

A new class of all-natural ingredients for rinse-off applications

INTENDED USE

Cleansing, solubilizing and foaming additive for gentle personal cleansing formulations

BENEFITS AT A GLANCE

- Powerful cleansing and efficient foaming
- Effective solubilization of essential oils, fragrances and flavors
- Excellent skin compatibility
- Pleasant sensory benefits with a dense and creamy foam that rinses easily from skin
- Sugar based, 100% renewable raw materials
- 100% biodegradable, low aquatic toxicity
- Easy to handle, highly concentrated, hard water resistant

INCI (PCPC NAME)

Glycolipids

CHEMICAL AND PHYSICAL PROPERTIES (NOT PART OF SPECIFICATIONS)

Form	Slightly yellow liquid
Active matter	~50%

PROPERTIES

RHEANCE® One combines powerful cleansing and excellent skin compatibility with unprecedented environmental compatibility. It is 100% based on natural renewable ingredients (sugar).

Since RHEANCE® One is 100% biodegradable, it contributes to the reduction of waste in natural water and marine ecosystems. It exhibits low toxicity to aquatic organisms and has low potential for bioaccumulation.

RHEANCE® One provides outstanding cleansing performance. Figure 1 shows the removal of long-lasting make-up compared to standard solubilizers and water.

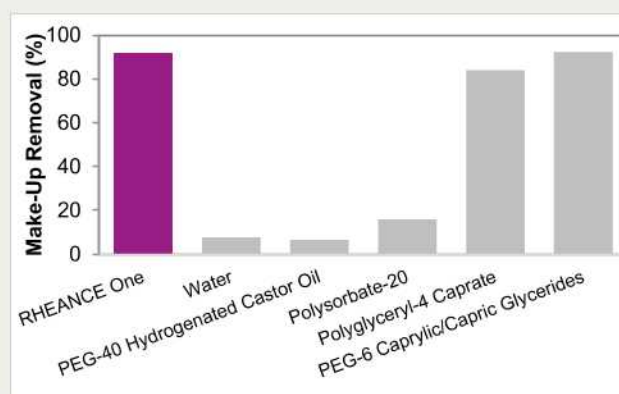


Figure 1: Effective cleansing performance for the removal of long-lasting facial make-up

RHEANCE® One facilitates the incorporation of essential oils into aqueous formulations. Figure 2 compares its solubilizing efficacy with the ones of standard PEG-solubilizers and a PEG-free benchmark.

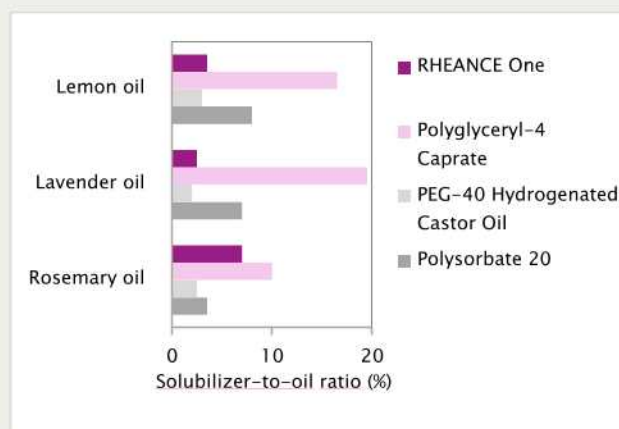


Figure 2: Solubilization of essential oils
1.0% essential oil + x% solubilizer (as is) + slowly add water ad 100%; pH=6.0
x=necessary amount of solubilizer for a crystal clear solution (after ~12 hours at r.t.)

RHEANCE® One is very mild to the skin and mucous membranes. In vitro-mildness assessment results such as red blood cell (RBC) test and Zein test confirm the exceptional mildness of RHEANCE® One. Figure 3 shows the result of the RBC test in comparison to other PEG-free surfactants and Sodium Laureth Sulfate (SLES) as standard.

