Technical Information

AXOL® C 62 Pellets MB & dermofeel® GSC SG

Emulsifier for the formulation of cosmetic O/W creams and lotions

Intended use

O/W emulsifier

Benefits at a glance

- PEG-free emulsifier based on vegetable raw materials
- Stable emulsions from pH 5 – 8
- Easy to handle

INCI (PCPC name)

Glyceryl Stearate Citrate

Chemical and physical properties (not part of specifications)	
Form	Pellets
HLB value	Approx. 12

* Note: conglomerates can occur due to filling temperature and packaging pressure.

Properties

- AXOL® C 62 Pellets MB and **dermofeel® GSC SG** are anionic, PEG-free emulsifier based on vegetable raw materials.
- They are suitable for the hot emulsification process of O/W creams and lotions.
- They are easy to handle due to the pelletized product form.
- The emulsifiers form stable emulsions with all commonly used oils for skin care products, e. g. mineral oils, vegetable oils and synthetic esters.
- Substances with specific properties, such as UV filters and moisturisers are well tolerated by the emulsion based on the emulsifiers.
- Emulsions based on AXOL® C 62 Pellets MB and **dermofeel® GSC SG** show a good application and stability profile, if creams contain 20 – 35% and lotions 10 – 25% oil phase.
- The emulsions are distinguished by high stability towards heat and freezing stress; stability between -25 °C and +45 °C is attainable.
- The amount of AXOL® C 62 Pellets MB or **dermofeel® GSC SG** used, referred to the emulsion, is 1.5 – 2.0%.
- AXOL® C 62 Pellets MB and **dermofeel® GSC SG** behave very similar in most formulations regarding the stabilization potential. Due to different raw material grades of the stearic acid, AXOL® C 62 Pellets MB can generate higher emulsion viscosities compared to **dermofeel® GSC SG** depending on the specific formulation.
- As consistency enhancers components such as TEGO® Alkanol 1618 (Cetearyl Alcohol) as well as TEGIN® M Pellets MB (Glyceryl Stearate) or Stearic Acid proved to be most effective.
- Water-swelling organopolymers may improve the freeze stability.
- The pH value of the emulsions based on the emulsifiers can be adjusted from 5.0 to 8.0.
- For buffering the pH value of emulsions, e. g. 0.1% Disodium Phosphate is recommended, especially in the case of higher concentrations of the emulsifiers.

Application

The emulsifiers are especially suitable for O/W creams, lotions and wipes for:

- Facial and body care
- Baby care
- Sunscreens
- After sun care

Preparation

Processing

It is suggested to add AXOL® C 62 Pellets MB and **dermofeel® GSC SG** to the oil phase. We recommend to heat oil phase and water phase separately to approx. 80 °C. Furthermore, 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 formation of a water-in-oil emulsion) and to 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 promoters solidify.

The dispersion of TEGO® Carbomer 141 or other carbomer types in oil is added at 60°C. Then the emulsion is homogenized again for a short time.

Perfume or temperature-sensitive substances are added at 35 – 45 °C.

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

Suggested usage concentration

1.5 – 2.5% AXOL® C 62 Pellets MB or **dermofeel® GSC SG**

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

Care From Nature Body Lotion (AL 10/16-12)

Phase A	
AXOL® C 62 Pellets MB (Glyceryl Stearate Citrate)	1.50%
TEGO® Alkanol 1618 (Cetearyl Alcohol)	1.00%
TEGOSOFT® CT (Caprylic/Capric Triglyceride)	9.50%
TEGOSOFT® MM MB (Myristyl Myristate)	4.00%
TEGO® Feel C 10 (Cellulose)	1.00%
Tocopheryl Acetate	1.00%
Xanthan Gum (Keltrol CG-SFT, CPKelco)*	0.50%
Phase B	
Water	77.50%
Glycerin	3.00%
Phase C	
Sodium Hydroxide (10% in water)*	0.20%
Phase D	
Benzyl Alcohol; Glycerin; Benzoic Acid; Sorbic Acid (Rokonsal BSB-N, Asland)*	0.80%

Preparation

1. Heat phase A and phase B separately to approx. 70 – 75 °C.
2. Add phase A to phase B with stirring.[1)]
3. Homogenize.
4. Cool with gentle stirring to approx. 40 °C.
5. Add phase C and phase D and stir well.
6. Adjust the pH to 5.0 – 5.5.

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

Remarks

Viscosity (Brookfield DV-I prime, sp. 4/5 rpm): 16 Pas
Microbiological safety: challenge test not performed
Natural content c_n (incl. water, ISO 16128): 80.7%
Natural origin content c_{no} (incl. water, ISO 16128): 100.0%
*Not considered for calculation of c_n and c_{no}
Stability between -5 °C and 45 °C

Basic Face Care Cream (D026-51.18A-0319)	
Phase A	
Water	70.15%
Glycerin	5.00%
dermofeel® PA-3 (Sodium Phytate; Aqua; Alcohol)	0.10%
Verstatil® SL (Aqua; Sodium Levulinate; Potassium Sorbate)	1.50%
Phase B	
Xanthan Gum (Keltrol CG-RD, CP Kelco)*	0.30%
Phase C	
dermofeel® GSC SG (Glyceryl Stearate Citrate)	3.50%
TEGO® Alkanol 1618 (Cetearyl Alcohol)	2.00%
TEGOSOFT® CT (Caprylic/Capric Triglyceride)	6.00%
Squalane*	6.00%
Helianthus Annuus (Sunflower) Seed Oil	5.00%
dermosoft® GMCY MB (Glyceryl Caprylate)	0.30%
dermofeel® Toco 70 non GMO (Tocopherol; Helianthus Annuus (Sunflower) Seed Oil)	0.15%

Preparation

1. Prepare phase A and C separately and heat up to 78°C.
2. Add phase B to phase A under stirring and wait until everything is dissolved.
3. Add phase B to A while stirring.
4. Homogenize.
5. Cool down under medium stirring.
6. Adjust pH to 5.2 – 5.4.

