYL TRIAZONE	0.1-10
	TEREPHTHALYDIDENE DICAMPHOR	
	SULFONIC ACID AND SALTS THEREOF***	0.1-5
	ETHYL PABA	1 - 10
	2-(2'-HYDROXY-5'-METHYLPHENYL)	
15	BENZOTRIAZOLE****	0.5 - 10
	METHYLENE BIS-BENZOTRIAZOLYL-	
	TETRAMETHYLBUTYLPHENOL*****	1 - 10
	BIS-OCTOXYPHENOL METHOXYPHENYL	
	TRIAZINE*****	1 - 10
20	* The terms "octyl methoxycinnamate" and "ethylhexyl methoxycinnamate" are used interchangeably herein.	
	** A non-limiting example of butylmethoxy dibenzoylmethane is available from Givaudan under the tradename "PARSOL 1789".	
	*** A non-limiting example of terephthalylidene dicamphor sulfonic acids and salts thereof is available from L'Oreal under the tradename "MEXORYL SX".	
25	**** A non-limiting example of 2-(2'-hydroxy-5'-methylphenyl) benzotriazole is available from Ciba-Geigy under the tradename "TINUVIN P".	
	***** A non-limiting example of methylene bis-benzotriazolyltetramethylbutylphenol is available from Ciba-Geigy under the tradename "TINOSORB-M".	
30	***** A non-limiting example of bis-octoxyphenol methoxyphenyl triazine is available from Ciba-Geigy under the tradename "TINOSORB-S".	

Sunscreens have varying optimal pH ranges. Accordingly, the choice of the sunscreen or sunscreen component will depend upon the pH of the vehicle used. However, it is preferred that the sunscreen is selected from the following group: octocrylene, octyl methoxycinnamate, octyl salicylate, oxybenzone, homomenthyl salicylate, butylmethoxy dibenzoylmethane, and mixtures thereof. It is more preferred that the sunscreen is oxybenzone, octyl methoxycinnamate, octocrylene, or any mixture thereof.

It is preferred that the sunscreen is a mixture of two or more sunscreens. It is further preferred that the sunscreen provides both UVA and UVB protection and, thus, it is preferred that the sunscreen includes

both an UVA sunscreen and an UVB sunscreen. In addition, when the personal cleansing composition includes a colorant, it is preferred that the sunscreen includes sulsiobenzone as a photostabilizer.

5           The third component of the composition is a film former. The film former is a waterproofing film former that provides adhesion properties for the sunscreen so that the sunscreen will adhere to the skin during, and remain adhered after, the rinsing process. Any known waterproofing film former that is known in the art to be compatible with a sunscreen and the  
10           cleansing base, and that can be topically applied, would be suitable for use in the present invention. Table 2 sets forth preferred waterproofing film formers for use in the present invention, and the corresponding preferred and more preferred ranges for each.

15

**TABLE 2**

<u>Waterproofing Film Formers</u>	<u>Preferred Range %</u>	<u>More Preferred Range %</u>
C 1-5 ALKYL GALACTOMANNAN	0.10-5.00	0.10-2.00
ISODODECANE / ETHYLENE		
20       MIXED COPOLYMER	3.0-20.0	5.0-15.0
ADIPIC ACID / DIETHYLENE GLYCOL /		
GLYCERIN CROSSPOLYMER	1.0 - 10.0	1.0-5.0
TRIMETHYLPENTANEDIOL /		
ADIPIC ACID COPOLYMER	1.0 - 10.0	1.0 - 5.0
25       TRIMETHYLPENTANEDIOL/		
ADIPIC ACID / ISONONANOIC ACID	1.0 - 10.0	1.0 - 5.0
* PVP / HEXADECENE COPOLYMER	0.5 - 10.0	1.0 - 5.0
(e.g., GANEX V-216)		
* PVP / EICOSENE COPOLYMER	0.5 - 10.0	1.0 - 5.0
30       (e.g., GANEX V-220)		
* TRICONTANYL PVP	0.5 - 10.0	1.0 - 5.0
* ALPHA OLEFIN / ISOPROPYL		
MALEATE / MA POLYMER	1.0-10.0	1.0-5.0
CYCLOALKYL METHACRYLATE		

