Technical Information

TEGO® Care PS MB

Emulsifier for the formulation of O/W creams and lotions

Intended use

O/W emulsifier

Benefits at a glance

- PEG-free emulsifier for O/W emulsions with pleasant application properties
- Formulations with all kinds of cosmetic oils
- High compatibility with active ingredients
- Stable creams from pH 3.5 up to 8.5; lotions from pH 5.5 to 8.5
- Low usage concentration of 2 – 4%

INCI (PCPC name)

Methyl Glucose Sesquistearate

Further product information (not part of specifications)

Form	Pellets
Color	Light yellow
HLB value	Approx. 12

Application

- TEGO® Care PS MB is a non-ionic, PEG-free emulsifier based on natural renewable raw materials.
- The amount used, referred to the emulsion, is 2 – 3% for lotions, approx. 2 – 4% for creams.
- Creams based on TEGO® Care PS MB show good application and stability properties, if they contain 20 – 40% of oil phase; lotions should contain 15 – 25% of oil phase.
- For the formulation of lotions consistency-enhancers such as 0 – 3% cetyl and/or stearyl alcohol may be needed. To increase heat and cold stability a rheological additive such as 0.15 to 0.20% TEGO® Carbomer 141 should be added.
- For the preparation of creams, depending on the formulation, additional 2 –7% of consistency-enhancers are recommended. Blends of TEGIN® M Pellets MB (glycerol stearate) and stearic acid or cetyl/stearyl alcohol have proved most effective. By addition of water-swelling polymers such as carbomer the amount of consistency-enhancers can be reduced.
- Substances with specific properties, such as UV filters, plant extracts and moisturisers are well tolerated by the emulsion.
- TEGO® Care PS MB is well suited for emulsions containing higher amounts of electrolytes.
- TEGO® Care PS MB is used in slightly acidic to neutral emulsions; however, slightly alkaline adjustments are possible (pH 3.5 to pH 8.5 in creams, pH 5.5 to 8.5 in lotions).

Preparation

TEGO® Care PS MB belongs to the group of the so-called lipid emulsifiers. The HLB value of these emulsifiers is lower in comparison to ethoxylated emulsifiers.

If the production takes place with the for ethoxylates common method (add the hot water phase slowly to the hot oil phase while stirring) it could happen that a water-in-oil emulsion be formed (recognizable by high viscosity and transparent/gel-like appearance). During the cooling process this emulsion converts to an oil-in-water emulsion with great particle size.

We recommend adding the hot oil phase to the hot water phase while stirring. The coarsely dispersed pre-emulsion is then homogenized.

If the above mentioned processing is not possible, we recommend to combine the hot water and oil phase without stirring (to avoid the building of the water-in-oil form) and start afterwards with the homogenization.

During cooling, a constant horizontal and vertical movement of the emulsion has to be ensured. The viscosity of the liquid emulsion increases to a creamy consistency, as the hydrated consistency enhancers solidify.

The dispersion of carbomer in oil (e. g. in mineral oil, decyl oleate, ethylhexyl stearate; not in triglycerides) is added at 60 °C. Then the emulsion is homogenized again.

Perfume, temperature-sensitive substances or electrolyte containing ingredients are added at 35 – 45 °C.

Neutralization of the emulsion is done at approx. 35 °C.

The particle size of the dispersed oil droplets of long-term stable emulsions is approx. 1 – 5 µm. More coarsely dispersed emulsions tend to separate.

Recommended usage concentration

2 – 3% for lotions
2 – 4% for creams

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

O/W Self Taning Lotion (MK 14/01-13)	
Phase A	
TEGO® Care PS MB	3.0%
TEGIN® M Pellets MB (Glyceryl Stearate)	2.5%
Stearyl Alcohol	1.0%
TEGOSOFT® liquid (Cetearyl Ethylhexanoate)	7.0%
TEGOSOFT® P (Isopropyl Palmitate)	3.0%
TEGOSOFT® CT (Caprylic/Capric Triglyceride)	3.0%
Simmondsia Chinensis (Jojoba) Seed Oil	3.0%
Phase B	
Water	59.5%
Glycerin	3.0%
Phase C	
Dihydroxyacetone	3.5%
Erythrulose (Erythrulose)	1.5%
Water	10.0%
Phase Z	
Preservative, Perfume	q.s.