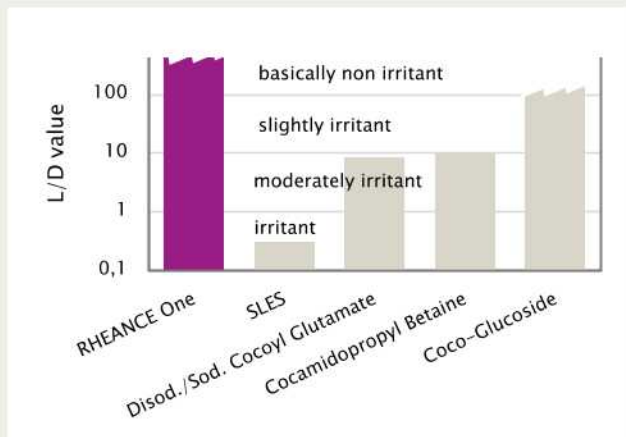


Figure 3: Red blood cell test results – Lysis-to-denaturation ratio (L/D)

In the Zein test RHEANCE® One did not cause a protein denaturation in typical usage concentrations, in contrary to standard surfactants like Sodium Laureth Sulfate or Cocamidopropyl Betaine.

RHEANCE® One combines a high foaming power with a dense and creamy foam structure. The foam kinetics was tested with the SITA equipment and showed a comparable performance of RHEANCE® One with Sodium Laureth Sulfate. Other tested PEG- and Sulfate-free surfactants were clearly outperformed, see figure 4.

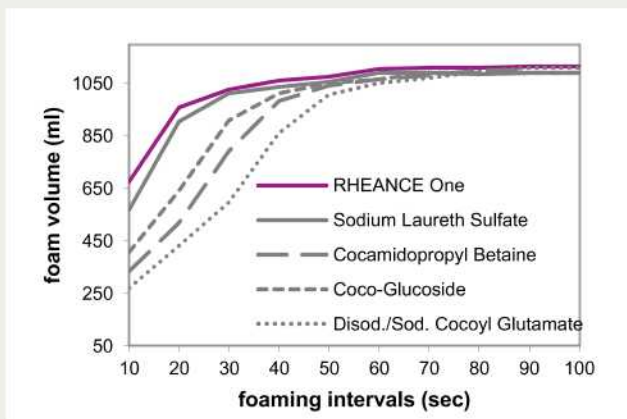


Figure 4: Foam kinetics – SITA method
c=0.5%, T=30 °C, water~10°dH, 1500 rpm, pH=6

Additionally, RHEANCE® One provides a very creamy, dense and stable foam. Tests with the Krüss foam tester showed a higher initial amount of bubbles per mm² as well as a lower initial average bubbles size in µm² compared to Sodium Laureth Sulfate and Cocamidopropyl Betaine.

	initial bubble count per mm ²	initial aver. bubble size (µm ²)
RHEANCE® One	229	4411
Sodium Laureth Sulfate	193	5320
Cocamidopropyl Betaine	162	6345

Table 1: Foam parameters detected with the Krüss foam tester

APPLICATION

RHEANCE® One is suitable for various mild applications, such as

- facial cleansing formulations, like micellar waters, foams, gels or wipes
- oral care formulations, like mouth washes and toothpastes
- baby cleansing formulations
- hair and body shampoos

RECOMMENDED USAGE LEVEL

1 – 8%

PROCESSING HINTS

- RHEANCE® One is a low viscous liquid and therefore easy to handle.
- RHEANCE® One can be used in formulations with pH values between 5.0 and 8. PH optimum is 5.4 – 6.0.
- Viscosities of formulations including higher levels of RHEANCE® One increase with decreasing pH.

STORAGE

RHEANCE® One should be stored between 5°C and 25 °C.

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 case of accidents and fires
- toxicity and ecological effects

is given in our material safety data sheets.

GUIDELINE FORMULATIONS

Gentle micellar cleansing gel, PEG-free AM 19/4.7

A	TEGOSOFT® PC 41 (Polyglyceryl-4 Caprate)	1.00%
	RHEANCE® One	3.30%
	TEGO® Solve 61 (Polyglyceryl-6 Caprylate; Polyglyceryl-3 Cocoate; Polyglyceryl-4 Caprate; Polyglyceryl-6 Ricinoleate)	1.00%
	Perfume	0.05%
	Hexylene Glycol	1.40%
	Glycerin	1.00%
B	Water	ad 100.0%
	TEGO® Natural Betaine (Betaine)	2.00%
	Keltrol CG-SFT (Xanthan Gum)	0.10%
	TEGO® Carbomer 750 HD (Acrylates/C10-30 Alkyl Acrylate Crosspolymer)	0.50%
Z	NaOH (10%)	0.50%
	Verstatil® BOB (Benzyl Alcohol; Caprylyl Alcohol; Benzoic Acid)	1.00%

Preparation:

A: Mix the ingredients in the given order.