	COPOLYMER / ISODODECANE	1.0-15.0	2.0 - 12.0
	TRIMETHYL POLYSILOXANE	1.0-10.0	1.0 - 5.0
	* OCTADECENE / MA COPOLYMER	0.5 - 10.0	1.0 - 5.0
	PPG- 12 / SMDI COPOLYMER	1.0-10.0	1.0-5.0
5	ACRYLATES C10-30 ALKYL ACRYLATE		
	CROSSPOLYMER	0.10-5.0	0.10-2.0
	CETYL HYDROXYETHYLCELLULOSE	0.10-5.0	0.10-2.0
	* DIMETHICONOL	1.0-20.0	1.0-10.0
	* DIMETHICONE	1.0-20.0	1.0-10.0
10	* DIGLYCOL/CYCLOHEXANE-		
	DIMETHANOL/ISOPHTHALATES/ SULFOISOPHTHALATE COPOLYMER**	1.0-10.0	1.0 - 5.0
	ACRYLATES OCTYLACRYLAMIDE		
	COPOLYMER	1.0-10.0	1.0 - 5.0
15	POLYURETHANE	1.0-20.0	1.0-10.0
	POLYETHYLENE	0.10-10	1.0-5.0
	BEESWAX	0.5 -5.0	1.0 - 5.0

\* Denotes preferred waterproofing film formers.

20 \*\* diglycol/cyclohexanedimethanol/isophthalates/sulfoisophthalates polyester is available from Eastman Chemical Company under the tradename "AQ 55S".

It is also contemplated that the personal cleansing composition of the present invention may be used to topically deliver other active ingredients in addition to the sunscreen agent. For example, during the  
 25 summer months, a personal cleansing product that provides both insect repellent protection and sunscreen protection would be desired. Examples of insect repellents that may be incorporated into the present invention include: N,N-diethyltolumide (DEET), citronella, ethyl butylacetylaminopropionate (a non-limiting example is available from  
 30 Merck Industries under the trade name "IR3535"). In areas where mosquito-borne and tick-borne diseases are concerns, a personal cleansing product with a sunscreen and DEET and/or ethyl butylacetylaminopropionate. However, such a personal cleansing product would not be suitable for the washing certain areas of the face,  
 35 particularly around the eyes. The personal cleansing product can include

from about 0.3 wt% to about 30 wt% insect repellent. To accommodate the inclusion of the insect repellent, the content of ingredients, such as the cleansing base and/or the sunscreen could be decreased accordingly.

5           When the personal cleansing composition is formed using conventional and commercial machinery into a cleansing bar, an absorbing agent must be added. Previously, attempts to make cleansing bars using conventional soap making machinery failed because the addition of the sunscreen created a composite that was too "sticky" to  
10 process. Such previous attempts failed to provide a process of making, and particularly stamping, such cleansing bars that was commercially viable.

          It has been found that the addition of an absorbing agent, such as  
15 talc, sodium cocoyl isethionate powder or other ingredients that have a physical appearance similar to talc, such as starch or oat flour, to absorb the sunscreen so that the composite may be processed through conventional cleansing bar machinery. Sodium cocoyl isethionate powder is particularly preferred because it performs the triple functions of  
20 (1) absorbing the sunscreen to decrease the "stickiness/tackiness" of the composite, (2) decreasing the pH of the composite to increase the stability of the sunscreen, which is often unstable at higher pH values, and (3) foaming/surfactant action. Thus when the absorbing agent is sodium cocoyl isethionate (powder), the ranges are as previously set forth above.  
25 However, when the absorbing agent is a material that provides only an absorbing function, such as with talc, then the cleansing base comprises from about 2 wt% to about 20 wt%, and more preferably from about 5 wt% to about 10 wt%.

### EXAMPLE 1

Sample milled cleansing bars ("sample A cleansing bars") were manufactured by conventional milled soap making methods on conventional soap making equipment.

