Technical Information

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MEMC 050304e-03/Page 1 of 16

Cremophor® Grades

Nonionic solubilizers and emulsifiers for the manufacture of cosmetic products.

Cosmetic Solutions

- Hair Care
- Skin Care
- Oral Care

BASF
The Chemical Company

Chemical nature

The Cremophor® grades are nonionic solubilizers and emulsifying agents obtained by reacting hydrogenated castor oil with ethylene oxide.

Grades

The Cremophor® CO grades are the cosmetic grades. Cremophor® RH comply according to the EP/USP.

Registration data

Product	INCI name	CAS number	Product number
Cremophor® CO 40	PEG-40 Hydrogenated Castor Oil	61788-85-0	10205778
Cremophor® CO 410	PEG-40 Hydrogenated Castor Oil	61788-85-0	10211859
Cremophor® CO 455	PEG-40 Hydrogenated Castor Oil (and) Propylene Glycol	61788-85-0, 57-55-6	10211860
Cremophor® CO 60	PEG-60-Hydrogenated Castor Oil	61788-85-0	10211858
Cremophor® RH 410	PEG-40 Hydrogenated Castor Oil	61788-85-0	10085539
Cremophor® RH 40	PEG-40 Hydrogenated Castor Oil	61788-85-0	10067363
Cremophor® RH 60	PEG-60 Hydrogenated Castor Oil	61788-85-0	10064839

Composition

The main constituents of both Cremophor® grades are glyceryl polyethylene glycol oxystearate, which, together with fatty acid glyceryl polyglyceryl esters, forms the hydrophobic part of the product.The hydrophilic part consists of polyethylene glycols and glyceryl ethoxylate.

Range

Cremophor® grade	Description	Composition	HLB value
CO 40	White to yellowish soft or flowing paste	100% CO 40	14-16
CO 410	Viscous, slightly cloudy liquid	90% CO 40 10% water	14-16
CO 455	Viscous, slightly cloudy liquid	90% CO 40 5% water 5% propylene glycol	14-16
CO 60	White to yellowish soft or flowing paste	100% CO 60	15-17
RH 410	Viscous, slightly cloudy liquid	90% RH 40 10% water	14-16
RH 40	Viscous liquid or soft paste	100% RH 40	14-16
RH 60	White to yellowish soft or flowing paste	100% RH 60	15-17

An outstanding feature of all Cremophor® grades is that their aqueous solutions have a very faint odour or taste.

Specification

Cremophor® CO 40

Parameter	Specification Limits
1.4 Dioxane	≤10 mg/kg
Ethylene oxide	1 mg/kg
Iodine value	≤ 1.0/100 g
Saponification Value	50-60 mg KOH/g
Hydroxyl value	60-75 mg KOH/g
Peroxide value	≤ 2 meq/kg
Acid value	≤ 1.0 mg KOH/g
pH value	6-8
Water content, K. Fischer	≤ 2.0 g/100 g
Colour (Gardner)	≤ 2
Heavy Metals	≤ 10 ppm

Cremophor® CO 60

Parameter	Specification Limits
1.4 Dioxane	≤ 10 mg/kg
Ethylene oxide	1 mg/kg
Iodine value	≤ 1.0/100 g
Saponification Value	40-50 mg KOH/g
Hydroxyl value	50-70 mg KOH/g
Peroxide value	≤ 2 meq/kg
Acid value	≤ 1.0 mg KOH/g
pH value	6-8
Water content, K. Fischer	≤ 2.0 g/100 g
Colour (Gardner)	2
Heavy Metals	≤ 10 ppm

Cremophor® CO 410

Parameter	Specification Limits
1.4 Dioxane	≤ 10 mg/kg
Ethylene oxide	≤ 1 mg/kg
Iodine value	≤ 1.0/100 g
Saponification Value	45-55 mg KOH/g
Hydroxyl value	54-68 mg KOH/g
Peroxide value	≤ 2 meq/kg
Acid value	≤ 1.0 mg KOH/g
pH value	6-8
Water content, K. Fischer	9-11 g/100 g
Colour (Gardner)	≤ 2
Viscosity (Hoeppler)	≤ 1 900 mPas
Heavy Metals	≤ 10 ppm

Cremophor® CO 455

Parameter	Specification Limits
1.4 Dioxane	≤ 10 mg/kg
Ethylene oxide	≤ 1 mg/kg
Iodine value	≤ 1.0/100 g
Saponification Value	45-55 mg KOH/g
Peroxide value	≤ 2 meq/kg
Acid value	≤ 1.0 mg KOH/g
pH value	6-8
Water content, K. Fischer	4-6 g/100 g
Colour (Gardner)	2
Viscosity (Hoeppler)	≤ 1 500 mPas
Heavy Metals	≤ 10 ppm

Cremophor® RH 40

Parameter	Specification Limits
Sulphated ash	≤ 0.25 g/100 g
Iodine value	≤ 1.0/100 g
Saponification value	50-60 mg KOH/g
Hydroxyl value	60-75 mg KOH/g
1,4-Dioxane	≤ 10 mg/kg
Acid value	≤ 1.0 mg KOH/g
pH value	6-7
Water content, K. Fischer	≤ 2.0 g/100 g
Heavy Metals	≤ 10.0 ppm

Cremophor® RH 60

Parameter	Specification Limits
Sulphated ash	≤ 0.25 g/100 g
Iodine value	≤ 1.0/100 g
Saponification Value	40-50 mg KOH/g
Hydroxyl value	45-67 mg KOH/g
1,4-Dioxane	≤ 10 mg/kg
Acid value	≤ 1.0 mg KOH/g
pH value	6-7
Water content, K. Fischer	≤ 2.0 g/100 g
Heavy Metals	≤ 10 ppm

