

Concentrated Cocamidopropyl Betaine

INTENDED USE

Surfactant

BENEFITS AT A GLANCE

- Preservative-free
- High active concentration
- Best purity
- Mild
- Good foaming properties
- Easy to be thickened
- Synergistic thickening effect

INCI (PCPC NAME)

Cocamidopropyl Betaine

CHEMICAL AND PHYSICAL PROPERTIES (NOT PART OF SPECIFICATIONS)

Form	clear, low-viscous liquid
Color	light
Active matter	~ 38%

PROPERTIES

TEGO® Betain F 50 is higher concentrated than common products with 30% active matter.

Figure 1 shows the solids content above which pure aqueous amidoalkyl betaine solutions turn to gel. This solids content value is shown as a function of the alkyl chain length.

While standard CAPB is a gel at a solids level above 37%, **TEGO® Betain F 50** remains liquid and easy to handle up to more than 48% solids.

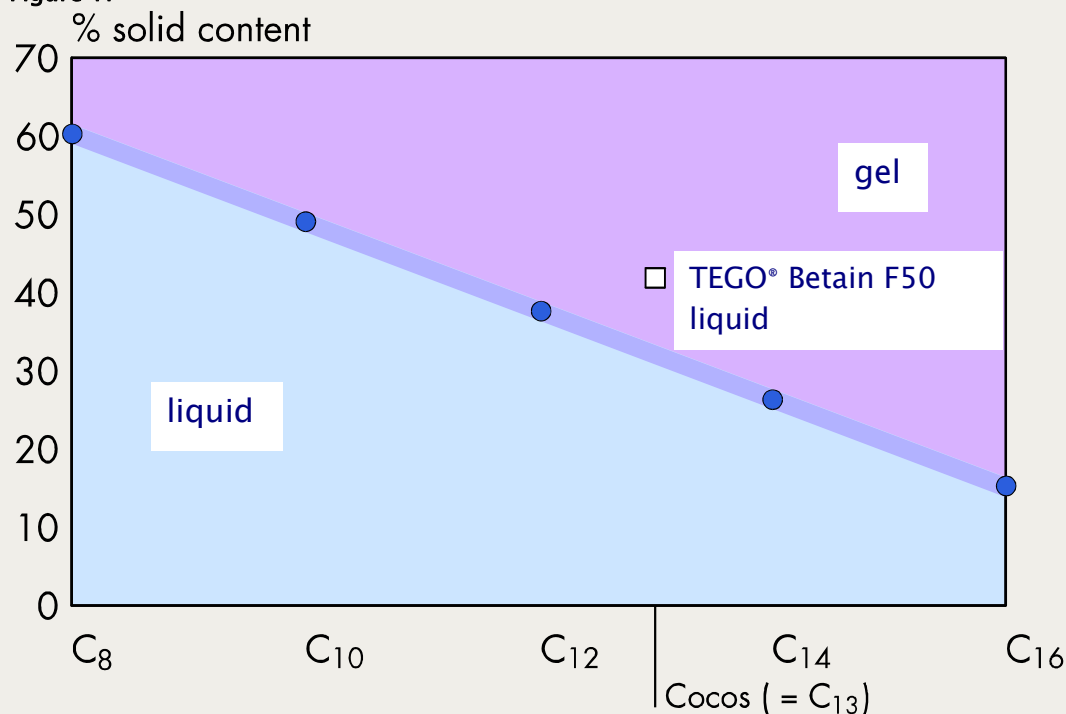
Due to a unique process it is possible to improve the purity of this product significantly. **TEGO® Betain F 50** is characterized by a very low level of amidoamine and chloroacetic acids.

A good microbiological stability is obtained by the relatively high solids level. Due to this **TEGO® Betain F 50** is delivered even in "bulk" without any preservatives. This increases the variability for formulation.

All technical properties relevant to application characteristics are identical with the common cocamidopropyl betaines.

The elevated active concentration provides reduced storage and transport expenses.

