



POLY SUGA[®]PHOS

NATURALLY DERIVED GEMINI SURFACTANTS

INCI/CTFA Names: Poly Suga[®]Phos 1000P (Sodium Hydroxypropylphosphate Decylglucoside Crosspolymer)

Poly Suga[®]Phos 1200P (Sodium Hydroxypropylphosphate Laurylglucoside Crosspolymer)

Patent Pending

EINECS: Polymer exempt

benefits

- Poly Suga[®]Phos products are “green” and are derived from renewable resources
- Compatibility with other anionics
- Useful over a broad pH range
- Extremely mild to eyes and skin
- Poly Suga[®]Phos products do not contain preservatives



applications

- Neutralizing Shampoos
- Hair Relaxers
- Depilatories
- Useful in AHA and BHA products
- Low pH Shampoos
- Facial Washes

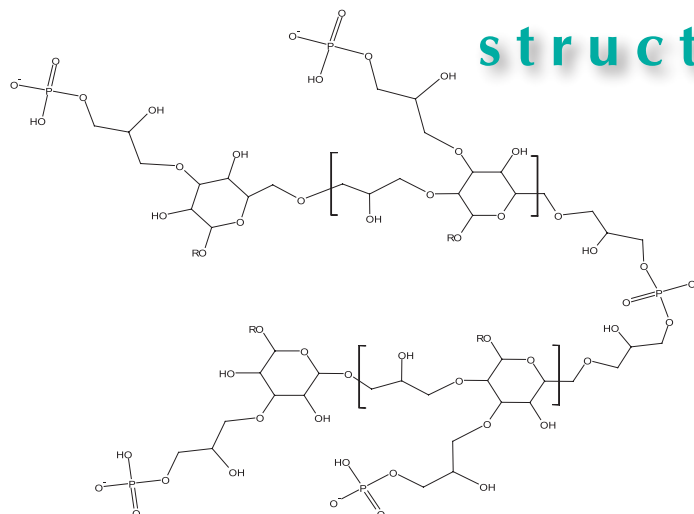


introduction

Colonial Chemical has pioneered a new series of products based upon naturally derived building blocks. The Colonial Poly Suga[®]Phos Series of products are anionic surfactants based on a Polymeric-APG structure and represent some of our newest technology in the manufacture of Gemini surfactants. These new Poly Suga[®]Phos products offer formulating advantages over traditional anionic products.

The Poly Suga[®]Phos materials are derived from alkyl polyglucosides which are natural, renewable resources. These starting materials form biodegradable, mild surfactants that function in all types of conditions for personal care applications.

structure



toxicological properties

Eye

The evaluation of Poly Suga®Phos as an eye irritant was performed using the chorioallantoic membrane technique. The test was performed with Poly Suga®Phos 1200P diluted to 2 % activity. This test utilizes the inner membrane of a hen's egg to gauge the irritation potential of a compound by visual observation of injurious changes in the membrane.

Poly Suga®Phos 1200P was rated with a score of 0.50 on this test. For comparison, the leading brand of baby shampoo was rated at 11.0 and a top selling adult shampoo was rated at 24.56. Poly Suga®Phos 1200P was rated as having no ocular irritation potential.

Skin

To evaluate the potential irritation to skin, a study was performed adhering to ICH Guideline E6 and 21 CFR parts 50 and 56. Fifty-three (53) volunteers, males and females, ranging in age from 23 to 79 were subjected to a "patch test". The "patch test" was performed with the Poly Suga®Phos 1200P diluted to 0.4 % activity. A 1" X 1" absorbent pad was moistened with 0.2 ml of liquid and applied to the backs of the subjects between the scapulae. The patch sites were inspected at 48 hours for gross changes. It was observed that there was a complete absence of skin change. The test sites were evaluated again at 72 hours. Once again the observation was negative for any skin changes. Under the conditions of this test, Colonial Poly Suga®Phos 1200P did not indicate a potential for dermal irritation.

typical properties

Poly Suga®Phos	1000P	1200P
Color, Gardner (ASTM D1544-98)	< 1	1
Activity, %	40.0	40.0
Viscosity (cps), 25°C	20	4250
pH (10% aq)	7.8	7.7
Ross Miles Foam (1%, 25C, tap water), mm		
Immed.	165	135
1 minute	145	115
5 minutes	140	100
Draves Wetting (1 % active), seconds	Immed.	6.8

extra mild shampoo with Poly Suga®Phos 1200P

COMPOUND	Wt. %
Deionized Water	47.50
Poly Suga®Phos 1200P	30.00
Cola®Teric LMB	8.00
Cola®Liquid DS	2.00
Glucamate DOE 120	2.50
Cola®Mate DSLS	10.00
Citric Acid, 50%	qs
TOTAL	100.00
Viscosity	1,800 cps
pH(10% aqueous)	6.0

PROCEDURE:

Heat Water to 50°C, then add ingredients 2 - 6. Cool to 35°C and adjust pH to about 6.0 with citric acid.

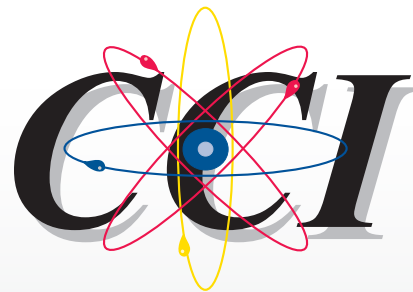
Poly Suga®Phos/Cola®Moist facial cleanser

COMPOUND	Wt. %
Water	52.00
Cola®Teric DLB	5.00
Cola®Quat DQ	2.00
Poly Suga®Phos 1000P	19.50
Cola®Moist 200	2.00
Cola®Lux LO	18.00
Glucamate DOE 120	1.50
Citric Acid, 50%	qs
TOTAL	100.00
Viscosity	2,600 cps
pH(10% aqueous)	6.4
Activity: 21.4%	

PROCEDURE:

Heat Water to 40°C, then add remaining ingredients. Cool to 35°C and adjust pH to about 6.0 with citric acid.

If your formulation calls for natural. If your formulation calls for sulfate free, then you need to look at these unique, safe surfactants. Naturally derived from renewable resources make Poly Suga®Phos surfactants an excellent choice for most personal care applications.



COLONIAL CHEMICAL, INC.

225 Colonial Drive
 South Pittsburg, TN 37380
 Phone: 423-837-8800
 Fax: 423-837-3888
www.colonialchem.com

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COLONIAL CHEMICAL, INC. • 225 Colonial Drive • South Pittsburg, TN 37380
 Phone: 423-837-8800 • Fax: 423-837-3888

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