



# Cola®Fax CPE

High Monoester Cetyl Phosphate

**INCI** Cetyl Phosphate  
**CAS** 3539-43-3  
**LISTINGS** US (TSCA), EU (REACH), Canada (DSL), Australia (AICS), Japan (ENCS),  
 China (IECSC - IECIC), Philippines (PICCS), New Zealand (NZIOC), Taiwan (TCSI)

## OVERVIEW

**Cola®Fax CPE** is an oil-soluble long chain organic phosphate ester supplied as a free acid in powdered form. It is generally used as a co-emulsifier with low HLB nonionics, and is non-irritating to skin. Cola®Fax CPE is easily dissolved into either phase during emulsion processing and can be neutralized in-situ with various cations. Cola®Fax CPE, at low use concentrations, will enhance the stability of emulsions and thicken cremes and lotions. It can replace TEA-stearate in most preparations. Cola®Fax CPE is ideally suited for use in many dermatological and personal care products.

- ▶ **Cola®Fax CPE contains no ethylene oxide.**
- ▶ **Cola®Fax CPE contains no organochlorines.**

## BENEFITS

- Emulsion stabilizer – overcomes imbalances in HLB emulsifier values for various oil systems.
- Easy to formulate. Acid form is oil soluble; neutralized salts are water-soluble.
- Can be substituted for polyacrylic acid type polymers, which are frequently utilized as emulsion stabilizers without increasing viscosity to an unacceptable limit.
- Physically easier to use than polyacrylic acid. No dispersion, wetting problems or fish eyes in solution.
- Good rub out and afterfeel. Does not inhibit quick break emulsion properties.
- Primary emulsifier, providing excellent performance at normal skin pH.
- Easy-to-handle, without noxious dust particles.

## APPLICATIONS

- Sunscreens
- Low viscosity emulsions
- Lotions
- Cleansing milks



## TYPICAL PROPERTIES

Appearance	White Powder
Acid Value (pH 5.0)	380 – 420
Solids, %	100
Melting Point, °C	67 - 73
Color, Gardner '98	3 Max.
Specific Gravity	1.02

## TOXICOLOGICAL PROPERTIES

Dermal Evaluation (3% in water pH 7.0)  
 48 Hour Human Patch (25 test subjects)  
 • **Result: 25/25 Completely Non-Irritating**

In Vitro Ocular Evaluation (3% in water pH 7.0)  
 Ropak, Eytex™ Rapid Membrane Assay  
 Eytex™ Classification  
 • **Result: Minimal/Mild**

## VISCOSITY

At low concentrations, Cola®Fax CPE will effectively increase viscosity and aid in the stabilization of the emulsion system. Formulations containing Cola®Fax CPE will display enhanced shear, heat, and freeze-thaw stability. Cola®Fax CPE will also enhance the glossy appearance of cosmetic cremes.

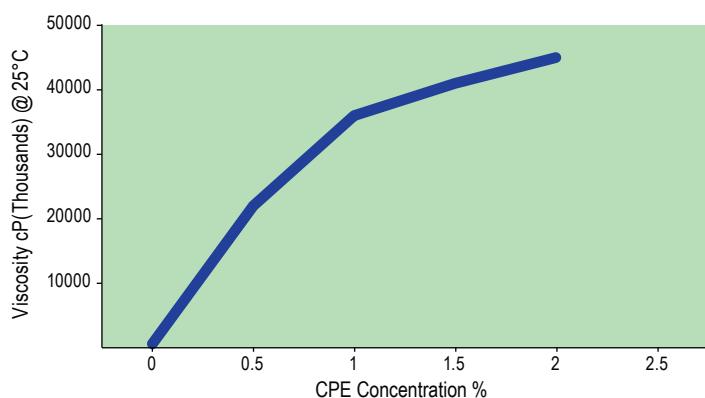
## VISCOSITY RESPONSE CURVE

The chart below demonstrates the effect of Cola®Fax CPE on emulsion viscosity.

### TEST SYSTEM FOR RESPONSE CURVE

INGREDIENT	%
Water	q.s.
Glycerin	5.0
Potassium Hydroxide (45%)	0.33 – 1.34
Germaben II-E	0.5
Cetyl Alcohol	2.0
Myristyl Myristate	2.0
Isopropyl Palmitate	2.0
<b>Cola®Fax CPE</b>	0.5 – 2.0

Emulsion pH 7.0



## NEUTRALIZING

Neutralizing Agent	Grams required to neutralize 1 Gr. of Cola®Fax CPE	
	pH 6.0	pH 7.0
Sodium Hydroxide (50%)	0.36	0.42
Potassium Hydroxide (45%)	0.56	0.67
Triethanolamine (99%)	0.67	0.81
Aminomethylpropanol (95%)	0.39	0.48

## STORAGE / HANDLING

It is recommended that Cola®Fax CPE be stored in sealed containers at temperatures not exceeding 120° F/49°C. Cola®Fax CPE is shipped in open-head fiber drums (net weight 120 lb/54 kg). Typical shelf life is 24 months from date of manufacture. Safety Data Sheets may be found at [www.colonialchem.com](http://www.colonialchem.com).

Cola®Fax CPE is "Derived Natural" with a Natural Origin Index of 1.00 in accordance with ISO 16128 guideline.

## SUGGESTED FORMULAS

### Moisturizing Sunscreen (SPF 15)

PART A		%
1	<b>Cola®Fax CPE</b>	1.0
2	<b>Cola®Lipid ST</b>	2.5
3	Water	78.7
4	Potassium Hydroxide (45%)	0.4
5	Germaben II-E	0.4
6	Titanium Dioxide	0.4
PART B		
1	Cetyl Alcohol	2.0
2	C 12-15 Alkyl Benzoate	1.6
3	Isopropyl Palmitate	2.0
4	Dimethicone (200/350cS)	1.0
5	Octylmethoxy Cinnamate	6.0
6	Menthyl Anthranilate	3.0
7	Steareth-2	1.0

**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.

**Specifications:** pH = 5.6 Viscosity = 250,000

### Deep Moisturizing Cream

PART A		%
1	Water	84.5
2	Potassium Hydroxide (45%)	0.4
3	<b>Cola®Fax CPE</b>	1.0
4	<b>Cola®Lipid ST</b>	2.5
5	Germaben II-E	0.6
PART B		
1	Titanium Dioxide	0.5
PART C		
1	Cetyl Alcohol	2.0
2	Myristyl Myristate	3.0
3	Isopropyl Palmitate	4.0
4	Dimethicone (100cS)	1.0
5	Lanolin Alcohol	0.5

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



**Colonial Chemical**

225 Colonial Drive • South Pittsburg, TN 37380  
Phone: 423-837-8800 • Fax: 423-837-3888  
[www.colonialchem.com](http://www.colonialchem.com)

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