5

The cleansing base used to make the sample A cleansing bar is a syndet cleansing base available from BASF Industries, Inc. under the tradename JORDAPON SB-II Syndet Base. ("the sample A cleansing base") The sample A cleansing base has from about 40 wt% to about 50 wt% of sodium cocoyl isethionate, from about 10 wt% to about 20 wt% free fatty acid, from about 10 wt% to about 20 wt% sodium stearate/sodium cocoate, from about 4 wt% to about 7 wt% water, from about 2 wt% to about 10 wt% sodium isethionate, and up to about 5 wt% sodium vinyl sulfonate. The sample A cleansing base has a pH about 7.4.

15

The sample A cleansing base was added to a mixer along with 7 wt% of the sunscreen, ethylhexylmethoxycinnamate, and 3 wt% of the waterproofing film former, a PVP/Eicosene copolymer ("GANEX® V-220"). Then, color and fragrance additives were added. Thereafter, the composite was mixed and then milled, to form a homogeneous mass. The homogenous mass was then extruded, cut into billets and stamped into rectangular bars.

20

The sample A cleansing bar was then subjected to the following test procedure.

25

The sample A cleansing bar was lathered with warm water in the hands of the user. After the aforementioned lathering period, the user applied the lather to the test area and rubbed the lather onto the test area for fifteen seconds. The test area was the lower back of human subjects. After the completion of the application, the test area was rinsed with warm water for five seconds and then patted dry with a cloth towel. The

30

application was then allowed to "air dry" for an additional two minutes, after which the test area was subjected to UV radiation exposure from a 150 watt xenon arc light source. The Sunscreen Protection Factor (hereinafter "SPF") was measured according to the Sunscreen Product Testing Procedures for Determination of the Sun Protection Factor (SPF) Value and Related Labeling Claims as set forth by the Food and Drug Administration in Sunscreen Drug Products for Over the Counter Human Drugs – Proposed, Safety, Effective and Labeling Conditions, (Federal Register Department of Health, Education and Welfare, Food and Drug Administration, August 25, 1978, Part II.) The sample bar provided a clinical SPF value of about 1.6.

EXAMPLE 2

Cleansing bars having following formula were made and tested as set forth below. A Mazzoni continuous extrusion line having one amalgamator, two Simplex plidders having 2.0 mm screens and a Duplex vacuum plodder having a 3.0 mm screen was used. In addition, a SAS Mariani Tommaso cutter and a Weber Seelander Press were used to cut and press the soap bars. However, other screen sizes and/or equipment known in the art may be used to prepare cleansing bars of the present invention.

SAMPLE B

<u>Ingredient</u>	<u>Wt% Total Composition</u>
<u>Sample B Cleansing base</u>	
25 Soap comprising	
85% Tallow and 15%Coconut Oil	39.75
Sodium Cocoyl Isethionate (powder)	39.75
Titanium Dioxide	0.50
<u>Sunscreen/Film Former Mixture</u>	20.00
30 (GANEX V-220)	(5.00)
(Benzophenone-3)	(3.00)
(Octyl methoxycinnamate)	(5.00)
(Octocrylene)	(7.00)

35 The sunscreen/film former mixture was prepared by combining and mixing the GANEX V-220, benzophenone-3, octyl methoxycinnamate and octocrylene at 60°C to 70°C to form a uniform mixture to be added later to

the Sample B cleansing base. The Sample B cleansing base was prepared as follows. The soap base (comprising about 85% tallow and about 15% coconut oil), sodium cocoyl isethionate (powder) and titanium dioxide were added into the amalgamator (mixer) at room temperature.

5 The sunscreen/film former, having been uniformly mixed at 38°C in a separate container, was added to the Sample B cleansing base in the amalgamator. The amalgamator was turned on and the entire composite was mixed for five minutes.

10 After the five-minute period, the amalgamator was stopped, and the composition was discharged onto a conveyor belt that led to a first Mazzoni Simplex plodder. Although the composite was "sticky" in comparison to conventional composite mixtures not including such a sunscreen/film former mixture, no added difficulty was experienced in  
 15 transferring the composite, via the conveyor belt, to the first Simplex plodder. Cleansing bars (hereinafter "sample B cleansing bars") were then formed according to conventional methods.

