

TEGOSOFT® APM

Very high polar cosmetic oil with excellent thickening properties for surfactant formulas

- Emollient ether with low pour point
- Effective solubilizer
- Excellent thickening properties in shampoos and body washes
- Improves the foam creaminess and skin feel during application of body washes
- Good slip agent in cosmetic sticks
- Based on a vegetable raw ingredient

Personal Care

INCI Name (PCPC Name)

PPG-3 Myristyl Ether

Chemical and physical properties (not part of specifications)

Form, Appearance (20 °C)	almost colorless clear liquid
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Further product information (not part of specifications)

Water content (%)	approx. 0.4
Viscosity at 25 °C according to Höppler (mPas)	approx. 25
Surface tension at 25 °C according to ring method (mN/m)	approx. 30
Spreadability	high spreading
Polarity	very high polarity
Pour point following DIN ISO 3016 (°C)	approx. 0
Solubility in	
Water	Insoluble
Glycerin	Insoluble
Propylene Glycol	Dispersible
Ethyl Alcohol	Soluble
Mineral Oil	Soluble
Vegetable Oil	Soluble
Surfactant formulas	Soluble

Properties

TEGOSOFT® APM is a very high polar, liquid cosmetic oil with good solubilizing and caring properties. It is miscible with other cosmetic oils and fats.

In surfactant based formulas like shampoos and body washes it is clearly soluble up to a certain point and has excellent thickening properties. Due to its high viscosity and low pour point, it is very easy to process and can be added to the surfactant formula in every production step.

Thickening

Figure 1 shows an overview of the thickening efficacy of a typical surfactant system, e.g. 9% SLES / 3% CAPB / 0.7% NaCl. The graph indicates the concentration of thickener, which was needed to achieve the viscosity of 3500 mPas. TEGOSOFT® APM shows increased performance over more commonly used surfactant thickeners.

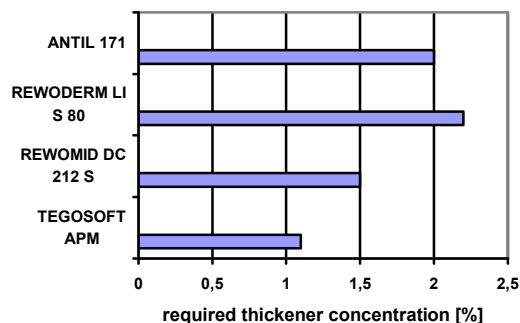


Figure 1: Thickening efficacy of different surfactant thickeners:

ANTIL® 171 = PEG-18 Glyceryl Oleate/Cocoate
REWODERM® LI S 80 = PEG-200 Hydrogenated Glyceryl Palmate; PEG-7 Glyceryl Cocoate
REWOMID® DC 212 S = Cocamide DEA

TEGOSOFT® APM provides a good stabilizing effect of dispersed particles such as pearling agents.

Improvement of foam and skin feel

TEGOSOFT® APM improves the foam creaminess and skin feel in rinse-off applications. The results of a sensory hand wash test (10 person panel) with surfactant formulations which include PEG-7 Glyceryl Cocoate as the market standard are shown in Figure 2. For both foam and skin feel properties, TEGOSOFT® APM outperforms the standard.

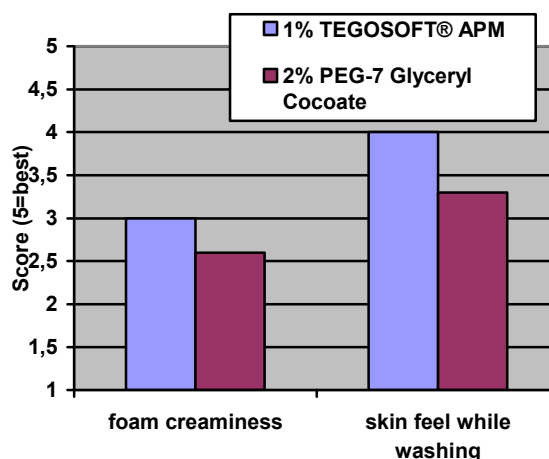


Figure 2: Results of a sensory hand wash test with a 10 person panel. Surfactant base: 10% SLES / 3% CAPB / 0.7% NaCl