Preparation

1. Heat phases A and B separately to approx. 80 °C.
2. Add phase A to phase B with stirring.[1)]
3. Homogenize.
4. Cool with gentle stirring to approx. 30 °C and add phase C.
5. Homogenize for a short time.

[1)] Important: If phase A has to be charged into the vessel first, phase B must be added without stirring.

Caring O/W Body Lotion (F 1/99)

Phase A	
TEGO® Care PS MB	2.0%
TEGOSOFT® OS (Ethylhexyl Stearate)	5.0%
TEGOSOFT® MM MB (Myristyl Myristate)	1.0%
Mineral Oil (30 mPas)	5.7%
Tocopheryl Acetate	0.5%
Phase B	
Glycerin	3.0%
Panthenol	0.5%
Water	81.0%
Phase C	
TEGO® Carbomer 141 (Carbomer)	0.2%
Mineral Oil (30 mPas)	0.8%
Phase D	
Sodium Hydroxide (10% in water)	0.3%
Phase Z	
Preservative, Perfum	q.s.

Preparation

1. Heat phases A and B separately to approx. 80 C.
2. Add phase A to phase B with stirring.[1)]
3. Homogenize.
4. Cool with gentle stirring to approx. 60 °C and add phase C.
5. Homogenize for a short time.
6. Cool with gentle stirring and add phase D below 40 °C.

1) Important: If phase A has to be charged into the vessel first, phase B must be added without stirring.

O/W PEG-free Soft Cream with Phytosphingosine (without Carbomer) (F 10/01-1)

Phase A	
TEGO® Care PS MB	3.0%
TEGIN® M Pellets MB (Glyceryl Stearate)	2.5%
Stearyl Alcohol	1.5%
TEGOSOFT® OS (Ethylhexyl Palmitate)	9.0%
Decyl Oleate	8.8%
Phythosphingosine (Phytosphingosine)	0.2%
Phase B	
Glycerin	3.0%
Water	72.0%
Phase Z	
Preservative, Perfume	q.s.

Preparation

1. Heat phases A and B separately to approx. 75 °C.
2. Add phase A to phase B with stirring.[1)]
3. Homogenize.
4. Cool with gentle stirring.

1) Important: If phase A has to be charged into the vessel first, phase B must be added without stirring.

A 02/19

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POWER TO CREATE

Product specification

Material **TEGO CARE PS MB**
Spec.Code **K00 STANDARD**

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Inspection Characteristics	Method	Limits	Units	Z
Iodine value	GM_0050_04	< = 5.00	g I/100g	X
pH-Value 5 %	GM_0132_01	7.5-8.5		X
Acid Value	GM_0010_01	15.00-25.00	mg KOH/g	X
Saponification Value	GM_0030_01	127.0-137.0	mg KOH/g	X
Water Content	GM_0080_01	< = 1.50	%	X

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

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This product contributes to the production of certified

sustainable palm oil according to the rules set out

by RSPO Supply Chain Mass Balance (MB).

RSPO Certification Number: RSPO-V-14-13553.

This document is computer printed and therefore valid without signature.

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

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TEGO® Care PS MB

Product data record (PDR)

1. General information

1.1 Supplier

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1.2 Product Description

1.2.1 Raw material category/function

O/W Emulsifier

1.2.2 Ingredients according to INCI

Methyl Glucose Sesquistearate

1.2.3 Composition (INCI)

Components	Source	Percentage
Methyl Glucose Sesquistearate	vegetable / synthetic	100 %

This composition information serves for information of our customers only.
It is neither relevant for the composition listing according to 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 Solvents, preservatives and other additives

INCI	CAS No.	EINECS / EC No.	content	Function
no additives				

Unless mentioned in our PDR under section 2.1 (By products) or 2.2 (CMR), no components which are listed in Annex II of the Regulation (EC) No 1223/2009 and its modifications and updates are added to and are not to be expected in the above mentioned product due to the raw materials used and the production process.

