

Technical Information

# symbio® solv clear plus MB

## Natural source, clear solutions

### Intended use

Solubilizer, co-surfactant

### Benefits at a glance

- Powerful natural solubilizer for perfume and essential oils
- PEG-free
- Low odor and color
- 100% naturally derived
- Compliant with COSMOS
- Pleasant skin feel, non-sticky

### INCI (PCPC name)

Caprylyl/Capryl Glucoside; Aqua; Sodium Cocoyl Glutamate; Glyceryl Caprylate; Citric Acid; Polyglyceryl-6 Oleate; Sodium Surfactin

### Chemical and physical properties (not part of specifications)

Active content	-74%
Appearance	Viscous light, yellow liquid
HLB	~ 16
CMC	0.6 g/l
Surface tension	24.4 mN/m
In-vitro-mildness testing (red blood cell test)	L/D > 100 (basically non-irritant)

### Properties

**symbio® solv clear plus MB** is a powerful naturally derived solubilizer blend for transparent cosmetic products. It provides a powerful PEG-free alternative for the formulation with and without alcohol. The environmentally friendly manufacturing process and the composition of readily biodegradable raw materials is ideal for natural certified cosmetic concepts.

- Excellent solubilization of perfume oils, essential oils

### Performance features of symbio® solv clear plus MB

- Very effective due to low critical micelle concentration
- Can be used for transparent aqueous solutions and surfactant-based products
- Suitable for alcohol-containing and alcohol-free formulations
- Pleasant, non-sticky skin feel
- Contributes to the foaming performance and foam quality of the final product
- Removes make-up efficiently

**symbio® solv clear plus MB** shows excellent solubilizing performance, comparable to PEG-40 Hydrogenated Castor Oil and Polysorbate 20 (see figure 1). Since in many markets, consumers and manufacturers are asking for PEG-free surfactants, **symbio® solv clear plus MB** is a powerful solution to replace ethoxylated solubilizers.

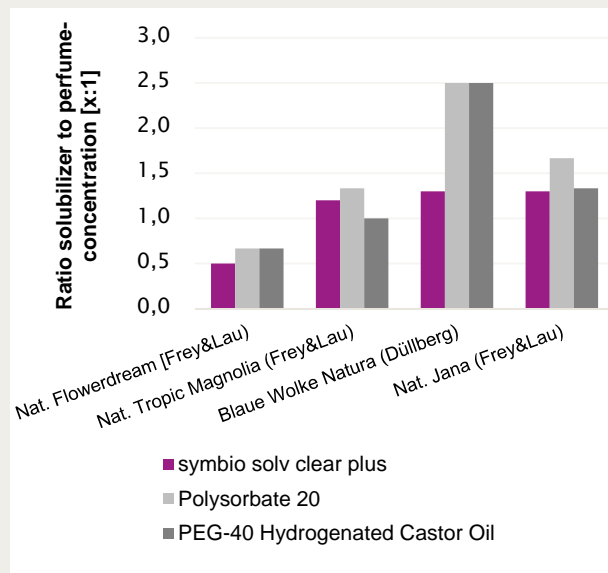


Figure 1: Solubilization of perfume oils – comparison between symbio® solv clear plus MB and benchmark solubilizers (amount of solubilizer blend needed in relation to perfume oil)

## Application

**symbio®solv clear plus MB** can be used as PEG-free solubilizer in cleansing formulations for skin and hair, such as

- Tonics, micellar waters
- Wet wipe solutions
- Body washes, gels
- Foams, sprays

### Usage level

Product concept	Dosage (ratio)
Transparent aqueous solution	1 : 3 - 1 : 5 (oil : solubilizer) max. 4 - 5%
Surfactant-based products	0.5 - 1.5%

## Processing

Manufacturing procedure for aqueous solutions or surfactant-based products (laboratory scale)

1. Pre-mix **symbio®solv clear plus MB** with perfume and other lipophilic substances to be solubilized at room temperature.
2. Add water, the aqueous phase or the surfactant base, to the pre-mix under stirring.
3. Adjust pH to 4.5 - 6.5 if necessary.
4. If required, add ethanol at the end of the formulation process, in small portions.

Note: In surfactant-based products: **symbio®solv clear plus MB** may reduce the viscosity. Adjust viscosity at the end of the formulation process.