Figure 1:



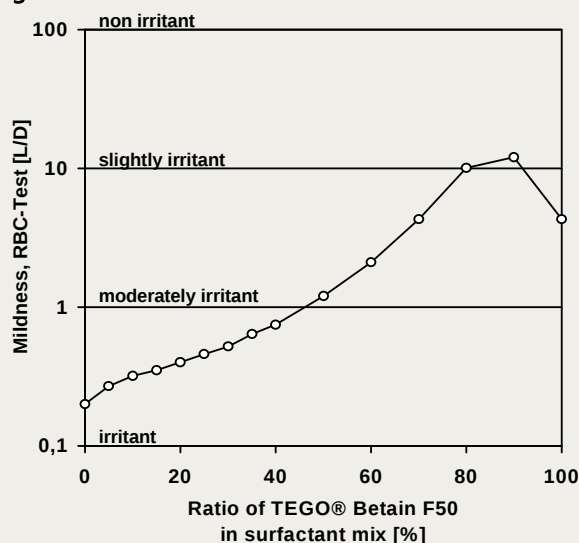
APPLICATION

TEGO® Betain F 50 is used as very mild amphoteric surfactant in all products for skin and hair cleansing, like shampoos, shower and foam baths and liquid soaps.

Fig. 2 shows the mitigating effect to SLES by **TEGO® Betain F 50**. These data are recorded by in-vitro RBC Test (*Pape et al., Drug Res. 40, 498 (1990)*).

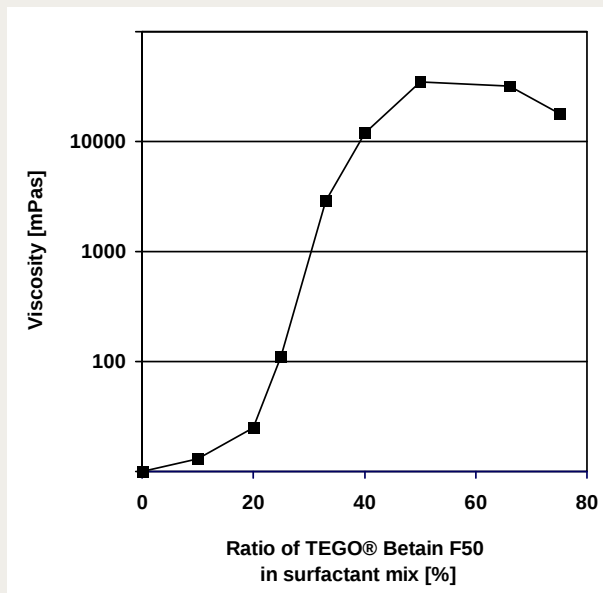
With increasing ratio of **TEGO® Betain F 50** in the surfactant mixture the mildness is increasing. Best mildness is obtained with 80 to 90% **TEGO® Betain F 50** in surfactant actives.

Figure 2:



TEGO® Betain F 50 provides a strong thickening effect to surfactant solutions. Figure 3 shows the viscosity of surfactant solutions with 15 % active at pH 6. The surfactant mixture is SLES with **TEGO® Betain F 50**. Above a ratio of 30 % **TEGO® Betain F 50** no additional thickening agent is required.

Figure 3:



TEGO® Betain F 50 provides good lather properties. The foam gets creamy and longer lasting.

PACKAGING

1000 kg container (EU standard)
880 kg pallet (4 x 220 kg drum; except EU)

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

"Shower & Cream" FM 11068

Phase A

Water	35.0%
Hydroxypropyl Guar Hydroxypropyltrimonium Chloride (Jaguar C-162)	0.3%

Phase B

Sodium Laureth Sulfate (28%)	33.0%
Glycerin	3.0%
TEGO® Betain F 50 Cocamidopropyl Betaine	10.0%
TEGOSOFT® GMC 6 (PEG-6 Caprylic/Capric Glycerides)	1.0%
VARISOFT® PATC (Palmitamidopropyltrimonium Chloride)	1.5%
ANTIL® HS 60 (Cocamidopropyl Betaine; Glyceryl Laurate)	3.0%
TEGO® Pearl N 300 (Glycol Distearate; Laureth-4; Cocamidopropyl Betaine)	3.0%

Phase C

Water	10.0%
Styrene/Acrylates Copolymer (Acusol OP 301)	0.2%

Preparation:

Disperse Jaguar C-162 in water for 10 minutes. Neutralize with Citirc Acid 20 %. Then blend the ingredients of B in the given order to A while stirring. Finally add preservatives as required.