B: Dissolve the Xanthan Gum in the water, let it swell. Add TEGO Carbomer 750 HD, homogenize. Add B to A homogeneously, avoid air entrapment. Neutralize / adjust pH with NaOH.

Remarks: Clear, with air bubbles. Viscosity (Brookfield, 25 °C): 3600 mPas. Usage with a cotton pad.

Extra gentle cleansing foam, PEG- and Sulfate-free
NN 168/2

Water	Ad 100.00%
Hydroxypropyl Methylcellulose (2% in water: ~50 mPas)	0.50%
TEGO® Natural Betaine (Betaine)	2.00%
TEGO® Betain 810 (Capryl/Capramidopropyl Betaine)	6.60%
RHEANCE® One	4.40%
ANTIL® Soft SC (Sorbitan Sesquicaprylate)	0.50%
Verstatil® BOB (Benzyl Alcohol; Caprylic Glycol; Benzoic Acid)	1.00%
Perfume	q.s.

Preparation:

Dissolve the Cellulose and TEGO® Natural Betaine in the water and allow to swell. Add remaining ingredients in the given order while stirring. Adjust pH to 6.

Remarks: clear, water-thin. Provides a creamy and stable foam. For application with finger pump foamer (e.g. by Albea).

Mild and foamy cleansing cream
AM 46/8

A	Helianthus Annuus (Sunflower) Seed Oil	50.00%
	ANTIL® Soft SC (Sorbitan Sesquicaprylate)	7.00%
	VARISOFT® EQ 100 (Bis-(Isostearoyl/Oleoyl Isopropyl) Dimonium Methosulfate)	1.00%
B	RHEANCE® One	6.60%
	TEGO® Betain F 50 (Cocamidopropyl Betaine)	7.90%
	Water	ad 100.00%
C	Verstatil® PC (Phenoxyethanol; Caprylic Glycol)	1.00%
Z	Perfume	q.s.

Preparation:

Heat phases A and B up to 60 °C. Blend phase A into phase B and homogenize for 1 minute. Add preservative (phase C) and perfume below 45 °C

Remarks: Rich and creamy texture which provides a creamy foam and an intensive refatting effect. Structured surfactant system. pH = 5.9; viscosity (Brookfield, 22 °C): 10.000 mPas.

Pure micellar water
AM 13/16

RHEANCE® One	5.40%
Water	ad 100.00%
TEGO® Natural Betaine (Betaine)	2.00%
dermosoft® Pentiol eco (Pentylene Glycol)	5.00%
Glycerin	1.00%
Perfume "Firm Skin", IFF	0.05%

Preparation:

Blend the ingredients in the given order. Adjust pH to 6.

Remarks: clear, slightly yellowish liquid.
 in-vitro mildness test result (RBC): basically non-irritant.
 Antimicrobial effectiveness testing: challenge test passed.

Micellar cleansing wipe, refreshing and gentle

NN 162/3

A	TEGO® Solve 61 (Polyglyceryl-6 Caprylate; Polyglyceryl-3 Cocoate; Polyglyceryl-4 Caprate; Polyglyceryl-6 Ricinoleate)	4.00%
	Avocado Oil	0.20%
B	RHEANCE® One	2.80%
	Perfume "Firm Skin", IFF	0.05%
C	Glycerin	3.00%
	Water	ad 100.00%
Z	Citric Acid, 30%	ad pH 5.5
	Verstatil® MBO (Methylpropanediol; Phenoxyethanol; Caprylic Glycol)	1.20%.

Preparation:

Blend phases A and B separately. Slowly add B to A while stirring. Add phase C and stir for 30 minutes. Finally add preservative and adjust pH to 5.5.

Remarks: clear, slightly yellowish. Formulation will clear up overnight. Antimicrobial effectiveness testing: challenge test passed.

A 03/18

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