Remarks

Viscosity (Brookfield (21°C): TF; Speed 10 rpm): ~15 Pas
Stability between 4°C and 40°C
Natural content c_n (incl. water, ISO 16128): 81.4%
Natural origin content c_{no} (incl. water, ISO 16128): 99.8%
*Not considered for calculation of c_n and c_{no}
Microbiological safety: challenge test passed

Anti-aging Lotion for Mature Skin (JS 8/16-8)	
Phase A	
AXOL® C 62 Pellets MB (Glyceryl Stearate Citrate)	1.50%
TEGOSOFT® DEC (Diethylhexyl Carbonate)	6.00%
TEGOSOFT® OP (Ethylhexyl Palmitate)	5.00%
TEGOSOFT® P (Isopropyl Palmitate)	2.50%
Phase B	
Water	74.80%
SKINMIMICS® (Ceteareth-25; Glycerin, Cetyl Alcohol; Behenic Acid; Cholesterol; Ceramide EOP; Ceramide EOS, Ceramide NP, Ceraamide NS; Ceramide AP; Caprooyl Phytospingosine; Caprooyl Sphingosine)	5.00%
Glycerin	3.00%
Phanthenol	0.50%
Phase C	
TEGO® Carbomer 141 (Carbomer)	0.20%
TEGOSOFT® OP (Ethylhexyl Palmitate)	0.80%
Phase D	
Sodium Hydroxide (10% sol. In water) (Sodium Hydroxide)	q.s.
Phase E	
Phenoxyethanol; Ethylhexylglycerin (Euxyl PE 9010, Schülke&Mayr GmbH)	0.70%
Phase Z	
Perfume	q.s.

Preparation

1. Heat phase A and phase 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 and phase E below 40 °C.

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

Remarks

Viscosity (Brookfield RV DV-I, sp. 4, 5 rpm): 8 Pas
pH value: 5.5 – 6.0

A 04/19

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 be used.

Evonik Nutrition & Care GmbH
Goldschmidtstraße 100
45127 Essen, Germany
Phone +49 201 173 2546
Fax +49 201 173 712546
personal-care@evonik.com
www.evonik.com/personal-care

EVONIK
POWER TO CREATE

Product specification

Material **DERMOFEEL GSC SG**
Spec.Code **K00 STANDARD**

Inspection Characteristics	Method	Limits	Units	Z
Appearance		OK		C
Acid Value		0.0-20.0	mg KOH/g	X
Saponification Value		215.0-265.0	mg KOH/g	X

Appearance	white to light yellow powder

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

This product is certified according
to the rules set out by RSPO Supply
Chain Segregated (SG).
RSPO Certification Number: RSPO-V-14-13553.

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.

Edition 1
10 December 2018
Mat. Number 61716

dermofeel® GSC SG

Product data record (PDR)

1. General information

1.1 Supplier

Evonik Nutrition & Care GmbH
Personal Care Business Line
Goldschmidtstrasse 100
D-45127 Essen / Germany
Phone: +49 (201) 173-2524
Fax: +49 (201) 173-1828
personal-care@evonik.com
http://www.evonik.com/personal-care

1.2 Product Description

1.2.1 Raw material category/function Emulsifier

1.2.2 Ingredients according to INCI

Glyceryl Stearate Citrate

1.2.3 Composition (INCI)

Components	Source	Percentage
Glyceryl Stearate Citrate	vegetable	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. / REACH Reg. 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 of glyceryl stearate with citric acid

The product is not irradiated.

dermofeel® GSC SG is produced in the absence of any animal derived material of any type.

Residual plant based source (dominant origin of main constituents): rapeseed oil, palm oil, sugar cane, sugar beet and/or corn

CITES:
dermofeel® GSC SG is not based on raw materials from species listed in CITES appendices.

GMO-Status:
The item contains moieties from rapeseed oil, palm oil, sugar cane, sugar beet and/or corn (including oils and other refined ingredients). During the production, no GMOs and derivatives from GMOs are used. Citric acid is produced by fermentation using a wildtype microbial strain. All reasonable measures have been taken to avoid cross-contamination with GMOs or derivatives from GMOs.

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

1080 days after production (unopened original packaging)

5. Regulatory Status

5.1 HS-Code 382499
EU-CN-Code 38249993

5.2 Regulatory status (chemical regulations)

Europe

Components	REACH status	CAS No.	EINECS / EC No.
Glyceryl Stearate Citrate	Reg. No. 01-2119971751-32	91744-39-7	294-601-7

Other countries/regions

Country		yes / no	Remark
Australia	AICS:	no	
China	IECSC:	yes	
Canada	DSL: NDSL:	no	but notified by Evonik Canada Inc. for up to 1 ton/year
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, Philippines, USA

5.2.1 Regulatory status (cosmetic regulation)

Country		yes / no	Remark
China	CFDA:	yes	
Japan	JSQI: JCIA:	yes yes	conforms to the specifications of "Glycerol Esters of Fatty Acids" in Japanese Food Additives Codex -> allowed for QD applications; but specifications are not controlled JCIA No. 555994

6. Toxicology and Ecotoxicology

Refer to summary of ecotoxicological and toxicological data

7. Packaging size

20 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.