Conditioning Shampoo, PEG-free FM 11129/

REWOTERIC® AM C (Sodium Cocoamphoacetate)	15.0%
REWOPOL® SB F 12 P (Disodium Lauryl Sulfosuccinate)	3.2%
Water	64.2%
TEGO® Betain F 50 (Cocamidopropyl Betaine)	7.0%
ANTIL® HS 60 (Cocamidopropyl Betaine; Glyceryl Laurate)	7.6%
TEGOSOFT® LSE 65 K Soft (Sucrose Cocoate)	2.5%
ABIL® Quat 3272 (Quaternium-80)	0.5%

Preparation:

Mix the ingredients in the given order at ~30 °C.
Adjust the pH value with Citric Acid to 6.1. Finally
add preservatives as required.

Disclaimer

This information and all further technical advice is based on our present knowledge and experience. However, it implies no liability or other legal responsibility on our part, including with regard to existing third party intellectual property rights, especially patent rights. In particular, no warranty, whether express or implied, or guarantee of product properties in the legal sense is intended or implied. We reserve the right to make any changes according to technological progress or further developments.

The customer is not released from the obligation to conduct careful inspection and testing of incoming goods. Performance of the product described herein should be verified by testing, which should be carried out only by qualified experts in the sole responsibility of a customer. Reference to trade names used by other companies is neither a recommendation, nor does it imply that similar products could not be used. (Status: April, 2008)

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Shampoo/Showergel without preservatives C 007/29

Sorbitol (70%)	30.0%
Sodium Olefin (C ₁₄₋₁₆) Sulfonate (37%, pH approx. 13)	21.6%
TEGOSOFT® GC (PEG-7 Glyceryl Cocoate)	2.5%
Water	31.2%
TEGO® Betain F 50 (Cocamidopropyl Betaine)	10.7%
ANTIL® 171 (PEG-18 Glyceryl Oleate/Cocoate)	3.0%
NaCl	1.0%
Citric Acid (10%)	ad pH 4.5

Preparation:

Mix the ingredients in the given order.
Microbiological Challenge Test: passed.

H 02/16

Product Specification

Material **TEGO BETAIN F 50**
Spec. Code **K00 STANDARD**

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Inspection Characteristic	Method	Limit	Unit	Z
Active Matter	GM_0500_01	> = 37.00	%	X
Colour to Hazen	GM_0140_01	< = 150.0	Hazen	X
Solid content	GM_0090_04	> = 44.00	%	X
Sodium Chloride	GM_0160_01	5.8-7.3	%	X
pH-Value as is	GM_0130_01	4.5-5.5		X
Water Content	GM_0080_01	52.000-56.000	%	X

Report on inspection certificate: X = specific/actual value, C = unspecific value/conformity, T = not reported

This document is computer printed and therefore valid without signature.

All warranty claims in respect of the conformity of our product are subject to our General Terms and Conditions of Sale and Delivery. The data listed above reflects the criteria for our internal quality tests. We do not hereby make any express or implied warranty, whether for specific properties or for fitness for any particular application or purpose. All values are valid for the product when despatched from the works.

The Standard Test Methods can be obtained from specialized publishers. Evonik's test methods are available on request.

TEGO® Betain F 50

Product Data Record (PDR)

1. General Information

1.1 Supplier

Evonik Operations GmbH
 Division Nutrition & Care
 Business Line Care Solutions
 Rellinghauser Straße 1-11
 45128 Essen | Germany
personal-care@evonik.com
<https://www.evonik.com/personal-care>

1.2 Product Description

TEGO® Betain F 50 is in full compliance with current Cosmetic Regulation (EC) No 1223/2009.

1.2.1 Raw Material Category/Function

Surfactant

1.2.2 INCI Declaration

Cocamidopropyl Betaine

1.2.3 Composition

Components (INCI EU/US)	Source	Percentage [%]
Cocamidopropyl Betaine*	Vegetable/synthetic	typical conc. 44.2 (43 – 47 %)
Aqua/Water		typical conc. 55 (52 – 56 %)

*Includes active matter (100 % - water [%] - NaCl [%] = typical conc. 38.5 %) and NaCl (typical conc. 6.5 %, see 2.2), excludes Citric Acid (typical conc. 0.8 %, see 1.2.4)

This composition information serves for information of our customers only. It is neither relevant for the composition listing according to Cosmetic Regulation (EC) No 1223/2009, nor does it reflect the chemical composition according to the different chemical regulations in the world which is disclosed in the table "information on ingredients/hazardous components" in the relevant parts of the respective (Material) Safety Data Sheets.

