

ABIL® B 8832

Non-ionic silicon surfactant –
conditioning agent for skin and hair cleansing products

- improves skin feel
- substantive to hair or skin proteins
- W/Si co-emulsifier
- emulsifier for silicone fluids
- improves the combability of hair

Personal Care

INCI Name (CTFA Name)

Bis-PEG/PPG-20/20 Dimethicone

Chemical and physical properties (not part of specifications)

Form	viscous liquid
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A slight opalescence of the product doesn't restrict its property.

Properties

ABIL® B 8832 is a non-ionic surfactant with a balanced hydrophilicity. Due to that it is substantive to polar surfaces such as hair or skin proteins. In W/Si emulsions ABIL® B 8832 will contribute to the rheology and gel strength of the formulation.

Application

Skin care

- smoothes the skin
- soft skin feel
- moisturizes
- refatting

ABIL® B 8832 has good refatting and slip when incorporated into personal cleansers. The skin feels smooth and soft with a "light" conditioning effect. The pleasant skin effect is proven by a preference study on a shower gel formulation:

Preference study shower gel			
Test formula	Control	ABIL® B 8832	
Water	50.9	50.4	
Tetrasodium EDTA	0.1	0.1	
Ammonium Laureth Sulfate (2M.EO) 30 %	25.0	25.0	
Ammonium Lauryl Sulfate (30 %)	15.0	15.0	
TEGO® Betain F 50	8.0	8.0	
ANTIL® 141 liquid	1.0	1.0	
ABIL® B 8832	-	0.5	
Results: 20 Member Panel Washing			
Preferences	Control	ABIL® B 8832	none
better foam	2	15	3
smooth/silky/soft	4	13	3
clean rinse	4	6	10
moisturizing/conditioning	3	13	4
Conclusion			
ABIL® B 8832 has positive benefits when used in a cleansing preparation.			

The pleasant skin feel of ABIL® B 8832 is mainly caused by a reduced skin roughness after application. With ABIL® B 8832 a much lower skin roughness is measured in comparison with PEG-7 Glyceryl Cocoate. For this purpose both products were formulated at 4 % level into 14 % SLES. The effect of three applications on skin was measured with the FOITS method (fast optical in-vivo topometry of human skin, Rohr et al., 1998). The result is measurably smoother skin.

Hair care

- better combing - wet/dry
- gloss
- silky feel

ABIL® B 8832 imparts a silky feel to hair. It provides good wet and dry combing properties. It also can facilitate the distribution of a charged species (e.g. cationic conditioners) on the hair.

Nail care

- water based resins - film levelling
- color improvement
- long wear

ABIL® B 8832 can contribute to gloss and levelling of the lacquer. It contributes to improved pigment dispersion.

Emulsions

- viscosity adjustment - W/O clear emulsion gels
- emulsification of silicone fluids for surfactant systems

ABIL® B 8832 can be used to adjust the viscosity in W/Si emulsion gels based on ABIL® EM 90 and ABIL® EM 97 S. Using ABIL® B 8832 the final gels have better, softer and less greasy application properties.

Recommended usage concentration

- hair care products 0.50 - 3.0 %
- skin care 0.25 - 2.0 %
- nail care 0.50 - 3.0 %
- emulsions 0.05 - 0.5 %

Packaging

200 kg drum

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.

Guide Line Formulations

Soft and Silky Body Wash	
Water	51.9 %
Tetrasodium EDTA	0.1 %
Sodium Laureth Sulfate (28 % 2M.EO)	18.0 %
Sodium Trideceth Sulfate	15.0 %
ANTIL® 171 (PEG-18 Glyceryl Oleate Cocoate)	2.0 %
Citric Acid (25 % solution)	to pH 6.5
ABIL® B 8832	0.5 %
Preservatives	q.s.
Color	q.s.
Fragrance	q.s.
Lauryl Glucoside	6.2 %
TEGO® Betain F 50 (Cocamidopropyl Betaine)	6.3 %
Sodium Chloride (25 % solution)	q.s.
Preparation:	
1. Heat water to 40 - 50 °C.	
2. Combine ingredients in order - mixing well between additions.	
3. Adjust pH and viscosity.	

Rich Cleansing Shampoo	
Water	46.4 %
Tetrasodium EDTA	0.1 %
Sodium Lauryl Sulfate (28 %)	15.0 %
Sodium Laureth Sulfate (28 % 2M.EO)	25.0 %
TEGOSOFT® GC (PEG-7 Glyceryl Cocoate)	3.0 %
ABIL® B 8832	0.5 %
Preservatives	q.s.
Color	q.s.
Fragrance	q.s.
Citric Acid (25 % solution)	to pH 6.0
ANTIL® 171 (PEG-18 Glyceryl Oleate Cocoate)	2.0 %
TEGO® Betain F 50 (Cocamidopropyl Betaine)	8.0 %
Sodium Chloride (25 % solution)	q.s.
Preparation:	
1. Add the ingredients in order. Mix until uniform between additions.	
2. Adjust pH with the Citric Acid.	
3. Adjust viscosity with the Sodium Chloride.	

