Technical Information

TEGOSOFT® OER

Enzymatically produced, vegetable-based ester

Intended use

Liquid lipophilic emollient

Benefits at a glance

- Based on 100% vegetable ingredients
- Produced by the unique sustainable EVONIK enzymatic process
- High purity, very low color and consistent product quality
- Imparts a caring and smooth skin feel in cosmetic formulations
- Alternative or supplement to Jojoba Oil
- COSMOS and NATRUE certified

INCI (PCPC Name)

Oleyl Erucate

Chemical and physical properties (not part of specifications)

Form	liquid

Further product information (not part of specifications)

Density (g/cm³)	approx. 0.87
Viscosity at 25 °C according to Höppler (mPas)	approx. 40
Surface tension at 25 °C according to ring method (mN/m)	approx. 32
Spreadability	medium spreading
Polarity	medium polarity
Cloud point (°C)	19
Peroxide number	<=5.0 mVAL O_2/kg

Properties

- TEGOSOFT® OER is an emollient ester of oleyl alcohol and erucic acid of 100% vegetable origins.
- It is produced by the unique Evonik Goldschmidt sustainable enzymatic process, which yields a high-purity product with very low color and consistent quality.
- It is a clear cosmetic ester oil with a structure and properties similar to natural Jojoba Oil.
- It is fully biodegradable
- It imparts a caring, non-oily skin feel in cosmetic formulations like natural Jojoba Oil.
- It is miscible with common cosmetic oils.
- It is easy to formulate in combination with other oils into O/W and W/O systems.
- The color of TEGOSOFT® OER is substantially improved compared to the natural Jojoba oil (Figure1).

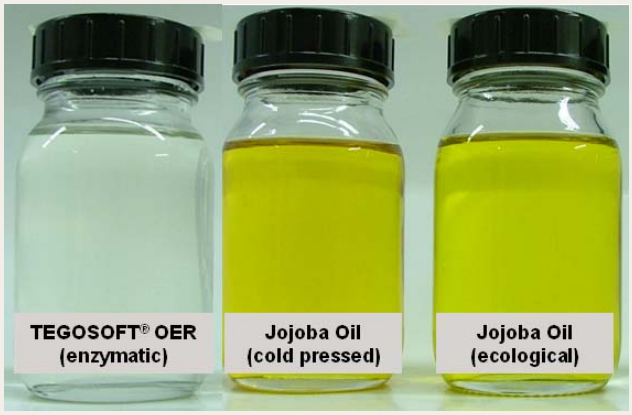

Figure 1. Product color
Left: TEGOSOFT® OER, enzymatically produced
Middle: Jojoba Oil, cold pressed
Right: Jojoba Oil, ecological

TEGOSOFT®OER has no noticeable impact on the appearance of formulations unlike natural Jojoba Oil. Skin care O/W emulsion formulation with 5% TEGOSOFT® OER appears brilliant white as compared to natural Jojoba Oil formulated at an equal level. Therefore TEGOSOFT® OER is suitable for all cosmetic formulations, especially in color sensitive formulations.

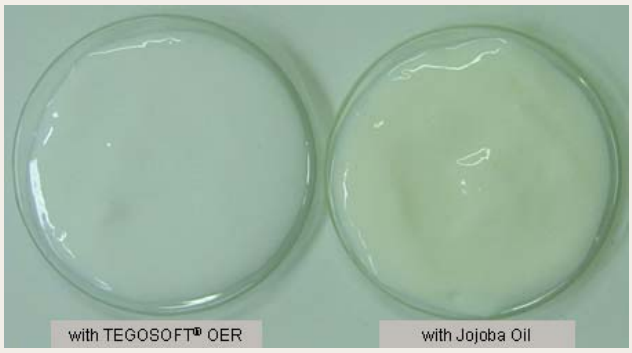

Figure 2. Visual appearance of product
Left: with 5% TEGOSOFT® OER;
Right: with 5% Jojoba Oil.

- The quality and supply of TEGOSOFT® OER are not subject to variations in seasonal conditions.
- The product is stabilized with tocopherol.