1.2.4 Additives (e.g. Antioxidants, Preservatives)

INCI	CAS No. / REACH Reg. No.	EINECS / EC No.	Content	Function
Citric Acid	77-92-9/01-2119457026-42	201-069-1	typical conc. 0.8 % (0.7 – 0.9 %)	pH buffer

Unless mentioned in our PDR under section 2.2 (By-Products/ Impurities) or 2.3 (CMR Substances), no components which are listed in Annex II of the current Cosmetic Regulation (EC) No 1223/2009 are added to and are not to be expected in the above mentioned product, due to the raw materials and the production process.

2. Production Process

2.1 General Information on the Production Process

Product is obtained by conversion of fats/fatty acids and diamine into amidoamine, followed by reaction with chloroacetic acid to produce betaine.

Description and Origin of plant based materials:
Coconut (Cocos nucifera)

Irradiation: TEGO® Betain F 50 was not irradiated with γ-rays.

TEGO® Betain F 50 is produced in the absence of any animal derived material of any type. Based on the information on the manufacturing process and production site no contamination with BSE/ TSE risk materials is to be expected.

CITES: TEGO® Betain F 50 is not based on raw materials from species listed in CITES appendices.

GMO Status:

The item does not contain moieties from GMO risk crops (including oils and other refined ingredients). During the production no GMOs and derivatives from GMOs are used. All reasonable measures have been taken to avoid cross-contamination with GMOs or derivatives from GMOs.

2.2 By-Product/Impurities

Below listed compound are technically unavoidable by-products or traces of unremovable impurities (e.g. residual solvents). They are not added intentionally.

Information on potentially occurring by - products, impurities and selected substances of general interest known to be CMR are summarized in section "2.3 CMR Substances".

Known by-products and product specific impurities*

Description	Expected values
Sodium chloride	approx. 6.5 %
Glycerol	approx. 2.5 %
Free fatty acid	approx. 2.0 %
Amidoamine / Amidoammonium salts	NMT 0.3 %
Dimethylaminopropylamine (DMAPA)	NMT 10 ppm
Monochloroacetic acid (MCA)	NMT 5 ppm
Dichloroacetic acid (DCA)	NMT 10 ppm
Diethylene glycol (DEG)	not applicable due to manufacturing process
Nitrosamines	not detectable (LOD 15 ppb)

Additional standard parameters**

Description	Expected values
Sum of heavy metals (as Pb)	NMT 20 ppm
As, Cd, Co, Cr, Cu, Hg, Ni, Pb, Sb	each NMT 1 ppm
Residual organic solvents	not applicable
VOC	NMT 3 % according to SR (Swiss Right) 814.018
Pesticides	meets the valid regulatory requirements for limits on agricultural pesticides
Latex	not to be expected in the product due to the raw materials used and the production process

* monitored by dedicated product analysis or statistical testing

** monitored by statistical testing and/or spot checks

2.3 CMR Substances

According to Cosmetic Regulation (EC) No 1223/2009 the use of substances classified as CMR (**C**arcinogenic, **M**utagenic or **R**eprtoxic) substances of category 1A or 1B or 2, under Part 3 of Annex VI to CLP Regulation (EC) No 1272/2008 in cosmetic products shall be prohibited.

Some of the CMR substances mentioned below and listed in Annex VI to CLP Regulation (EC) No 1272/2008 may be used as starting materials or solvents for the production of our cosmetic raw materials and may require reporting under California Proposition 65 or the California Safe Cosmetics Act, SB 484.

The presence of these substances has to be seen as non-intended and it is technically unavoidable in good manufacturing practice. Traces of CMR substances can derive from impurities of the starting materials or the manufacturing process.

CMR Substance	CAS No.	Starting material	Max. concentration/ Remark
Ethylene oxide (EO)	75-21-8	no	
Propylene oxide (PO)	75-56-9	no	
Octamethylcyclotetrasiloxane (D4)	556-67-2	no	
2-Ethylhexanoic acid	149-57-5	no	
n-Hexane	110-54-3	no	
Methyl chloride	74-87-3	no	
Dimethyl sulfate	77-78-1	no	
Dioxane (1,4-Dioxane)	123-91-1	no	
Formaldehyde	50-00-0	no	For more information on formaldehyde please refer to our factsheet available via our intoBeauty website. https://intobeauty.evonik.com/

2.4 "Allergens" according to the Regulation (EC) No 1223/2009

The presence of substances, the mentioning of which is required under the column 'Other' in Annex III of Cosmetic Regulation (EC) No 1223/2009, shall be indicated in the list of ingredients in addition to the terms "Perfume" or "Aroma".

