NATUALLY DERIVED

POLY SUGA® BETAINE

PRELIMINARY BULLETIN

INCI: L - Sodium Bis-Hydroxyethylglycinate Lauryl-Glucosides Crosspolymer,
C - Sodium Bis-Hydroxyethylglycinate Coco-Glucosides Crosspolymer
Patent #7,507,399

characteristics

- Non-irritating
- No amido propyl group
- Naturally derived
- Renewable resource
- Excellent formulation label copy
- Mildness like no other betaine on the market
- Surface active properties over a wide pH range
- Acid and alkaline formulations
- Excellent after-feel on skin

applications

- Shampoos
- Creams & Lotions
- Shaving Products
- Bubble Bath
- Aerosol Mousse Conditioner
- Shower Gels
- Liquid Hand Soaps

description

The Poly Suga®Betaine products are high quality betaines derived from natural and "green" starting materials. The Poly Suga®Betaines are made from alkylpolyglucosides (APG's), which themselves are derived from coconut oil and corn syrup. Poly Suga®Betaines thus are naturally derived from renewable vegetable resources that are fully biodegradable. The Poly Suga®Betaines are sustainable, "green" surfactant ingredients that are very safe for personal care cleansing and foaming products.

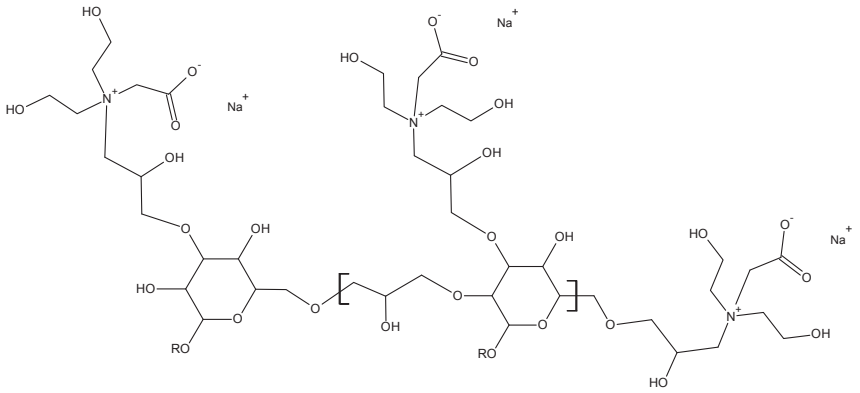
Poly Suga®Betaine has no odor and will not add unwanted color to formulations. Poly Suga®Betaine is an extremely mild surfactant with no eye and skin irritation. These products have the ability to reduce the irritation of other surfactants in personal care formulations.

Poly Suga®Betaine is designed to be used in combination with high foaming surfactants such as sodium laurylglucosides hydroxypropyl sulfonate (Suga®Nate 160 and Poly Suga®Nate 160P) to make non-irritating personal care cleansing products. Used in personal care formulations, the resulting foam is dense and has great stability. The ability of Poly Suga®Betaine to produce these quality foams makes it an excellent choice for shaving creams, mousses and other dense foam formulations.

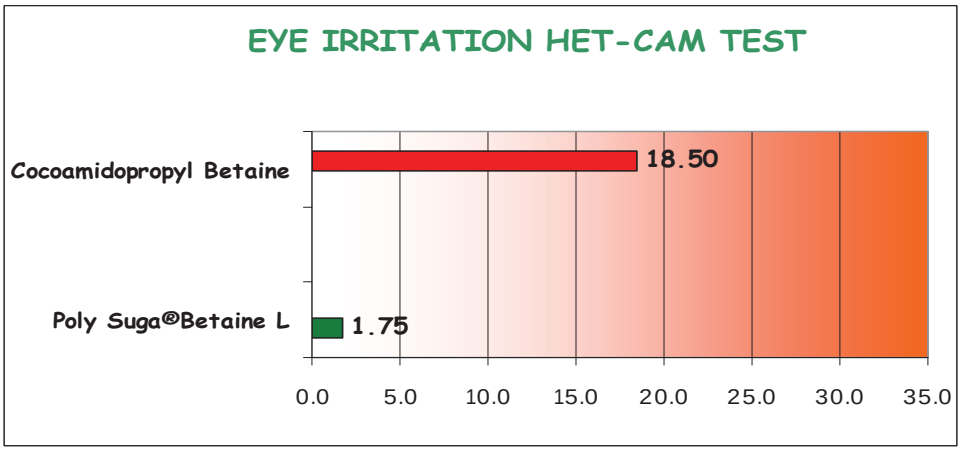
Viscosity of formulations can be significantly increased by combining Poly Suga®Betaine with anionic surfactants. It is suggested that ratios of 1:1 Poly Suga®Betaine to anionic be used at 20% - 30% active concentrations in formulations to achieve maximum foam and viscosity.