Solubilizing

TEGOSOFT® APM provides efficient solubilizing properties in surfactant formulas. It outperforms PEG-7 Glyceryl Cocoate (TEGOSOFT® GC) and is comparable with the well known solubilizer, Laureth-4 (TEGO® Alkanol L 4). *Figure 3* shows the amount of clearly solubilized Isopropyl Myristate (TEGOSOFT® M) in a surfactant base plus 0.5% of the respective additive.

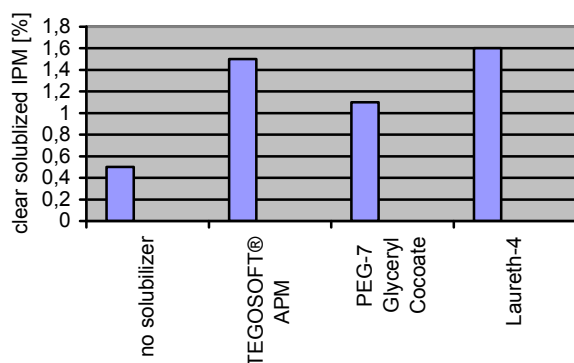


Figure 3: Amount of clearly solubilized Isopropyl Myristate (IPM) in a surfactant base: 11.25% SLES / 3.75% CAPB / 0.5% additive.

Application

TEGOSOFT® APM is suitable for

- Surfactant based formulas such as body washes and shampoos
- AP/Deo formulas such as transparent sticks, roll-ons, sprays
- Skin care products (creams, lotions, sprays)
- Cold and hot processed hair conditioners
- Colognes and toilet waters

Recommended usage concentration

The usage concentration may vary between 1% and 80% TEGOSOFT® APM depending on the application, e.g.

- 0.5 – 2.0% in body washes and hair shampoos/conditioners
- 5 – 80% in AP/Deo sticks
- 25 – 50% in AP/Deo roll ons
- 2 – 4% in AP/Deo sprays
- 3 – 10% in skin care creams and lotions

Packaging

724 kg pallet (4 x 181 kg drum)

Storage and processing recommendation

Storage temperature: 10 – 40 °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 accidents and fires
- toxicity and ecological effects

is given in our material safety data sheets.

Guideline formulations

Moisturizing Body Wash WP 9/20	
Sodium Laureth Sulfate (28%)	30.0%
TEGOSOFT® PC 31 (Polyglyceryl-3 Caprate)	0.3%
ABIL® B 8832 (Bis-PEG/PPG-20/20 Dimethicone)	0.3%
Perfume	0.3%
Water	51.9%
REWOTERIC® AM C (Sodium Cocoamphoacetate)	10.0%
Citric Acid Monohydrate	0.5%
REWODERM® LI S 80 (PEG-200 Hydrogenated Glyceryl Palmate; PEG-7 Glyceryl Cocoate)	3.2%
TEGO® Pearl N 300 (Glycol Distearate; Laureth-4; PEG-7 Glyceryl Cocoate)	2.0%
TEGOSOFT® APM	1.5%
Preservative	q.s.
Preparation: Blend the ingredients in the given order.	

Transparent Body Wash SG 1097/13	
Sodium Laureth Sulfate (28%)	30.00%
Perfume	0.25%
REWOPOL® SB FA 30 B (Disodium Laureth Sulfosuccinate)	5.0%
Water	50.97%
Guar Hydroxypropyltrimonium Chloride	0.09%
Citric Acid (20%)	0.04%
TEGO® Betain F 50 (Cocamidopropyl Betaine)	12.00%
TEGOSOFT® APM	1.65%
Preservative	q.s.
Preparation: 1. Dissolve the Guar Hydroxypropyltrimonium Chloride in the water including the Citric Acid. 2. Blend the ingredients in the given order.	

