

Natural Betaine

Active ingredient with skin and hair conditioning properties

- Naturally derived amino acid, obtained from sugar beet molasses
- skin and hair conditioning
- moisturizing
- improves the skin compatibility of surfactant mixtures
- biodegradable

Personal Care

INCI Name (CTFA name)

Betaine

Chemical and physical properties (not part of specifications)

Appearance (20 °C)	White crystals
Active content	approx. 85 %
Solubility in water	160 g/100 g
Solubility in ethanol	8.7 g/100 g

Properties

Natural Betaine is a naturally occurring product. It can be found in plants and animals, especially in crustacean animals, but as well in the human organism.

Natural Betaine is a pure, non-sensitizing, non-irritating raw material. It is derived from sugar beet molasses.

Natural Betaine is hygroscopic and has moisturizing properties.

Result:

Natural Betaine is an amphoteric compound. It is related to amino acids.

The influence on the skin compatibility in surfactant mixtures has been verified by the RBC Test.

RBC Test

Test formulation	1	2
Sodium Laureth Sulfate	8.4 %	8.4 %
REWOPOL® SB FA 30 B	1.6 %	1.6 %
REWOTERIC® AM 2 C NM	2.0 %	-
Cocamidopropyl Betaine	-	2.0 %
REWODERM® LI 520-70	-	4.0 %
Natural Betaine	0 / 3.5 %	0 / 3.5 %
Water	up to 100 %	

Both formulations were tested according to RBC test, with and without the addition of Natural Betaine (Fig. 1). The addition of 3.5 % Natural Betaine improves the mildness of both formulations. The mildness score (L/D value) is shifted from "irritant" to "moderately irritant".

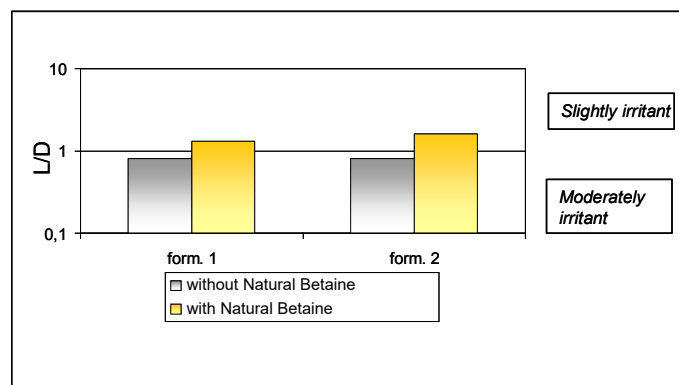


Fig.1: Influence on RBC-Test with Natural Betaine containing surfactant mixtures.

Natural Betaine has additional soft conditioning properties. This has been confirmed in different formulations [1, 2].

Application

Natural Betaine is recommended for use in Rinse off and Skin Care products:

- *Rinse off applications:*
 - Hair shampoos
 - Hair rinses
 - Shower shampoos
 - Baby shampoos
 - Facial cleansing lotions
 - Soap bars
 - Syndet soaps

In these formulations it reduces skin irritation and has a positive influence on the skin feeling as well as the conditioning effect on hair.

- *Skin Care applications:*
 - Body and Facial Care creams and lotions
 - After Shave lotions
 - Sun Care/ After Sun Lotions
 - Deodorants
 - Cream gels

In skin care products Natural Betaine reduces transepidermal water loss and gives the skin a soft, smooth feeling [1].

References

[1] Rigano et al., Cosmetics & Toiletries 115 No. 12, 47-54 (2000)

[2] Woodruff, Cosmetics & Toiletries 117 No. 3, 33-35 (2002)

Preparation

Soluble at 20 – 30 °C in water, easy to dissolve while stirring.

To incorporate Natural Betaine into cosmetic emulsions, it is recommended to add the product as aqueous solution to the already formed emulsion (after the homogenisation step) below 40 °C.

Recommended usage concentration

2 – 10 % **Natural Betaine**

Packaging

6 x 50 kg drums / pallet

Storage and processing recommendation

Store in a cool place in closed packaging. Due to the product's hygroscopic nature it must be kept dry during storage.

Hazardous goods classification

Information concerning

- classification and labelling according to regulations for transport and for dangerous substances
- protective measures for storage and handling
- measures in accidents and fires
- toxicity and ecological effects

is given in our material safety data sheets.

Guide Line Formulations

Clear Conditioning Shampoo	
Sodium Laureth Sulfate, 28 %	32.00 %
ABIL® Quat 3272 (Quaternium-80)	2.00 %
Perfume	0.25 %
Jaguar C-162 (Hydroxypropyl Guar Hydroxypropyl-trimonium Chloride, Rhodia)	0.30 %
Water	52.70 %
Natural Betaine	2.00 %
Cocamidopropyl Betaine	8.00 %
ANTIL® 200 (PEG-200 Hydrogenated Glyceryl Pal- mate; PEG-7 Glyceryl Cocoate)	2.75 %
Preparation: Dissolve the Jaguar C-162 in the water and let it swell. Adjust the pH value of this solution to appr. 5 for a better solubility. Dissolve the ABIL® Quat 3272 and the perfume carefully in the Sodium Laureth Sulfate, add the other ingredients in the given order.	

Facial Cleansing Foam for sensitive skin	
Natural Betaine	3.0 %
Hydroxyethyl Cellulose (Natrosol 250 HHR, Aqualon)	1.0 %
REWOPOL® SB CS 50 B (Disodium PEG-5 Laurylcitrate Sulfosuccinate; Sodium Laureth Sulfate)	15.0 %
Water	81.0 %
Preparation: Mix the components in the given order and homogenize at room temperature. Adjust the pH with 20 % hydrochloric acid to 5.5. Add the required amount preservative.	