### EXAMPLE 3

20 Sample C cleansing bars having the following composition were made as follows.

#### SAMPLE C

<u>Ingredient</u>	<u>Wt% Total Composition</u>
<u>Sample C Cleansing Base</u>	
25 Sodium Cocoyl Isethionate (powder) (FINETEX I-78 C)	52.5
Stearic Acid- Triple Pressed	10.0
PEG-1000 USP	2.0
Water	4.0
30 Sodium Chloride	0.5
Sodium Isethionate (57% soln)	5.0
Maltodextrin (MALTRIN M100)	6.0
<u>Sunscreen/Film Former Mixture</u>	
(GANEX V-220)	20.0
(Benzophenone-3)	(5.0)
35 (Octylmethoxycinnamate)	(3.0)
(Octocrylene)	(5.0)
	(7.0)

The base was prepared in a Patterson mixer, which was fitted with sigma mixing blades and steam heat. The steam was turned on and applied to the mixer jacket and the sigma blades. The sodium cocoyl isethionate and stearic acid were added to the Patterson mixer, and the mixer motor was turned on. After the sodium cocoyl isethionate and stearic acid formed a fluid composite, the PEG-1000 was added to the composite. Separately, the sodium chloride was added to the water, mixed and then the sodium chloride/water mixture was added to the composite. Then, the sodium isethionate was added to the composite to be immediately followed by the addition of the Maltodextrin. This composite was mixed 10 minutes at about 82°C. After the 10 minute mixing period, the sunscreen/film former additive was added, and the composite was mixed for an additional 40 minutes at about 78°C to about 82°C before being discharged from the mixer. The hot composite was then processed over a "chill roll", and prepared into bar form on conventional laboratory extrusion equipment.

### CLINICAL TESTING

Both sample B cleansing bars and sample C cleansing bars were evaluated on a three-person panel according to the procedure set forth in Example 1. The results are set forth in Table 3 below.

TABLE 3

<u>SPF</u>	<u>Sub. 1</u>	<u>Sub. 2</u>	<u>Sub. 3</u>	<u>Avg. SPF</u>
Sample B	6.25	5.00	6.25	5.83
Sample C	5.00	6.25	5.00	5.42

In addition, sample B cleansing bars were subjected to temperatures of about 40°F and about 110°F for one month to determine the stability of the sunscreen component. No significant decrease in concentration occurred for any of the three sunscreens (benzophenone-3, octocrylene and octylmethoxycinnamate)



It is contemplated that other active ingredients may be added to the cleansing compositions of the present invention. For example, one or more of fragrances, moisturizers, emollients, superfatting agents, vitamins, keratolytics, skin whitening ingredients, anti-acne agents, anti-  
5 bacterial agents may be incorporated into the cleansing compositions of the present invention. Exemplary anti-bacterial agents include TRICLOSAN, available from Ciba-Geigy, and trichlorocarbanilide, available from Monsanto Corporation. An exemplary superfatting agent comprises from about 5 wt% to about 10 wt% coconut fatty acids. To  
10 accommodate such active ingredients, the sunscreen or, more preferably the cleansing base, can be decreased accordingly.

The present invention is not limited to the examples illustrated above, as it is understood that one of ordinary skill in the art would be  
15 able to utilize substitutes and equivalents without departing from the scope of the present invention.

## CLAIMS

Wherefore it is claimed:

1. A personal cleansing composition comprising:  
5 about 5 wt% to about 30 wt% of a sunscreen;  
about 1 wt% to about 12 wt% of a film former; and  
a vehicle having a cleansing base.
  
2. The personal cleansing composition of claim 1, wherein the  
10 sunscreen comprises a UVA sunscreen and a UVB sunscreen.
  
3. The personal cleansing composition of claim 1, wherein the  
sunscreen is selected from the group consisting of oxybenzone,  
sulsiobenzene, dioxybenzone, menthyl anthranilate, para aminobenzoic  
15 acid (PABA), DEA methoxycinnamate, octocrylene, octyl  
methoxycinnamate, octyl salicylate, homomenthyl salicylate, octyl  
dimethyl PABA, tea salicylate, titanium dioxide, zinc oxide,  
butylmethoxydibenzoylmethane, 4-methyl benzilidene camphor, octyl  
triazone, terephthalylidene dicamphor sulfonic acids and salts thereof,  
20 ethyl PABA, 2-(2'-hydroxy-5'-methylphenyl) benzotriazole, methylene bis-  
benzotriazolyltetramethylbutylphenol, bis-octoxyphenol methoxyphenyl  
triazine, derivatives thereof, and mixtures thereof.
  