Application

- Skin Care products
- Sun Care products
- Color cosmetics and other personal care products

Recommended usage concentration

1 – 10% TEGOSOFT® OER

Packaging

720 kg pallet (4 x 180 kg drum)

Storage

The product could become cloudy when stored at temperatures below its cloud point. But this does not affect the performance of the product. Heating will result in a clear product.

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

Lifting Face Cream MAC 763/2	
Phase A	
TEGO® Care 450 (Polyglyceryl-3 Methylglucose Distearate)	3.00%
TEGIN® M Pellets (Glyceryl Stearate)	2.00%
TEGO® Alkanol 18 (Stearyl Alcohol)	1.00%
TEGOSOFT® OER	4.00%
TEGOSOFT® CT (Caprylic/Capric Triglyceride)	6.00%
TEGOSOFT® M (Isopropyl Myristate)	9.00%
SPHINGOKINE® NP (Caprooyl Phytosphingosine)	0.05%
Phase B	
Glycerin	3.00%
Water	71.95%
Phase Z	
Preservative, perfume	q.s.

Preparation:

1. Heat phase A and B separately to approx. 70 – 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.**

Rejuvenating O/W Cream WR 3/09-9	
Phase A	
AXOL® C 62 Pellets (Glyceryl Stearate Citrate)	2.00%
TEGO® Alkanol 1618 (Cetearyl Alcohol)	6.00%
TEGOSOFT® CT (Caprylic/Capric Triglyceride)	12.50%
TEGOSOFT® DEC (Diethylhexyl Carbonate)	1.00%
TEGOSOFT® OER	3.00%
Xanthan Gum (Keltrol CG-SFT, CP Kelco)	0.50%
Phase B	
Glycerin	3.00%
HyaCare® 50 (Hydrolyzed Hyaluronic Acid)	0.10%
Water	71.90%
Phase C	
Preservative	q. s.

Preparation:

1. Heat phase A and B separately to approx. 70 – 75 °C.
2. Add phase A to phase B with stirring.[1)]
3. Homogenize.
4. Cool with gentle stirring.
5. Add phase C below 40 °C.

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

Natural Wellness Body Lotion F 11/10-16	
Phase A	
TEGO® Care PSC 3 (Polyglyceryl-3 Stearate/Citrate)	3.00%
TEGOSOFT® CT (Caprylic/Capric Triglyceride)	4.00%
TEGOSOFT® OER	3.00%
Almond (Prunus Dulcis) Oil	5.00%
Phase B	
Water	80.50%
Glycerin	3.00%
Phase C	
Xanthan Gum (Keltrol CG-SFT, CP Kelco)	0.50%
Phase D	
Sodium Hydroxide (10% in water)	0.20%
Phase E	
Benzyl Alcohol; Glycerin; Benzoic Acid; Sorbic Acid (Rokonsal BSB-N, ISP)	0.80%
Phase Z	
Perfume	q. s.

Preparation:

1. Heat phase A and B separately to 70 – 75 °C.
2. Add phase A to phase B with stirring.[1)]
3. Homogenize.
4. Cool with gentle stirring.
5. Add phase C at 40 °C.
6. Homogenize for a short time.
7. Add phase D.
8. Add phase E and adjust final pH of emulsion 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**.

Caring O/W Body Lotion WR 3/09-17a	
Phase A	
TEGIN® 4100 Pellets (Glyceryl Stearate)	1.00%
Stearic Acid	1.00%
TEGOSOFT® P (Isopropyl Palmitate)	2.00%
TEGOSOFT® CT (Caprylic/Capric Triglyceride)	8.00%
TEGOSOFT® CR (Cetyl Ricinoleate)	1.00%
TEGOSOFT® OER	2.00%
Phase B	
TEGO® Care CG 90 (Cetearyl Glucoside)	1.50%
Glycerin	3.00%
HyaCare® 50 (Hydrolyzed Hyaluronic Acid)	0.10%
Water	78.80%
Phase C	
TEGO® Carbomer 141 (Carbomer)	0.20%
TEGOSOFT® P (Isopropyl Palmitate)	0.80%
Phase D	
Sodium Hydroxide (10% in water)	0.60%
Phase E	
Preservative	q. s.

