Cola™ Lipid PRODUCTS

benefits

Look for the following benefits from Cola™Lipid:

- Naturally Derived
- Mimics Natural Phospholipids
- Highly Substantive
- Multi-functional Ingredients
- Broad Spectrum Antibicrobial Activity
- Non-Irritating to Skin and Eyes
- Long-Lasting Use Benefits
- Reinforces Skin Barrier Protection
- Alleviates Dry Skin Conditions
- Effective Emulsifiers, Cleansers and Emolients Safe for Baby Products

applications

- Skin Care Products: creams, lotions, tonics, shower gels, facial washes etc.
- Hair Care Products: shampoos, conditioners, hair tonics, hair creams, etc.
- Sun Care Products: pre and post sun care creams, lotions, gels, etc.
- Make-up Products: foundations, lipsticks, etc.
- Health Care
- Baby Products

Cola™Lipid DLO is covered under patent # US 6,331,293 B1.
Cola™Lipid RC is covered under patent # US 6,451,775 B1.

description

The Cola™Lipid products are multifunctional, natural oil derived phospholipids composed predominantly of diester and triester phosphatides. Through the careful selection of specific natural oils as raw materials, the Cola™Lipid products deliver a broad range of functional properties which include gentle cleansing, anti-irritation effects, unusually high substantivity, long lasting conditioning, broad spectrum antimicrobial activity, emulsification attributes, and exceptional mildness to skin and eyes.

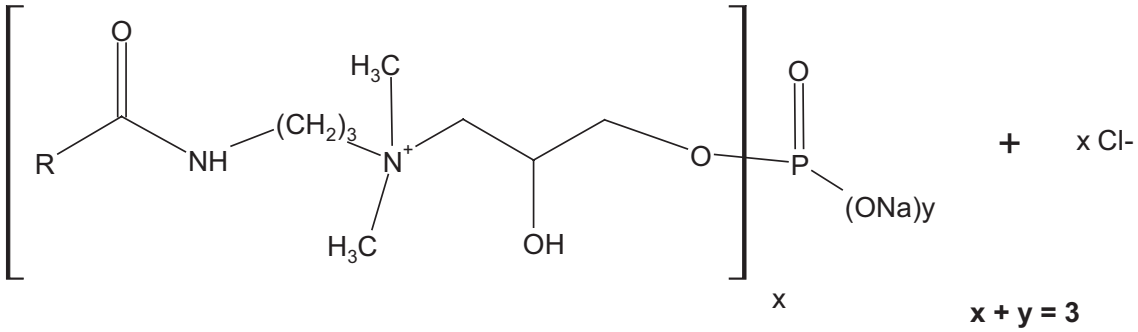
While the Cola™Lipid products exhibit antimicrobial properties, they are not registered antimicrobials. However, they are particularly useful to augment the efficacy of standard antimicrobial agents. Due to the ampholytic character of the Cola™Lipid products, they are compatible with virtually all other types of ingredients including anionic surfactants. The Cola™Lipid products have multiple hydrophobic groups, as well as multiple cationic binding sites, which provide unusually high degrees of substantivity.

Many of the Cola™Lipids, acted upon by specific skin enzymes, can serve as delivery systems for essential fatty acids that the body requires but is not able to synthesize. These essential fatty acids, linoleic and linolenic acids, reinforce and repair the skin barrier function and alleviate dry, damaged skin conditions. They enhance skin moisturization without occulsiveness, and do not interfere with normal skin respiration. The non-irritation toxicological properties of the Cola™Lipids, combined with their broad spectrum anibicrobial activity, is highly unique and permits their use in a veriety of opthalmic and skin treatment formulations. Their ablility to effectively kill gram-negative organisms is a highly desirable formulation benefit, not generally achievable with quaternary surfactants.