O/W Cream against Blemished Skin WR 16/01-110	
Phase A	
TEGO® Care 450 (Polyglyceryl-3 Methylglucose Distearate)	2.00%
TEGIN® Pellets (Glyceryl Stearate SE)	2.00%
TEGO® Alkanol 1618 (Cetearyl Alcohol)	3.00%
Stearic Acid	0.50 %
TEGOSOFT® TN (C12-15 Alkyl Benzoate)	4.00 %
TEGOSOFT® APM	3.00 %
Cyclomethicone	10.00 %
Phytosphingosine (Phytosphingosine)	0.20 %
Phase B	
Glycerin	3.00%
Water	71.12%
Phase C	
Sodium Hydroxide (10% in water)	0.43%
Phase D	
TEGO® Carbomer 134 (Carbomer)	0.15%
TEGOSOFT® OP (Ethylhexyl Palmitate)	0.60%
Phase Z	
Preservative, Perfume	q.s.
Preparation: 1. Heat phases A and B separately to approximately 90 °C. 2. Add phase A to phase B with stirring. ¹⁾ 3. Homogenize. 4. Cool with gentle stirring to approximately 70 °C and add phase C with gentle stirring. 5. Add phase D at approximately 60 °C and homogenize for a short time. 6. Cool with gentle stirring below 30 °C. ¹⁾ Important: If phase A has to be charged into the vessel first, phase B must be added without stirring .	

W/O Lotion with Phytosphingosine SLC WR 3/04-12a	
Phase A	
ISOLAN® GPS (Polyglyceryl-4 Diisostearate/ Polyhydroxystearate/Sebactate)	3.0%
Hydrogenated Castor Oil	0.3%
Microcrystalline Wax (Paracera M, Paramelt B.V.)	0.2%
TEGOSOFT® M (Isopropyl Myristate)	6.0%
TEGOSOFT® TN (C12-15 Alkyl Benzoate)	6.8%
TEGOSOFT® APM	6.0%
TEGOSOFT® DEC (Diethylhexyl Carbonate)	2.0%
Tocopheryl Acetate	0.5%
Phytosphingosine SLC (Salicyloyl Phytosphingosine)	0.2%
Phase B	
Glycerin	3.0%
Allantoin	0.1%
Panthenol	0.5%
Magnesium Sulfate Heptahydrate	1.0%
LACTIL® (Sodium Lactate; Sodium PCA; Glycine; Fructose; Urea; Niacinamide; Inositol; Sodium Benzoate; Lactic Acid)	2.0%
Water	68.4%
Phase Z	
Preservative, Perfume	q.s.
Preparation:	
<ol style="list-style-type: none"> 1. Heat phase A to 85 – 90 °C. 2. Add phase B (80 °C or room temperature) slowly while stirring. 3. Homogenize for a short time. 4. Cool with gentle stirring below 30 °C and homogenise again. 	

Premium Facial Cleansing Foam FM 12036	
REWOPOL® SB CS 50 B (Disodium PEG-5 Laurylcitrate Sulfosuccinate; Sodium Laureth Sulfate)	8.0%
REWOTERIC® AM C (Sodium Cocoamphoacetate)	12.0%
TEGO® Betain 810 (Capryl/Capramidopropyl Betaine)	2.0%
TEGOSOFT® PC 31 (Polyglyceryl-3 Caprate)	0.3%
TEGOSOFT® APM	0.5%
Water	77.3%
Panthenol	0.2%
TEGO® Cosmo C 100 (Creatine)	0.5%
ABIL® Soft AF 100 (Methoxy PEG/PPG-7/3 Aminopropyl Dimethicone)	0.2%
Preparation:	
Mix the ingredients in the given order. Adjust the pH value to 5.5 with Citric Acid.	

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(Status: April, 2008)