4. The personal cleansing composition of claim 1, wherein the  
25 sunscreen is selected from the group consisting of benzophenone-3,  
butylmethoxydibenzoylmethane, octocrylene, octyl salicylate, octyl  
methoxycinnamate, methylene bis-benzotriazolyltetramethylbutylphenol,  
bis-octoxyphenol methoxyphenyl triazine, derivatives thereof, and mixtures  
thereof.  
30

5. The personal cleansing composition of claim 1, wherein the sunscreen comprises from about 2 wt% to about 6 wt% benzophenone-3, from about 2 wt% to about 10 wt% octocrylene, and from about 2 wt% to about 10 wt% octyl methoxycinnamate.
- 5
6. The personal cleansing composition of claim 1, wherein the film former component is selected from the group consisting of C 1-5 alkyl galactomannan, isododecane / ethylene mixed copolymer, adipic acid / diethylene glycol / glycerin crosspolymer, PVP / hexadecene copolymer  
10 PVP / eicosene copolymer, tricontanyl PVP, alpha olefin / isopropyl maleate / MA polymer, cycloalkyl methacrylate copolymer / isododecane, trimethyl polysiloxane, octadecene / MA copolymer, PPG- 12 / SMDI copolymer, acrylates C10-30 alkyl acrylate crosspolymer, cetyl hydroxyethylcellulose, dimethiconol, dimethicone,  
15 diglycol/cyclohexanedimethanol/isophthalates/sulfoisophthalate copolymer, acrylates octylacrylamide copolymer, polyurethane, polyethylene, and mixtures thereof.
7. The personal cleansing composition of claim 1, wherein the film  
20 former is selected from the group consisting of a PVP/eicosene copolymer, a PVP/hexadecene copolymer, tricontanyl PVP, alpha olefin/isopropyl maleate/MA polymer, octadecene/MA copolymer, dimethiconol, dimethicone, diglycol/cyclohexanedimethanol/isophthalates/sulfoisophthalates copolymer, and mixtures thereof.
- 25
8. The personal cleansing composition of claim 1, wherein the personal cleansing composition has a pH from about 4.5 to about 10.5.
9. The personal cleansing composition of claim 1, wherein the  
30 cleansing base comprises a detergent base.

10. The personal cleansing composition of claim 9, wherein the personal composition has a pH from about 4.5 to about 7.4.
11. The personal cleansing composition of claim 9, wherein the  
5 cleansing base further comprises a soap base.
12. The personal cleansing composition of claim 11, wherein the cleansing base comprises from about 30 wt% to about 50 wt% of the soap base and from about 30 wt% to about 50 wt% of the detergent base.  
10
13. The personal cleansing composition of claim 11, wherein the personal cleansing composition has a pH from about 7.5 to about 10.
14. The personal cleansing composition of claim 9, wherein the  
15 cleansing base comprises sodium cocoyl isethionate powder.
15. The personal cleansing composition of claim 1, further comprising an absorbing agent.
- 20 16. The personal cleansing composition of claim 15, wherein the absorbing agent is selected from the group consisting of sodium cocoyl isethionate powder, talc, starch, oat flour, and mixtures thereof.
17. The personal cleansing composition of claim 15, wherein the  
25 personal cleansing composition is a toilet bar.
18. The personal cleansing composition of claim 1, further comprising a secondary active ingredient selected from the group consisting of insect repellent, fragrance, moisturizer, emollient, vitamin, keratolytic, skin  
30 whitening ingredient, anti-acne agent, antibacterial agent, and mixtures thereof.