Clear AHA Gel DA-103	
Phase A	
ABIL® EM 97 S (Bis-PEG/PPG-14/14 Dimethicone)	3.00 %
ABIL® EM 90 (Cetyl PEG/PPG-10/1 Dimethicone)	1.00 %
ABIL® OSW 5 (Cyclopentasiloxane (and) Dimethiconol)	1.00 %
TEGOSOFT® M (Isopropyl Myristate)	3.00 %
Cyclopentasiloxane	14.00 %
Phenyl Trimethicone (20 mPas)	1.00 %
ABIL® B 8832	0.25 %
Fragrance	q.s.
Phase B	
Deionized Water	20.25 %*
Magnesium Sulfate	0.80 %
Propylene Glycol	50.10 %*
Lactic Acid (85 %)	1.00 %
PEG-30 Glyceryl Laurate	0.30 %
SD Alcohol 40	4.30 %
Preservative	q.s.
Sodium Hydroxide (10 % aqueous solution) adjust pH to 4.0 - 4.5	q.s.
*see preparation step 4	
Preparation:	
1. Add the raw materials of phase A, mixing to uniformity at room temperature.	
2. Add the raw materials of phase B to a second vessel, mixing to uniformity. The active salt should be mixed to a clear colorless solution.	
3. Adjust the pH of phase B to 4.0 - 4.5 using Sodium Hydroxide.	
4. Measure the refractive indices of both phases. Adjust phase B with either propylene glycol to raise or water to lower the refractive index of phase B to match the refractive index of phase A.	
5. Slowly stream phase B into phase A with slow (300 rpm) multiblade mixing. The addition rate should match the agitation, not allowing the water to pool on the emulsion's surface. After the addition of the water phase is complete, increase the agitation rate to 1,200 rpm for a few minutes. This will build the viscosity of the mixture to a low viscosity, flowing gel.	
6. Homogenize until gel is formed.	

Clear Extra Conditioning Hair Gel AF-119	
Phase A	
ABIL® EM 97 S (Bis-PEG/PPG-14/14 Dimethicone)	2.0 %
ABIL® EM 90 (Cetyl PEG/PPG-10/1 Dimethicone)	1.0 %
ABIL® OSW 5 (Cyclopentasiloxane (and) Dimethiconol)	6.5 %
TEGOSOFT® P (Isopropyl Palmitate)	0.5 %
Cyclopentasiloxane	17.0 %
Phenyl Trimethicone (20 mPas)	2.5 %
ABIL® B 8832	1.5 %
Fragrance	q.s.
Phase B	
Deionized Water	30.0 %*
Magnesium Sulfate	1.0 %
Propylene Glycol	31.0 %*
Hexylene Glycol	4.0 %
Glycerin USP	3.0 %
Preservative	q.s.
*see preparation step 3	
Preparation:	
<ol style="list-style-type: none"> 1. Add the raw materials of phase A, mixing to uniformity at room temperature. 2. Add the raw materials of phase B to a second vessel, mixing to uniformity. The active salt should be mixed to a clear colorless solution. 3. Measure the refractive indices of both phases. Adjust phase B with either propylene glycol to raise or water to lower the refractive index of phase B to match the refractive index of phase A. 4. Slowly stream phase B into phase A with slow (300 rpm) multiblade mixing. The addition rate should match the agitation, not allowing the water to pool on the emulsion's surface. After the addition of the water phase is complete, increase the agitation rate to 1,200 rpm for a few minutes. This will build the viscosity of the mixture to a low viscosity, flowing gel. 5. Homogenize until gel is formed. 	

Antiperspirant Gel with 20 % active Al/Zr GA-102	
Phase A	
ABIL® EM 97 S (Bis-PEG/PPG-14/14 Dimethicone)	2.40 %
Dimethicone (50 cSt)	0.25 %
ABIL® Wax 9801 (Cetyl Dimethicone)	0.50 %
TEGOSOFT P (Isopropyl Palmitate)	1.50 %
Cyclopentasiloxane	12.00 %
ABIL® B 8832	0.50 %
Phase B	
Aluminium Zirconium Tetrachloro- hydrex Gly (36 % solution)	55.60 %
Propylene Glycol	20.00 %*
Water	7.25 %*
Preservative	q.s.
*see preparation step 3	
Preparation:	
<ol style="list-style-type: none"> 1. Add the raw materials of phase A, mixing to uniformity at room temperature. 2. Add the raw materials of phase B to a second vessel, mixing to uniformity. The active salt should be mixed to a clear colorless solution. 3. Measure the refractive indices of both phases. Adjust phase B with either propylene glycol or water to match the refractive index of phase A. The refractive indices should agree to the fourth decimal place to total clarity. 4. Slowly stream phase B into phase A with slow (300 rpm) multiblade mixing. The addition rate should match the agitation, not allowing the water to pool on the emulsion's surface. After the addition of the water phase is complete, increase the agitation rate to 1,200 rpm for a few minutes. This will build the viscosity of the mixture to a low viscosity, flowing gel. 5. Homogenize the mixture at a low rate. Mix until a firm (shearable) gel is obtained. 	

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