

TEGOSOFT® DEC

Emollient for formulations with a light skin feel

- Low viscosity with a high spreadability
- Easy to emulsify both in O/W and W/O emulsions
- Emollient for sprays, foams, creams, and lotions
- Emollient for skin care and sun care products

Personal Care

INCI Name (PCPC Name)

Diethylhexyl Carbonate

**Chemical and physical properties
(not part of specifications)**

Form	liquid
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**Further product information
(not part of specifications)**

Density (g/cm ³)	approx. 0.90
Viscosity at 25 °C according to Höppler (mPas)	approx. 6
Surface tension at 25 °C according to ring method (mN/m)	approx. 27
Spreadability	high
Polarity	low
Pour point following DIN ISO 3016 (°C)	<-30

Properties

- TEGOSOFT® DEC is a unique light emollient.
- TEGOSOFT® DEC imparts a light skin feel into cosmetic care products.
- Easy to emulsify in O/W and W/O emulsions
- Low viscosity and high spreadability
- Low polar oil with a good solvency for crystalline actives
- Very low pour point

**Maximum solubility of UV filters
in TEGOSOFT® DEC [%]**

Benzophenone-3	12
Ethylhexyl Triazone	7
Butyl Methoxydibenzoylmethane	12
Bis-Ethylhexyloxyphenol Methoxyphenyl Triazine	4

Application

TEGOSOFT® DEC is especially suitable for

- Sprays, foams, creams, and lotions
- Skin care products
- Sun care products

Recommended usage concentration

max. 15% TEGOSOFT® DEC

Packaging

720 kg pallet (4 x 180 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 accidents and fires
- toxicity and ecological effects

is given in our material safety data sheets.

Guideline formulations

Light W/O Lotion F 56/04-6	
Phase A	
ISOLAN® GPS (Polyglyceryl-4 Diisostearate/ Polyhydroxystearate/Sebacate)	3.0%
Hydrogenated Castor Oil	0.1%
Microcrystalline Wax (Paracera M, Paramelt B.V.)	0.1%
TEGOSOFT® DEC	7.0%
Cyclopentasiloxane	10.8%
Phase B	
Glycerin	2.0%
Magnesium Sulfate Heptahydrate	1.5%
Water	75.5%
Preservative, perfume	q.s.
Preparation:	
<ol style="list-style-type: none"> Heat phase A to approx. 80 °C. Add phase B (80 °C or room temperature) slowly while stirring. Homogenize for a short time. Cool with gentle stirring below 30 °C and homogenize again. 	

Daily Face Care Cream SPF 10 H 7/11-4	
Phase A	
AXOL® C 62 Pellets (Glyceryl Stearate Citrate)	2.50%
TEGIN® M Pellets (Glyceryl Stearate)	0.50%
TEGO® Alkanol 1618 (Cetearyl Alcohol)	0.50%
TEGOSOFT® XC (Phenoxyethyl Caprylate)	6.00%
TEGOSOFT® CT (Caprylic/Capric Triglyceride)	5.50%
TEGO® Sun T 805 (Titanium Dioxide, Trimethoxycaprylsilane)	1.00%
TEGOSOFT® DEC	3.40%
Octocrylene	4.00%
Ethylhexyl Salicylate	2.00%
Diethylamino Hydroxybenzoyl Hexyl Benzoate (Uvinul A Plus, BASF SE)	1.50%
TEGO® Carbomer 140 G (Carbomer)	0.20%
Xanthan Gum	0.30%
Phase B	
Water	68.30%
Glycerin	3.00%
TEGO® Cosmo C 100 (Creatine)	0.50%
Phase C	
Sodium Hydroxide (10% in water)	q.s.
Phase D	
Dipropylene Glycol; Methylparaben; Ethylparaben; Aqua; Methylisothiazolinone (Microcare MEM; Thor GmbH)	0.80%
Preparation:	
<ol style="list-style-type: none"> Heat phase A to approx. 70 °C and disperse the titanium dioxide properly. Heat phase B to approx. 70 °C separately. Add phase A to phase B with stirring. ¹⁾ Homogenize. Cool gentle with stirring and add phase C and D below 40 °C. Stir well. 	
¹⁾ Important: If phase A has to be charged into the vessel first, phase B must be added without stirring .	