Finding the right dosage of **symbio®solv clear plus MB**: dosage depends on specific lipophilic component. For the beginning, start with a ratio of 1 : 3 (one part oil, three parts solubilizer). If the solution stays milky, increase amount of solubilizer. Restart formulation process in this case.

### Formulation advice

Compatible with	Natural perfumes or essential oils
	Conventional perfume oils
	Lipophilic actives
	Synthetic ester oils
	Ethanol (max. 10%)
Incompatible with	Alcohol-free, transparent concepts
	Non-ionic conditioning agents
	Vegetable oils
	Cationic compounds

- Working with ethanol (max. 10%): if turbid after ethanol addition, it might help to add some more solubilizer afterwards.
- In case of pH drift, use buffer system (e. g. Tri-Sodium Citrate).

## Storage

Store at temperatures between 5 °C - 30 °C in original closed package.

## Hazardous goods classification

Information concerning

- classification and labelling according to regulations for transport of chemicals
- protective measures for storage and handling
- measures in case of accidents and fire
- toxicological and ecotoxicological effects

is given in our safety data sheets.

## Guideline formulations

### Natural Refresing Micellar Water (L014-237.6-0118)

#### Phase A

Water	Ad 100.00%
Glycerin	5.00%
dermofeel® Pentiol eco (Pentylene Glycol)	3.50%

#### Phase B

symbio®solv clear plus MB	1.50%
Perfume	0.20%

### Preparation

1. Mix phases A and B separately.
2. Add phase A under stirring to phase B.
3. Adjust pH if necessary.

### Remarks

- Less is more: few ingredients – high efficacy
- Efficient make-up removal, gentle to the skin
- Clear, colorless liquid, pH 5.5
- In vitro mildness test result (RBC): L/D > 100 (basically non-irritant)
- Micellar size (DLS):  $\approx 3.5$  nM
- Microbiological stability: challenge test passed
- Natural content  $c_n$  (incl. water, ISO 16128): 90.5%
- Natural origin content  $c_{no}$  (incl. water, ISO 16128): 100.0%
- Perfume not considered for calculation of  $c_n$  and  $c_{no}$

### Micellar cleansing foam (AM 67/1)

#### Phase A

TEGO® Solve 61 MB (Polyglyceryl-6 Caprylate; Polyglyceryl-4 Caprate; Polyglyceryl 6 Ricinoleate)	4.00%
Prunus Amygdalus Dulcis (Almond) Oil	0.20%
symbio®solv clear plus MB	1.70%
Bisabolol	0.10%

#### Phase B

Water	Ad 100.00%
Glycerin	3.00%
Verstatil® BOB (Benzyl Alcohol; Caprylyl Glycol; Benzoid Acid)	1.00%
NaOH, 20%	Ad pH

### Preparation

Blend ingredients of phase A and stir for a few minutes. Add the water while stirring (slowly at the beginning). Add Glycerin and Verstatil® BOB and adjust the pH value to 5.5 with NaOH. The formulations turns clear at the end of the processing.

### Remarks

- Cleanses and soothes the skin
- Removes make-up efficiently
- For use in a finger pump foamer
- Clear, colorless liquid, pH 5.5
- Natural content  $c_n$  (incl. water, ISO 16128): 91.9%
- Natural origin content  $c_{no}$  (incl. water, ISO 16128): 100.0%
- Glycerin not considered for calculation of  $c_n$  and  $c_{no}$

### Purifying Shampoo (SV 320/1)

Sodium Laureth Sulfate, 70%	6.40%
TEGO® Betain P 50 C (Cocamidopropyl Betaine)	4.00%
RHEANCE® One (Glycolipids)	2.00%
symbio®solv clear plus MB	3.00%
ANTIL® SPA 80 (Isostearamide MIPA; Glyceryl Laurate)	0.50%
Water	Ad 100.00%
Polyquaternium-10	0.20%
ANTIL® 200 (PEG-200 Hydrogenated Glyceryl Palmate; PEG-7 Glyceryl Cocoate)	2.00%
NaCl	1.20%
Verstatil® SL non GMO (Aqua; Sodium Levulinate; Potassium Sorbate)	1.50%
Perfume	0.20%

### Preparation

Dissolve PQ-10 in the water. Blend ingredients in the given order.

### Remarks

Clear. pH = 5.5. Viscosity (Brookfield, 25 °C):  
~ 4 900 mPas.

Microbiological safety: challenge test passed.

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