

TEGO® Carbomer 341 ER

Emulsion stabilizer, viscosity enhancer for aqueous solutions with high electrolyte tolerance

Intended use

Rheological additive

Stabilizer

Benefits at a glance

- Thickener for mild (low active) personal cleansing formulations
- Stabilizer for cosmetic emulsions and gels
- Benzene-free acrylic acid polymer

INCI (PCPC name)

Acrylates / C10–30 Alkyl Acrylate Crosspolymer

Chemical and physical properties

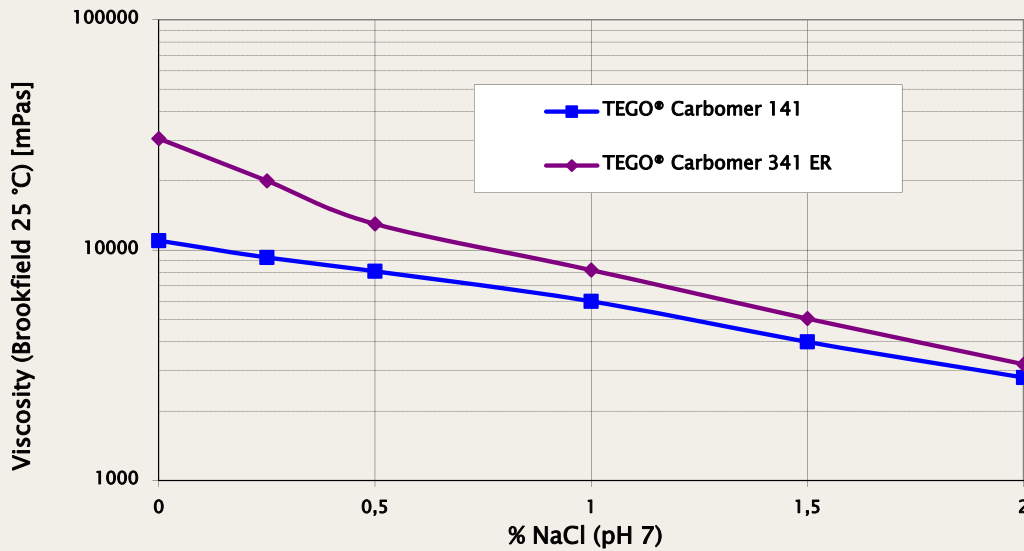
Appearance	white powder
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Application

- TEGO® Carbomer 341 ER is an acrylic acid polymer. N-Hexane is used as solvent in the polymerisation step.
- The electrolyte compatibility of TEGO® Carbomer 341 ER is high. A comparison with TEGO® Carbomer 141 (INCI: Carbomer) is given in Fig. 1. The graph shows the viscosity of aqueous solutions of 1% carbomer at pH 7 with variation of NaCl level.
- TEGO® Carbomer 341 ER is suitable for thickening of personal cleansing formulations with low level of surfactants (face lotions, skin tonics).

- TEGO® Carbomer 341 ER provides a yield value in personal cleansing products. This effect stabilises dispersed particles, like abrasives or mica.
- TEGO® Carbomer 341 ER is suitable for the preparation and stabilization of creams, lotions and suspensions.
- TEGO® Carbomer 341 ER is suitable for the preparation of low viscosity formulations, especially for O/W lotions.
- TEGO® Carbomer 341 ER can be used over a wide pH range. See Fig. 2 for pH response of various TEGO® Carbomer types.

Fig.1: Viscosity of 1% Carbomer solution.