Cationic Sun Care Cream SPF 14 Water Resistant CL 03/06-2	
Phase A	
VARISOFT® PATC (Palmitamidopropyltrimonium Chloride)	1.2%
TEGOSOFT® TN (C12-15 Alkyl Benzoate)	2.6%
TEGOSOFT® DEC	3.0%
TEGIN® M Pellets (Glyceryl Stearate)	1.0%
TEGO® Alkanol 1618 (Cetearyl Alcohol)	2.8%
TEGO® Sun TDEC 45 (Titanium Dioxide; Diethylhexyl Carbonate; Polyglyceryl-6 Polyhydroxystearate)	4.4%
Octocrylene	5.0%
Ethylhexyl Methoxycinnamate	5.0%
Ethylhexyl Salicylate	3.0%
Butyl Methoxydibenzoylmethane	2.0%
Phase B	
Water	67.0%
Glycerin	3.0%
Phase Z	
Preservative, perfume	q.s.
Preparation:	
<ol style="list-style-type: none"> Heat phase A and B separately to approx. 70-75 °C. Add phase A to phase B with stirring. ¹⁾ Homogenize. Cool with gentle stirring. 	
¹⁾ Important: If phase A has to be charged into the vessel first, phase B must be added without stirring .	
SPF (<i>in vivo</i>): 14 (Colipa International Test Method) Water resistance: 67% (Spa Pool Method Colipa Europe)	

DHA Gel with quick break action DCA-5787-38	
Phase A	
ABIL® EM 180 (Cetyl PEG/PPG-10/1 Dimethicone)	0.8%
TEGOSOFT® DEC	1.0 %
TEGOSOFT® TN (C12-15 Alkyl Benzoate)	1.0%
TEGOSOFT® SH (Stearyl Heptanoate)	1.0%
ABIL® Wax 9801 (Cetyl Dimethicone)	0.5%
Cyclopentasiloxane	5.0%
Aerosil R 812 S (Silica Silylate)	0.8%
Phase B	
Water	32.7%
Dihydroxyacetone	4.5%
Sodium Chloride	0.9%
Glycerin	29.0%
Butylene Glycol	18.0%
Ethanol	4.5%
Citric Acid (10% in water)	q.s.
Phase C	
Propylene Glycol; Diazolidinyl Urea; Methylparaben, Propylparaben (Germaben II; ISP)	0.3%
Phase Z	
Perfume	q.s.
Preparation:	
<ol style="list-style-type: none"> Mix phase A and B separately. Adjust the pH of phase B to 3.5 - 4.0. Add phase B to phase A slowly while stirring. Add phase C. Homogenize. 	

O/W Body Spray	
Ma 101/01-2 (Cold processing)	
Phase A	
ABIL® Care 85 (Bis-PEG/PPG-16/16 PEG/PPG-16/16 Dimethicone; Caprylic/Capric Triglyceride)	1.50%
TEGO® SML 20 (Polysorbate 20)	1.00%
TEGOSOFT® DEC	6.00%
TEGOSOFT® TN (C12-15 Alkyl Benzoate)	3.00%
Mineral Oil (30 mPas)	3.00%
Phenonip	0.70%
Phase B	
Glycerin	2.00%
TEGO® Cosmo C 100 (Creatine)	0.50%
Water	80.90%
Phase C	
TEGO® Carbomer 341 ER (Acrylates/C10-30 Alkyl Acrylate Crosspolymer)	0.10%
TEGO® Carbomer 141 (Carbomer)	0.10%
Mineral Oil (30 mPas)	0.80%
Phase D	
Sodium Hydroxide (10% in water)	0.40%
Phase Z	
Perfume	q.s.
Preparation:	
<ol style="list-style-type: none"> 1. Add phase A to phase B with stirring.¹⁾ 2. Homogenize. 3. Add phase C and homogenize for a short time. 4. Add phase D and stir well. 	
¹⁾ Important: If phase A has to be charged into the vessel first, phase B must be added without stirring .	

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