In shampoo formulations, Poly Suga®Betaine produces conditioning and imparts softness to the hair. When tested with cationic polymers, it was found that a combination of Poly Suga®Betaine with a cationic polymer produces better conditioning as compared to Poly Suga®Betaine or a cationic polymer used individually. Use in hair care can be at any pH range. This product is very substantial to hair and skin.

poly suga®betaine structure



eye irritation test



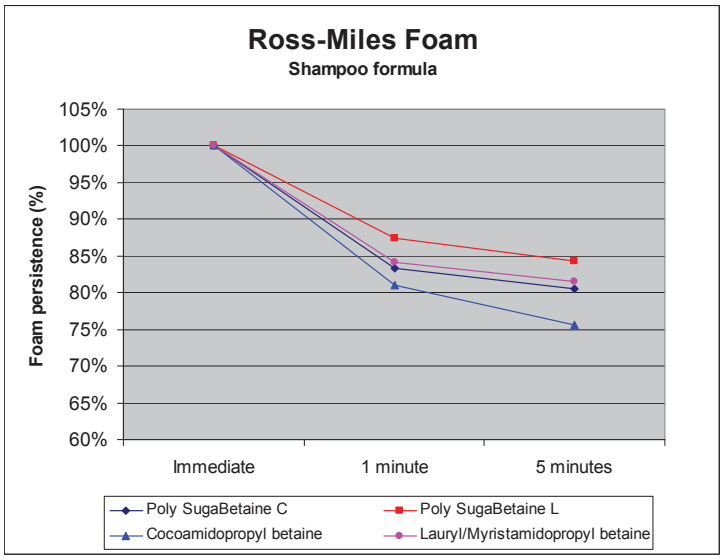
Poly Suga®Betaine is much less irritating than cocoamidopropyl betaine, scoring a non-irritating 1.75 in the eye irritation test vs. the cocoamidopropyl betaine score of 18.5, which is very irritating. These tests were run at 4% active surfactant.

typical properties

	Poly Suga®Betaine C	Poly Suga®Betaine L
Appearance	Clear, amber liquid	Clear, amber liquid
Color, Gardner	1	2
Activity, %	40	40
pH (10% aqueous)	7	7
Ross-Miles Foam Height (1% active), mm		
Immediate	180	135
1 minute	165	115
5 minutes	160	110
Draves Wetting (1% active), seconds	3.3	5.7

performance in a typical shampoo

A simple shampoo was formulated with Poly Suga®Betaine, and also with cocoamidopropyl betaine and lauryl/ myristamidopropyl betaine. The foam from these shampoos was tested according to the Ross-Miles method. There was very little change in the amount of foam, and the foam was more persistent in the shampoos made with Poly Suga®Betaine.



formulations

Clear shampoo

COMPOUND	Wt. %
Water	45.00
Poly Suga®Betaine L	20.00
Poly Suga®Nate 160P	15.00
Sodium Cocoyl Taurate	10.00
Lauryl Sarcosinate	5.00
Cola®Lipid SAFL	5.00
TOTAL	100.00

PROCEDURE:

Blend ingredients in order given with sufficient stirring to ensure uniformity. Mild heat will reduce mixing time. Add fragrance and preservatives as needed.

TYPICAL PROPERTIES:

Appearance:	Clear viscous liquid
10% pH:	6.0-6.5
Viscosity:	3400 cps
Solids:	21.6%

Pearlized Liquid Hand Soap

COMPOUND	Wt. %
Water	52.00
Poly Suga®Nate 160P	17.00
Poly Suga®Betaine L	10.00
Sodium Cocoyl Taurate	10.00
Lauryl Sarcosinate	5.00
Cola®Lipid ST	3.00
Cola®Fax CPE	3.00
TOTAL	100.00

PROCEDURE:

Blend ingredients in order given with stirring. Continue to blend until uniform and then cool, then adjust pH as necessary. Add fragrance and preservatives as needed

TYPICAL PROPERTIES:

Appearance:	Pearlized viscous liquid
pH (10% aqueous):	6.0
Viscosity:	12000 cps
Solids:	20.6%

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