Preparation

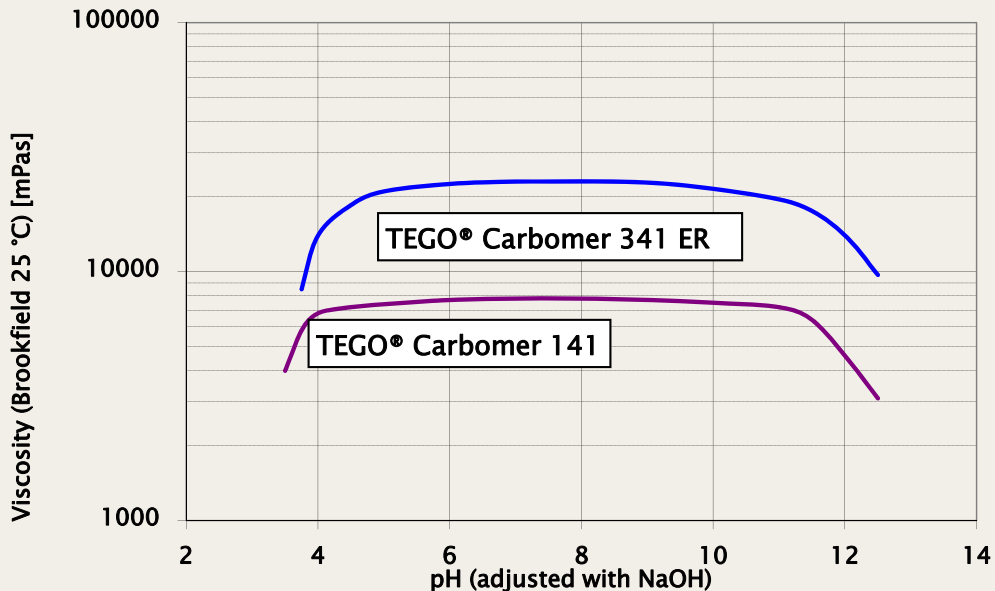
Add TEGO® Carbomer 341 ER early in the formulation to allow it to thoroughly wet out and disperse. Use propeller stirrer.

Dissolver or rotor-stator-homogeniser may be used as well. Intensive shear may lead to a viscosity reduction of the final product and should be avoided.

Neutralise near the end of the process so that all of the ingredients can mix well before the viscosity is increased. For neutralisation use triethanolamine, tetrahydroxypropyl ethylenediamine, sodium hydroxide or other inorganic bases.

TEGO® Carbomer products can also be dispersed directly into mineral oil or ester oils just before manufacturing.

Fig. 2 Viscosity of 0.5% carbomer solution



Recommended usage concentration

0.05 – 1.0% TEGO® Carbomer 341 ER

Packaging

270 kg pallet (18 x 15 kg box)

Storage

TEGO® Carbomer products are hygroscopic. The material should be stored dry and in the dark. Open boxes should be used immediately.

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

Moisturizing Body Wash VK 16/1	
Phase A	
Water	18.5%
TEGO® Carbomer 341 ER	0.3%
Sodium Hydroxide (10% in water)	0.3%
Phase B	
Sodium Laureth Sulfate (28%)	38.0%
TEGOSOFT® PC 31 (Polyglyceryl-3 Caprate)	0.3%
REWOTERIC® AM C (Sodium Cocoamphoacetate)	25.0%
REWOPOL® SB CS 50 B (Disodium PEG-5 Laurylcitrate Sulfosuccinate; Sodium Laureth Sulfate)	4.0%
ANTIL® HS 60 (Cocamidopropyl Betaine; Glyceryl Laurate)	2.0%
Glycerin	3.0%
Phase C	
Myristic Acid	5.3%
TEGOSOFT® TN (C12-15 Alkyl Benzoate)	1.8%
Sunflower Oil (Helianthus Annuus)	1.8%
Perfume, Preservative	q.s.
Citric or Lactic acid	ad pH 6
Preparation: Disperse TEGO® Carbomer 341 ER in warm water (30 °C). Mix for 30 min. Neutralize with Sodium Hydroxide. Prepare phases B and C separately. Add phase A to B while stirring. Heat phases A/B and C to 65 °C separately and mix C into A/B. Cool down with gentle stirring. Adjust pH to about 6.	