Cola™Lipid

Cola™Lipid	Chemical Description	Oil Source	Primary R-Group
C	Cocamidopropyl PG-Dimonium Chloride Phosphate	*Coconut*	Cocamidopropyl
SAFL	Linoleamidopropyl PG-Dimonium Chloride Phosphate	*Safflower*	Linoleamidopropyl
SUN	Sunfloweramidopropyl Phosphate PG-Dimonium Chloride	*Sunflower*	Linoleamidopropyl
OL	Sodium Olivamidopropyl PG-Dimonium Chloride Phosphate	*Olive*	Oleamidopropyl
ST	Stearamidopropyl PG-Dimonium Chloride Phosphate	*Palm*	Stearamidopropyl
RC Patented	Ricinoleamidopropyl PG-Dimonium Chloride Phosphate	*Castor*	Ricinoleamidopropyl
DLO Patented	Dimer Dilinoleamidopropyl PG-Dimonium Chloride Phosphate	*Dimer Acid*	Di-Linoleamidopropyl
SIL	PEG-8 Dimethicone Sunfloweramidopropy PG-Dimonium Complex	*Sunflower*	Silicone & Linoleamidopropyl
BP	Borageamidopropyl Phosphatidyl-PG-Dimonium Chloride	*Borage*	Borageamidopropyl
GS	Sodiumgrapeseedamidopropyl PG-Dimonium Chloride Phosphate	*Grapeseed*	Linoleamidopropyl

structure



typical properties

Cola™Lipid	C	BP	SAFL	SUN	OL
Appearance (25°C)	Clear yellow liquid	Pale yellow liquid	Clear amber liquid	Clear light amber liquid	Clear liquid
Color, Gardner	3 Max.	4 Max.	4 Max.	4 Max.	4 Max.
% Solids	45 - 48	30 -35	29 – 31	29 – 31	29 – 31
pH (10% DW)	6.5 – 7.5	6.5 – 7.5	7.0 – 8.0	7.0 – 8.0	6.5 – 8.0

Cola™Lipid	ST	RC	DLO	SIL	GS
Appearance (25°C)	Waxy white solid liquid	Clear pale liquid	Clear pale amber liquid	Clear light amber liquid	Clear liquid
Color, Gardner	N/A	4 Max.	4 Max.	4 Max.	4 Max.
% Solids	40 – 42	29 – 31	29 – 31	29 – 31	29 – 31
pH (10% DW)	6.0 - 8.0	6.5 – 8.0	7.0 – 8.0	6.5 - 8.0	6.5 – 8.0

benefits/applications

Cola™Lipid

C

- Greatest water slubility, best foamer and cleanser
- Gentle cleansing, highly substantive skin conditioning, effective broad spectrum antimicrobial activity.
- Baby care products, sensitive skin cleansers, bio-deodorants.

BP

- Topical skin delivery of γ-linolenic acid
- Skin normalizer
- Non-occlusive moisturizer
- Non-toxic and non-irritating
- Highly substantive on skin and hair
- Non-greasy emollient

SAFL

- Highly substantive delivery of linoleic acid, non-occlusive moisturizing, co-emulsification.
- Pronounced lubricity, body-building, and softness to hair.
- Hair conditioners, moisturizing shampoos, make-up foundations.

SUN

- Substantive delivery of benefits of sunflower oil for skin and hair care products.

OL

- Derived from triple pressed virgin olive oil where the primary oil containing greater than 80% unsaturated oil.
- Superior for developing effective products that promote skin health.
- Moisturization
- Lubricity
- Softening

ST

- Emulsification, long-lasting skin smoothing properties, eliminates the tacky/greasy feel of other ingredients, such as glycerin and sorbitol.

RC
Patented

- Beneficial properties of castor oil without a greasy feel.
- Substantive toward skin and hair with long term aesthetics.
- Useful for tanning products, compromised skin care, and ethnic hair conditioners.

DLO
Patented

- Exceptional barrier properties due to dimerized hydrophobic groups.
- Barrier crèmes, lotions, emollient tissue and diaper liner treatments.