None of those substances have been intentionally added to our cosmetic ingredients or are formed during the manufacturing process according to our knowledge of the chemistry.

An analytical proof for the absence of traces of those substances is not performed in our cosmetic ingredients.

2.5 Food Allergens listed on Annex II of Regulation (EU) No 1169/2011

None of these substances have been intentionally added to our cosmetic raw materials or are formed during the manufacturing process according to our knowledge of the chemistry.

2.6 Nanomaterial

The product is not a nanomaterial according to the definition given by Cosmetic Regulation (EC) No 1223/2009, the Commission Recommendation 2011/696/EU and the French Decree No. 2012-232. For details, a separate statement is available on request.

2.7 Substances of Very High Concern (SVHC)

The candidate list of substances of very high concern is regularly updated and published by ECHA. If applicable, the information on the substance/s from the candidate list, contained in our product in reportable amounts, is included in section 3 of the product related Safety Data Sheet (SDS).

2.8 Country of Origin

TEGO® Betain F 50 is manufactured in: Multisite production, country of origin is related to region of supply.

3. Animal Testing

We hereby confirm that we have never conducted any animal tests with our product TEGO® Betain F 50 nor that we have ordered such tests at third parties or third parties have conducted such tests with our knowledge and acceptance to fulfil the requirements of Cosmetic Regulation (EC) No 1223/2009.

Therefore TEGO® Betain F 50 is in full compliance with Cosmetic Regulation (EC) No 1223/2009.

4. Microbiological Status

Total Viable Count: max. 100 cfu/g

Pathogens*: absent/g

* Pathogens are: Enterobacteria, Pseudomonas, Enterococci, Candida albicans, Staphylococci

5. Shelf Life / Storage Conditions

720 days after production (unopened original packaging)

6. Regulatory Status

6.1 HS-Code: 340219

EU-CN-Code: 34021900

6.2 Regulatory Status (Chemical Regulations)

Europe

Components Chemical Name/INCI	REACH Status*	CAS No.	EINECS / EC No.
1-Propanaminium, 3-amino-N-(carboxymethyl)-N,N-dimethyl-, N-C8-18 (even numbered) acyl derivs., hydroxides, inner salts/Cocamidopropyl Betaine	Reg. No. 01-2119488533-30	97862-59-4	931-296-8

*) Any REACH registration no. referred to in this document covers the substance manufactured and/or imported into the European Community by Evonik Operations GmbH (or by our affiliates or by our EU suppliers). In case that a customer purchases material produced outside the EU which was not imported into the EU before supply and subsequently imports that material into the EU, this is not covered by any of our existing REACH registrations.

Non EU - Countries/ Regions:

Component	Country	Inventory	yes / no	Remark
Cocamidopropyl Betaine	Australia	AIIC	no	
	China	IECSC	yes	
	Canada	DSL	no	Subject to Ministerial Condition (MC) No. 18685
	Canada	NDSL	no	
	Taiwan	TCSI	yes	

In the following countries the relevant authorities currently do not request pre-market approval for cosmetic raw materials:

Brazil, Japan, South Korea, USA

6.2.1 Regulatory Status (Non EU - Cosmetic Regulations)

Other countries:

Component	Country	Inventory	yes / no	Remark
Cocamidopropyl Betaine	China	CFDA	yes	IECIC No. 07555
	Japan	JSQI	no	JSQI specification exists (JSQI No. 522079), but compliance is not controlled
	Japan	JCIA	yes	JCIA No. 551186

7. Toxicology and Ecotoxicology

Refer to our document: "Summary of Toxicological and Ecotoxicological Data"

8. Packaging

1000 kg Container

This information and all further technical advice are based on our present knowledge and experience. However, it implies no liability or other legal responsibility on our part, including with regard to existing third party intellectual property rights, especially patent rights. In particular, no warranty, whether express or implied, or guarantee of product properties in the legal sense is intended or implied. We reserve the right to make any changes according to technological progress or further developments. The customer is not released from the obligation to conduct careful inspection and testing of incoming goods. Performance of the product described herein should be verified by testing, which should be carried out only by qualified experts in the sole responsibility of a customer. Reference to trade names used by other companies is neither a recommendation, nor does it imply that similar products could not be used.