



g Cola®Lipid

Naturally-Derived Biomimetic Phospholipids

Patents - Cola®Lipid DLO 6,331,293 B1
Cola®Lipid RC 6,451,775 B1

INTRODUCTION

The **Cola®Lipid** products are multifunctional, natural triglyceride phospholipids similar to phospholipids that occur naturally in the body. **Cola®Lipids** can be used in a variety of personal care products.



BENEFITS

- Sustainable
- Naturally derived
- Mimics natural phospholipids
- Highly substantive to hair and skin
- Broad spectrum antimicrobial activity
- Non-irritating to eyes and skin
- Reduces irritation of anionic activity
- Deposits essential fatty acids on skin
- Repairs damaged skin and hair

APPLICATIONS

- Creams, lotions, tonics, shower gels, facial washes, etc.
- Conditioners, shampoos, hair tonics, hair creams, etc.
- Pre- and post-sun care creams, lotions, gels, etc.
- Foundations, lipsticks, etc.
- Health care products
- Baby products

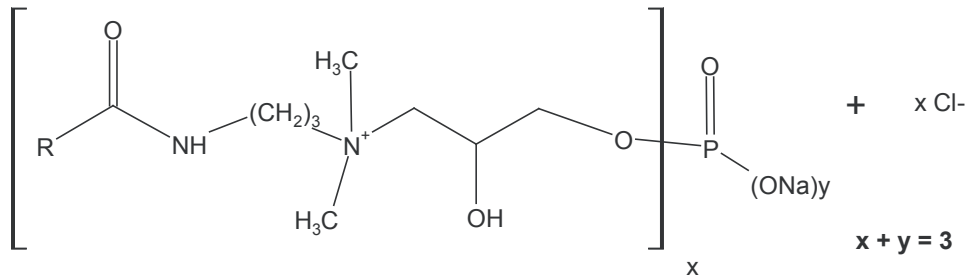
GREENSTAR RATINGS

| | |
|-----------------|------|
| Cola®Lipid C | 4.53 |
| Cola®Lipid BP | 5.19 |
| Cola®Lipid SAFL | 5.20 |
| Cola®Lipid SUN | 5.19 |
| Cola®Lipid OL | 5.19 |
| Cola®Lipid ST | 5.12 |
| Cola®Lipid RC | 5.30 |
| Cola®Lipid DLO | 6.71 |
| Cola®Lipid GS | 5.19 |
| Cola®Lipid M | 4.54 |

greenstarproducts.org



STRUCTURE



| <u>COLA[®]LIPID</u> | <u>INCI NAMES</u> | <u>SOURCE</u> | <u>PRIMARY R-GROUP</u> |
|------------------------------|--|---------------|------------------------|
| C | Cocamidopropyl PG-Dimonium Chloride Phosphate | Coconut | Coco |
| SAFL | Linoleamidopropyl PG-Dimonium Chloride Phosphate | Safflower | Linoleyl |
| SUN | Sunflowerseedamidopropyl PG-Dimonium Chloride Phosphate | Sunflower | Linoleyl |
| OL | Sodium Olivamidopropyl PG-Dimonium Chloride Phosphate | Olive | Oleyl |
| ST | Stearamidopropyl PG-Dimonium Chloride Phosphate | Palm | Stearyl |
| RC | Sodium Ricinoleamidopropyl PG-Dimonium Chloride Phosphate | Castor | Ricinoleyl |
| DLO | Dimer Dilinoleamidopropyl PG-Dimonium Chloride Phosphate | Dimer Acid | Di-linoleyl |
| SIL | Linoleamidopropyl PG-Dimonium Chloride Phosphate PEG-8 Dimethicone Complex | Sunflower | Linoleyl |
| BP | Sodium Borageamidopropyl PG-Dimonium Chloride Phosphate | Borage | Linoleyl |
| GS | Sodium Grapeseedamidopropyl PG-Dimonium Chloride Phosphate | Grapeseed | Linoleyl |
| M | Myrstamidopropyl PG-Dimonium Chloride Phosphate | Coconut | Myristyl |

TYPICAL PROPERTIES

| Cola [®] Lipid | Appearance (25°C) | Color, Gardner | % Solids | pH (10% DW) |
|-------------------------|--------------------------|----------------|----------|-------------|
| C | Clear yellow liquid | 3 Max. | 45 - 48 | 6.5 - 7.5 |
| BP | Pale yellow liquid | 4 Max. | 30 - 35 | 6.5 - 7.5 |
| SAFL | Clear amber liquid | 4 Max. | 29 - 31 | 7.0 - 8.0 |
| SUN | Clear amber liquid | 4 Max. | 29 - 31 | 7.0 - 8.0 |
| OL | Clear liquid | 4 Max. | 29 - 31 | 6.5 - 8.0 |
| M | Clear liquid | 4 Max. | 45 - 47 | 6.5 - 7.5 |
| ST | Waxy white solid | N/A | 40 - 42 | 6.0 - 8.0 |
| RC | Clear pale liquid | 4 Max. | 29 - 31 | 6.5 - 8.0 |
| DLO | Clear amber liquid | 4 Max. | 29 - 31 | 7.0 - 8.0 |
| SIL | Clear light amber liquid | 4 Max. | 29 - 31 | 6.5 - 8.0 |
| GS | Clear liquid | 4 Max. | 29 - 31 | 6.5 - 8.0 |



FORMULATIONS

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.

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 (100cS) | 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.



FORMULATIONS

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.
Viscosity can be increased with the addition of Glucamate DOE-120.

BABY WIPES

| Compound | Wt.% |
|---------------------------|---------------|
| Cola [®] Lipid C | 2.00 |
| Malic acid | 0.40 |
| Water | 97.60 |
| Total | 100.00 |

PROCEDURE:

Add all ingredients; adjust pH to 5.5.

DEEP MOISTURIZING CREAM

| 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 |

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.