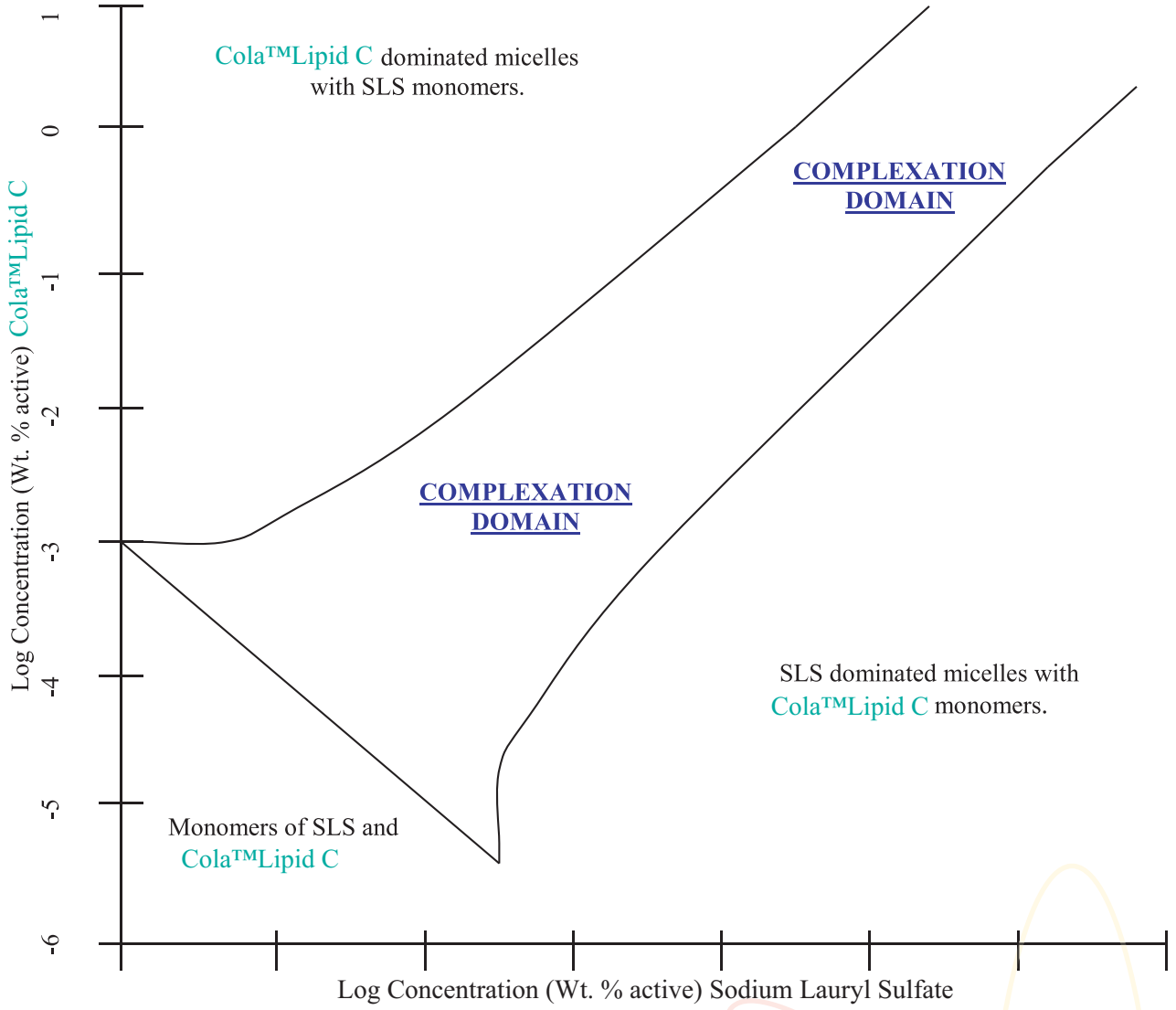
SIL

- The benefits of Cola™Lipid SAFL complexed with silicone technology.
- Enhanced conditioning for skin and hair.

GS

- Enriched with linolenic acid, a key skin care ingredient.
- Useful in advanced skin care products for enhanced aesthetics.