19. The personal cleansing composition of claim 1, further comprising from about 0.3 wt% to about 30 wt% of an insect repellent.
20. The personal cleansing composition of claim 1, further comprising  
5 from about 0.1 wt% to about 5 wt% of an anti-acne agent.
21. The personal cleansing composition of claim 1, wherein the personal cleansing composition provides an SPF greater than 1.6.
- 10 22. The personal cleansing composition of claim 1, wherein the personal cleansing composition provides an SPF greater than 4.0.
23. The personal cleansing composition of claim 1, wherein the personal cleansing composition provides an SPF greater than 5.0.  
15
24. A method of forming a personal cleansing composition comprising:  
forming a cleansing base,  
adding a sunscreen/film former mixture to the cleansing base to  
form a composite,  
20 mixing the composite.
25. The method of claim 24, wherein cleansing base is added to the sunscreen/film former mixture prior to mixing the composite.
- 25 26. The method of claim 24, wherein the sunscreen/film former mixture is formed by:  
blending a sunscreen and a film former at about 60°C to about  
70°C to form a sunscreen/film former mixture prior to adding the  
sunscreen/film former mixture to the cleansing base.

27. The method of claim 24, wherein the cleansing base comprises an absorbing agent.

28. The method of claim 27, further comprising forming a toilet bar  
5 after mixing the composite.

**AMENDED CLAIMS**

[received by the International Bureau on 10 February 2000 (10.02.00);  
claims 29 to 34 added ; remaining claims unchanged (1 page)]

27. The method of claim 24, wherein the cleansing base comprises an  
absorbing agent.
28. The method of claim 27, further comprising forming a toilet bar  
5 after mixing the composite.
29. A method of applying sunscreen protection to human or animal  
skin comprising applying the personal cleansing composition according to  
any one of claims 1 through 23 to said skin.  
10
30. The method of claim 29, further comprising applying water to said  
skin either before or after applying the personal cleansing composition to  
said skin.
- 15 31. The method of claim 30, further comprising forming a lather.
32. The method of claim 31, further comprising rinsing the lather.
- 20 33. A method of applying sunscreen protection to human or animal  
skin comprising applying the personal cleansing composition according to  
any one of claims 15 through 17 to said skin.
- 25 34. The method of claim 33, further comprising applying water to said  
skin either before or after applying the personal cleansing composition to  
said skin.

INTERNATIONAL SEARCH REPORT

International application No.  
PCT/US99/22519

<b>A. CLASSIFICATION OF SUBJECT MATTER</b> IPC(6) :A61K 7/40, 7/48 US CL :424/401, 59, 60, 69, 70.9, 78.03; 510/130; 134/42 According to International Patent Classification (IPC) or to both national classification and IPC		
<b>B. FIELDS SEARCHED</b> Minimum documentation searched (classification system followed by classification symbols) U.S. : 424/401, 59, 60, 69, 70.9, 78.03; 510/130; 134/42 Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched Electronic data base consulted during the international search (name of data base and, where practicable, search terms used) WEST		
<b>C. DOCUMENTS CONSIDERED TO BE RELEVANT</b>		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X, P	US 5,948,416 A (WAGNER et al) 07 September 1999, col. 5, lines 25-67, col. 9, lines 33-46, col. 13, lines 27-39, col. 14, lines 2-11.	1-18, 21-28
Y, P	US 5,911,980 A (SAMOUR et al) 15 June 1999, col. 11, lines 54-65.	19-20
A	US 4,954,332 A (BISSETT et al) 04 September 1990.	1-28
X	US 5,811,111 A (MCATEE et al) 22 September 1998, col. 7, lines 11-21, col. 8, lines 10-60, col. 10, lines 20-55, col. 17, lines 38-57, col. 19, lines 24-41, col. 20, lines 46-67.	1-28
<input checked="" type="checkbox"/> Further documents are listed in the continuation of Box C. <input type="checkbox"/> See patent family annex.		
*A*	document defining the general state of the art which is not considered to be of particular relevance	*T*
*B*	earlier document published on or after the international filing date	*X*
*L*	document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)	*Y*
*O*	document referring to an oral disclosure, use, exhibition or other means	*Z*
*P*	document published prior to the international filing date but later than the priority date claimed	
		later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
		document of particular relevance: the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
		document of particular relevance: the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art
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28 NOVEMBER 1999		14 DEC 1999
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INTERNATIONAL SEARCH REPORT

International application No.  
PCT/US99/22519

C (Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 5,759,524 A (TANNER et al) 02 June 1998, col. 3, line 55-col. 4, line 53, col. 9, line 25-40, col. 16, line 46-col. col. 18, line 55.	1-28