2. Information on production process

General description of production process:
Esterification product

The product is not irradiated.

TEGO® Care PS MB is produced in the strictest absence of any animal derived material of any type.

Residual plant based source (dominant origin of main constituents): rapeseed oil, corn, palm oil

CITES:
TEGO® Care PS MB is not based on raw materials from species listed in CITES appendices.

GMO-Status:
The item contains ingredients derived from rapeseed and corn (including oils and other refined ingredients), but these ingredients are sourced from an "Identity Preserved" programme and can be certified NON-GM.
However max 0.9 % cross-contamination is possible. Any protein or DNA is not present.
Consequently the product will be PCR negative when tested.

2.1 By-products/Impurities

Residual organic solvents	not applicable
Free amines	not applicable
Nitrosamines	not applicable
Monochloroacetic acid	not applicable
Dichloroacetic acid	not applicable
1,4-Dioxane	not applicable
Pesticides	meets the valid regulatory requirements for limits on agricultural pesticides
Total heavy metals	max. 20 ppm
As, Cd, Co, Cr, Hg, Ni, Pb, Sb	Each < 1 ppm
Latex	not to be expected in the product due to the raw materials used and the production process
VOC	< 3 % according to SR (Swiss Right) 814.018

Any by-products are not added intentionally during the process and are technically unavoidable.

2.2 CMR (Carcinogenic, Mutagenic or Reprotoxic)

The use in cosmetic products of substances classified as CMR substances, of category 1A or 1B or 2 under Part 3 of Annex VI to Regulation (EC) No 1272/2008 shall be prohibited.

Further Information:
http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2009:342:0059:0209:en:PDF

Some of the CMR substances mentioned below and listed in Annex VI to 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 Safe Cosmetics Act,

SB 484.

The presence of these prohibited substances has to be seen as non-intended. It is stemming from impurities of the starting materials or the manufacturing process which is technically unavoidable in good manufacturing practice.

CMR substance	Starting material	max. concentration/Remark
Ethylene Oxide	no	
Propylene Oxide	no	
Octamethylcyclotetrasiloxane (D4)	no	
2-Ethylhexanoic Acid	no	
n-Hexane	no	
Methyl Chloride	no	
Dimethyl Sulphate	no	
Formaldehyde	no	Formaldehyde is a ubiquitous material and may be detected in small traces in almost all natural and synthetic products. For details, a separate statement is available on request.

2.3 "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, shall be indicated in the list of ingredients in addition to the terms perfume or aroma.

The cosmetic raw materials and the cosmetic actives supplied by Evonik Personal Care are manufactured without the use of perfumes and fragrances. An analytical proof for the absence in traces of the substances to be mentioned in addition to the terms perfume or aroma is not performed in cosmetic raw materials, which are chemically produced.

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.

2.4 Food Ingredients listed in 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.

2.5 Nanomaterial

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

3. Microbiological status

Total Viable Count	max. 100 cfu/g
Pathogens*	absent/g

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

4. Shelf life / storage conditions

720 days after production (unopened original packaging)

5. Regulatory Status

5.1 HS-Code 294000
EU-CN-Code 29400000

5.2 Regulatory status (chemical regulations)

Europe

Components	REACH status	CAS No.	EINECS / EC No.
Methyl Glucose Sesquistearate	Reg.-No. 01-2119969646-19	not assigned	939-238-3

Other countries/regions

Country		yes / no	Remark
Australia	AICS:	yes	CAS No. 68936-95-8
China	IECSC:	yes	CAS No. 68936-95-8
Canada	DSL: NDSL:	yes	CAS No. 68936-95-8
Taiwan	TCSI:	yes	CAS No. 68936-95-8

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

Brazil, Japan, South Korea, Philippines, USA

5.2.1 Regulatory status (cosmetic regulation)

Country		yes / no	Remark
China	CFDA:	yes	
Japan	JSQI: JCIA:	yes yes	JSQI No. 503088, but specifications not controlled JCIA No. 551650

6. Toxicology and Ecotoxicology

Refer to summary of ecotoxicological and toxicological data

7. Packaging size

600 kg (24 x 25 kg bag)

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.