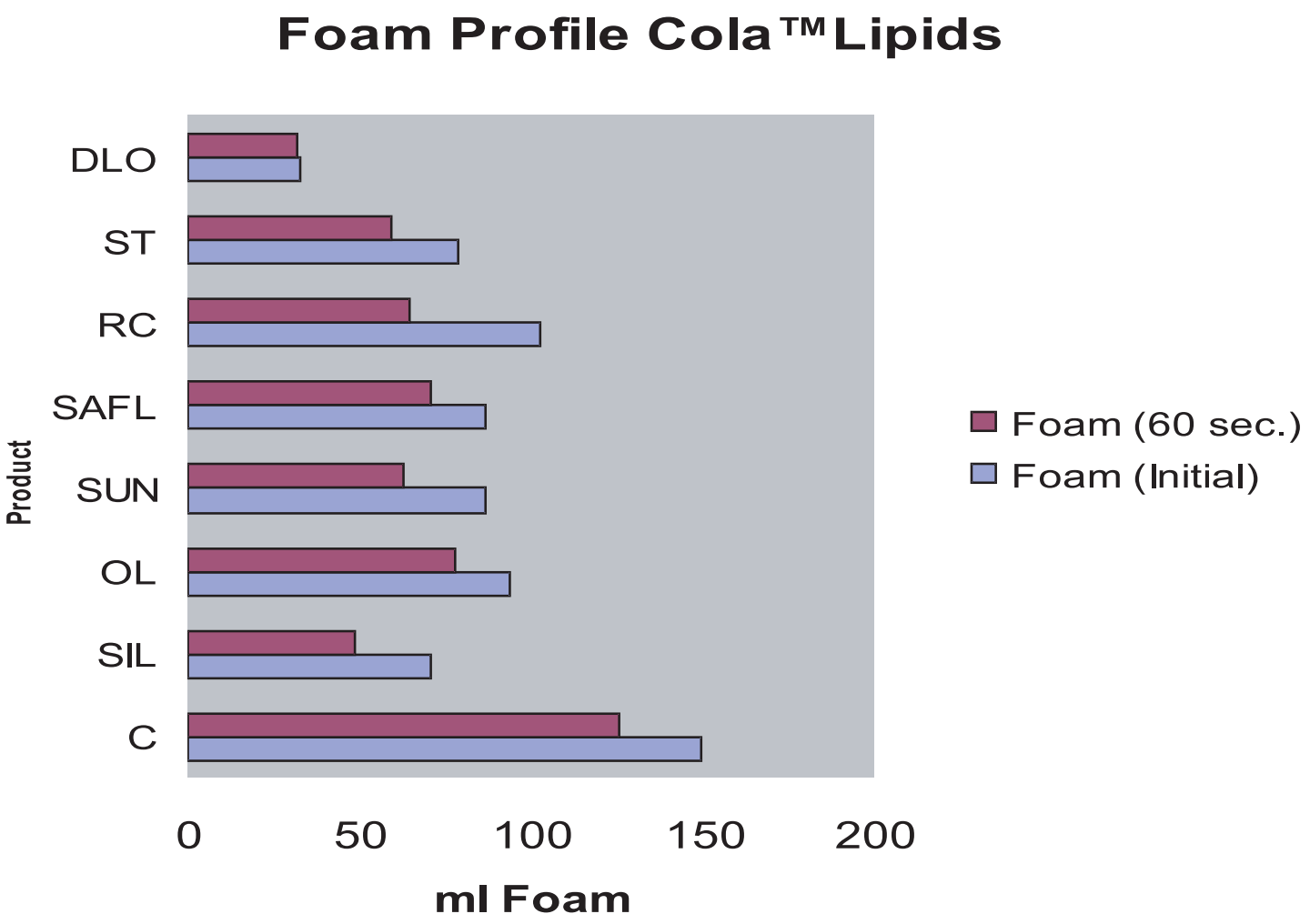
Cola™Lipid complexation phase diagram

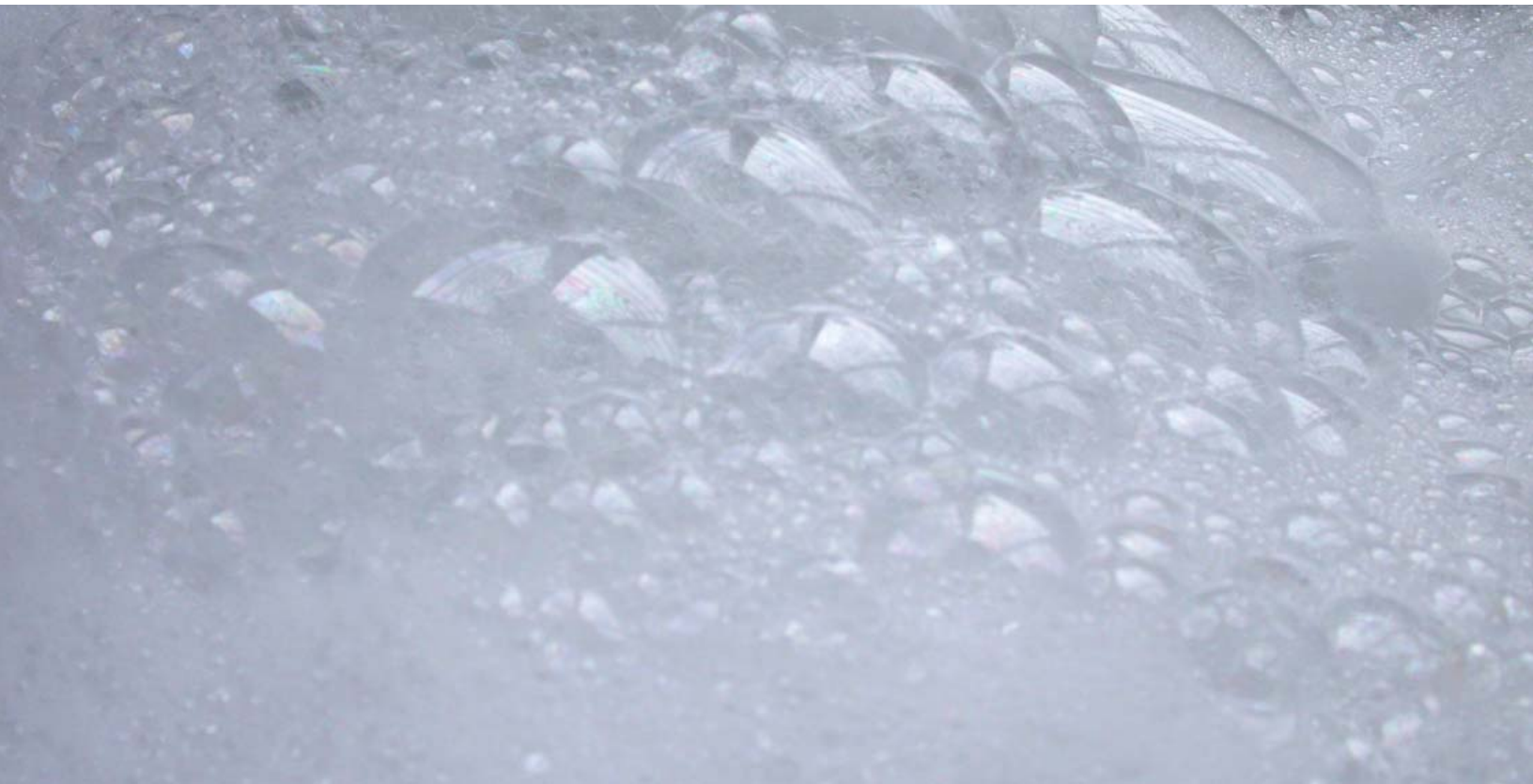


When Cola™Lipid C is combined with lauryl sulfate, the strong synergistic interaction between the cationic nature of Cola™Lipid C and the anionic sulfate creates regions of varying solution characteristics. In the lower left, the relative concentration of both components is so low that negligible interaction occurs. Towards the upper left, Cola™Lipid C dominates and the micelles formed are predominantly cationic with sulfate as a minor constituent. In the lower righthand region, the opposite condition exists where sulfate dominates and Cola™Lipid C is the minor compound.