Preparation:

1. Heat phase 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/E below 40 °C.

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

Natural W/O Cream **H 19/09-4**	
Phase A	
ISOLAN® PDI (Diisostearoyl Polyglyceryl-3 Dimer Dilinoleate)	3.00%
TEGOSOFT® CT (Caprylic/Capric Triglyceride)	5.00%
TEGOSOFT® TIS (Triisostearin)	4.00%
TEGOSOFT® P (Isopropyl Palmitate)	3.00%
TEGOSOFT® OER	2.00%
Beeswax	0.60%
Hydrogenated Castor Oil	0.40%
Prunus Amygdalus Dulcis Oil	5.00%
Ceramide III (Ceramide NP)	0.10%
Phase B	
Water	70.40%
Glycerin	5.00%
Magnesium Sulfate Heptahydrate	1.00%
Sodium Benzoate, Potassium Sorbate, Aqua (EUXYL K 712, Schuelke & Mayr)	0.50%
Citric Acid (10% in water)	q.s.
Phase Z	
Perfume	q.s.
Preparation: 1. Heat phase A to approx. 80 °C. 2. Adjust the pH value of phase B to approx. 5.0 -5.5. 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 homogenize again.	

Product specification

Material TEGOSOFT OER
Spec.Code K00 STANDARD

Inspection Characteristics	Method	Limits	Units	Z
Refractive index / 20°C	GM_0120_01	1.4650-1.4700		X
Density / 20°C	GM_0110_01	0.863-0.868	g/ml	X
Colour to Hazen	GM_0140_01	<= 150	Haze	X
Hydroxyl value	GM_0020_01	<=10	mg KOH/g	X
Iodine value	GM_0050_01	82-92	g I/100g	X
Acid Value	GM_0010_01	<= 1.0	mg KOH/g	X
Saponification Value	GM_0030_04	90-100	mg KOH/g	X

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

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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.

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TEGOSOFT® OER

Product data record

1.2.0 Product Description

1.2.1 Raw material category liquid lipophilic emollient

1.2.2 Ingredients according to INCI

Oleyl Erucate

1.2.3 Composition

Components	Source	Ratio
Oleyl Erucate	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

	CAS No.	EINECS / EC No.	content	Function
Tocopherol (vegetable based)	59-02-9 16698-35-4 54-28-4 119-13-1 148-03-8 7616-22-0	200-412-2 240-747-1 200-201-5 204-299-0 205-708-5 231-523-4	0.1 %	antioxidant

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.

TEGOSOFT® OER is produced in the strictest absence of any animal derived material of any type.

Origin of vegetable starting material: rapeseed oil, palm oil

GMO-Status:
The item contains ingredients derived from rapeseed (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

		method
Residual solvents	not applicable	
Free amines	not applicable	Chromatography
Nitrosamines	not applicable	
Monochloroacetic acid	not applicable	Chromatography
Dichloroacetic acid	not applicable	Chromatography
1,4-Dioxane	not applicable	
Pesticides	meets the valid regulatory requirements for limits on agricultural pesticides	
Total heavy metals	max. 20 ppm	AAS-ICP
As, Cd, Co, Cr, Hg, Ni, Pb, Sb	Each < 1 ppm	AAS-ICP
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	

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.

Some of the CMR substances mentioned below and listed in Annex VI to Regulation (EC) No 1272/2008 are 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	method
Ethylene Oxide	no		
Propylene Oxide	no		
Octamethylcyclotetrasiloxane (D4)	no		
2-Ethylhexanoic Acid	no		
n-Hexane	no		
Methyl Chloride	no		
Dimethyl Sulphate	no		

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 parfum 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 parfum 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 IIIa of Commission Directive 2007/68/EC.

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.

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

24 months after production (unopened original packaging)

5. Regulatory Status

5.1 Customs tariff number 29161995

5.2 Regulatory status (chemical regulations)

Europe

Components	REACH status	CAS No.	EINECS / EC No.
Oleyl Erucate	Reg. No. 01-2119970541-38	17673-56-2	241-654-9

Other countries

Country		yes / no	Remark
Australia	AICS:	yes	
China	IECSC:	yes	
Canada	DSL: NDSL:	yes	
Taiwan	TCSI:	yes	

In the following countries the relevant authorities currently do not require 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:	yes	JSQI No. 532030, but specifications not controlled

6. Toxicology and Ecotoxicology

Refer to summary of ecotoxicological and toxicological data