Cleansing Gel with Abrasive SG 883/3-1	
Ingredients:	
Water	65.25%
TEGO® Carbomer 341 ER	1.6%
Sodium Laureth Sulfate (28%)	21.4%
TEGO® Betain F 50 (Cocamidopropyl Betaine)	5.3%
Polyethylene*	5.0%
Sodium Hydroxide (25% in water)	0.7%
Perfume, Preservative	q.s.
* Lupolen 1800 SP 15 (BASF)	
Preparation:	
Dissolve TEGO® Carbomer 341 ER in water. Add further ingredients in the given order.	

W₁/O/W₂ Multiple Emulsion Ma 100/01-2	
Phase O	
ABIL® EM 90 (Cetyl PEG/PPG-10/1 Dimethicone)	1.5%
Mineral Oil (30 mPas)	11.0%
Phase W₁	
Water	32.25%
Glycerin	2.0%
Sodium Chloride	0.25%
Panthenol	3.0%
Preservative	q.s.
Phase W₂	
TEGO® Betain F (Cocamidopropyl Betaine)	0.6%
Water	48.9%
TEGO® Carbomer 341 ER	0.1%
Sodium Hydroxide (10%)	0.4%
Perfume, Preservative	q.s.
Preparation:	
1. W ₁ O Emulsion: Stir W ₁ into O, homogenise.	
2. W ₂ -solution: Dilute TEGO® Betain F in water, disperse TEGO® Carbomer 341 ER and neutralise with Sodium Hydroxide to about pH 6.5.	
3. Mix W ₁ /O with W ₂ , stir 2 to 5 minutes.	

Mild Facial Cleansing Gel	
SG883/1-1	
Phase A	
Sodium Laureth Sulfate (28%)	4.3%
Perfume	0.2%
TEGOSOFT® GC (PEG-7 Glyceryl Cocoate)	0.5%
TEGO® Betain 810 (Capryl/Capramidopropyl Betaine)	3.2%
Lactil (Sodium Lactate; Sodium PCA; Glycine; Fructose; Urea; Niacinamide; Inositol; Sodium Benzoate; Lactic Acid)	1.0%
Glycerin	30.0%
Phase B	
TEGO® Carbomer 341 ER	1.08%
Water	59.22%
Phase C	
Sodium Hydroxide (25% in water)	0.7%
Preservative	q.s.
Preparation: Mix the ingredients of phase A in the given order. Dissolve TEGO® Carbomer 341 ER in water. Stir phase B into phase A homogeneously and then adjust the pH value with Sodium Hydroxide to approximately 6. Add further ingredients.	

E 05/08

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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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Product specification

Material TEGO CARBOMER 341 ER
Spec.Code K00 STANDARD

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Inspection Characteristics	Method	Limits	Units	Z
Volatile Matter	GM_0091_07	<=2.0	%	X
Viscosity / 25°C	GM_0104_16	#1: 25000-45000	mPa·s	X
Viscosity 25°C	GM_0104_17	#2: 7000-14000	mPa·s	X

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

#1 - Viscosity 1%

#2 - Viscosity 1% + 1%NaCl

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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.

Material: TEGO CARBOMER 341 ER		Spec-Code: K00 STANDARD	Page 1 from 1
Print date: 06.07.2015	Valid from:	Version: 1	

TEGO® Carbomer 341 ER

Product data record

1. General information

1.1 Manufacturer/Supplier

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1.2 Product Description

1.2.1 Raw material category Stabilizer

1.2.2 Ingredients according to INCI

Acrylates/C10-30 Alkyl Acrylate Crosspolymer

1.2.3 Composition

Components	Source	Ratio
Acrylates/C10-30 Alkyl Acrylate Crosspolymer	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

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

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

2.1 By products

		method
Residual solvents	n-Hexane max. 1500 ppm	
Residual monomers	max. 2000 ppm	
Free amines	not applicable	
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.

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 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	yes	1500 ppm	
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 39069090

5.2 Regulatory status (chemical regulations)

Europe

Components	REACH status	CAS No.	EINECS / EC No.
Acrylates/C10-30 Alkyl Acrylate Crosspolymer	Polymer	96827-24-6	Polymer

Other countries

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

6. Toxicology and Ecotoxicology

Refer to summary of ecotoxicological and toxicological data