The area of most interest is the central region where complexation occurs. By creating an aggregate of the two compounds, deposition on hair and skin is maximized and Cola™Lipid C is most favorably adsorbed. The control of this aggregate in a formulation so that overt precipitation within the finished product does not happen is accomplished through the use of other agents such as solvents (glycerin, glycol), cosurfactants (amphoterics, nonionics), or viscosifiers (polymers). When the Cola™Lipid C – Sulfate complex is contacted on the skin or hair, the aggregate is broken and the substantive nature of Cola™Lipid C dominates while the sulfate is removed by rinsing.

foam profile





formulations

baby wipes

COMPOUND	Wt. %
Cola™Lipid C	2.00
Malic Acid	0.40
Water	97.60
TOTAL	**100.00**

PROCEDURE:

Add ingredients, adjust pH to 5.5

antimicrobial hand cleanser

COMPOUND	Wt. %
Water	87.00
Cola™Mate ODS	8.50
Cola™Lipid C	2.50
Chlorhexidine Gluconate (20%)	2.00
TOTAL	**100.00**

PROCEDURE:

Blend ingredients in order given until uniform, viscosity can be increased with the addition of Glucamate DOE-120.

sunflower conditioning shower gel

COMPOUND	Wt. %
Water	55.50
Colonial SLES-2 (28%)	34.00
Cola™Teric COAB	5.50
Cola™Lipid SUN	2.00
Cola™Mid LA	2.50
Sodium Chloride	0.50
TOTAL	**100.00**

PROCEDURE:

Blend ingredients in order given with sufficient stirring until uniform. Adjust pH to 6.0 with citric acid, viscosity can also be varied by adjusting the amount of sodium chloride used.

barrier lotion

COMPOUND	Wt. %
PART A	
Cola™Lipid DLO	4.50
Water	82.50
PART B	
Steareth – 2	2.00
Mineral Oil	4.00
Cetearyl Alcohol	3.00
Octyldodecyl Myristate	2.50
Dimethicone (100 cS)	1.50
TOTAL	**100.00**

PROCEDURE:

Add ingredients in each phase separately and heat to 65°C. Homogenize Part B into Part A with continued heating. Stir cool to 45°C. Add fragrance, coloring, and preservative as required, then fill.

deep moisturizing crème

COMPOUND	Wt. %
PART A	
Water	84.50
Potassium Hydroxide (45%)	0.40
Cola™Fax CPE	1.00
Cola™Lipid ST	2.50
Germaben II-E	0.60
PART B	
Titanium Dioxide	0.50
PART C	
Cetyl Alcohol	2.00
Myristyl Myristate	3.00
Isopropyl Palmitate	4.00
Dimethicone (100cS)	1.00
Lanolin Alcohol	0.50
TOTAL	**100.00**

PROCEDURE:

Heat Part A with agitation to 60°C, add Part B, continue mixing. Separately heat Part C to 60°C. Homogenize Part C into Part A for a sufficient time to ensure good emulsification. Stir, cool to 45°C, add fragrance, and package.

moisturizing sunscreen (SPF 15)

COMPOUND	Wt. %
Part A	
Cola™Fax CPE	1.00
Cola™Lipid ST	2.50
Water	78.70
Potassium Hydroxide (45%)	0.40
Germaben II-E	0.40
Titanium Dioxide	0.40
Part B	
Cetyl Alcohol	2.00
C 12-15 Alkyl Benzoate	1.60
Isopropyl Palmitate	2.00
Dimethicone (200/350cS)	1.00
Octylmethoxy Cinnamate	6.00
Menthyl Anthranilate	3.00
Steareth-2	1.00
TOTAL	**100.00**

Viscosity	250,000 cps
pH	5.6

PROCEDURE:

Heat Part A with agitation to 60°C. Separately heat Part B to 60°C. Homogenize Part B into Part A for a sufficient time to ensure good emulsification. Stir, cool to 45°C, add fragrance, and package.

foaming facial cleanser

COMPOUND	Wt. %
Water	58.00
Cola™Mate DSLS	22.00
Cola™Teric LMB	8.00
Cola™Lux LO	5.00
Cola™Lipid C	4.00
Glycerin	2.00
Croda Antil 171	1.00
TOTAL	**100.00**

PROCEDURE:
Blend ingredients in order given with sufficient stirring until uniform, adjust pH to 5.5 with citric acid.

frequent use hand soap

COMPOUND	Wt. %
Water	53.00
Colonial SLES-2	25.00
Cola™Mate SS-40	10.00
Cola™Teric CA-35	6.00
Cola™Lux LO	4.00
Cola™Lipid C	2.00
TOTAL	**100.00**

PROCEDURE:
Blend ingredients in order given with sufficient stirring until uniform, adjust pH to 5.5 with citric acid.

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