Cremophor® RH 410

Parameter	Specification Limits
Sulphated ash	≤ 0.25 g/100 g
Iodine value	≤ 1.0/100 g
Saponification Value	45-55 mg KOH/g
Hydroxyl value	54-68 mg KOH/g
1,4-Dioxane	≤ 10 mg/kg
Acid value	≤ 1.0 mg KOH/g
pH value	6-7
Water content	9-11 g/100 g
Heavy Metals	≤ 10 ppm

Cremophor® WO 7

Parameter	Specification Limits
1.4 Dioxane	≤ 10 mg/kg
Ethylene oxide	≤ 1 mg/kg
Iodine value	≤ 2.0/100 g
Saponification Value	125-150 mg KOH/g
Hydroxyl value	100-130 mg KOH/g
Acid value	≤ 1.0 mg KOH/g
Water content, K. Fischer	≤ 0.3 g/100 g
Heavy Metals	≤ 10 ppm

Solubility

Cremophor® CO grades and Cremophor® RH 40 form nearly clear solution in water, ethanol, isopropanol, with essential oils and fragrance oils and other hydrophobic compounds, e. g. vitamins and alpha-bisabolol.

Miscibility

Cremophor® grades can be mixed with all other Cremophors grades. With gentle heating, they form clear mixtures with fatty acids and fatty alcohols.

Stability

Pure Cremophor® CO 40 and Cremophor® RH 40 are chemically very stable. Prolonged exposure to heat can cause physical separation into a liquid and a solid phase on cooling but the product can be restored to its original form by homogenization.

Aqueous Cremophor® grades solutions can be sterilized by heating to 120°C. Allowance must be made for the fact that this can cause a slight decrease in the pH value. The phases may also separate during sterilization, but this can be remedied by agitating the solution while it is still hot.

The Cremophor® grades are stable in aqueous-alcoholic solutions. They are also largely stable in purely aqueous solutions within a pH range of 4-8, but no strong bases or acids must be added, as these may saponify the ester.

The Cremophor® grades are largely insensitive to water hardness.

The preservatives normally used in the cosmetic-industry may be added to the aqueous solutions. The requisite concentrations should be determined in tests.

Applications

The Cremophor® grades are used to solubilize ethereal oils, perfume compositions, vitamins and hydrophobic active substances in aqueous-alcoholic and purely aqueous solutions. The finished preparations are particularly stable.

To give a general idea of the solubilization properties of Cremophor® CO 40, the following table lists the quantities of emulsifier required to obtain clear solutions with 1 g of the ethereal oils and fragrances listed and 0.2 g of the hydrophobic active substances listed.

The figures in the table are intended as a guide.

	Ethanol : water 20% : 80%	Water 100%
Essential oil,	**Cremophor® CO 40**	**Cremophor® CO 40**
1.0% in each case	**(%)**	**(%)**
Thyme oil	5.0	9.0
Spruce oil	4.0	9.0
Rosemary oil	3.0	7.0
Lavender oil	3.0	7.0
Sandalwood oil	2.0	7.0
Mouthwash aroma	2.0	6.0
Synthetic rose oil	1.0	2.0
Perfume composition, 1% each		
Classical Fougère note	2.0	6.0
Fresh citrus, pine note	2.0	9.0
Hydrophobic active substance, 0.2% each of		
Bisabolol nat.	0.5	1.0
alpha-Tocopherol	2.0	6.0
Vitamin E acetate	3.0	5.0

In order to ensure that clear, aqueous solutions are obtained, the fat-soluble vitamins must first be intimately mixed with the solubilizer. Best results with vitamin A are obtained if it is in the form of vitamin A palmitate 1.7 million I.U./g.

The vitamin is mixed with Cremophor® CO 40 and heated to 60-65°C. The water, also heated to 60-65°C, is added very slowly with thorough stirring into this mixture. As a result of hydration, the solution thickens, with the viscosity attaining a maximum after about half of the water has been added. Further addition of water then decreases the viscosity again. If the first half of the water is added too quickly, the solution can become opalescent. Alternatively, the warm mixture of the vitamin and Cremophor® CO 40 can be slowly stirred into the water, which results in a lower increase in intermediate viscosity.

A survey of the solubilizing capacity of the Cremophor® RH 40 is given in the table below. The figures indicate in grams the amounts of emulsifier necessary to obtain a clear solution of 1 g of the essential oils or perfumery synthetics listed in the table.

These figures can only serve as a rough guide.

Essential oils and perfumery synthetics 1 g	2-Propanol, 30 g Cremophor® RH 40 g	Ethanol, 30 g Cremophor® RH 40 g
Bergamot oil	1.1	2.5
Geranium oil, African	1.4	1.4
Eucalyptus oil 1 a extra rect. 80/85%	0.5	0.6
Lavender oil	1.2	1.5
Patchouli oil, Singapore	1.1	2.5
Peppermint oil, double rect.	1.2	1.1
Vetiver oil, Reunion	1.5	1.6
Isophytol	1.5	2.1
Linalool	1.5	1.5
Linalvi acetate	1.1	2.0
Nerolidol	2.1	2.1
Methyl anthranilate	0.9	2.1

The following three diagrams demonstrate the use of Cremophor® RH 40 for producing clear, highly concentrated, aqueous solutions of vitamin A palmitate and vitamin E acetate.

In order to ensure that clear, aqueous solutions are obtained, the fat-soluble vitamins must first be intimately mixed with the solubilizer. Best results with vitamin A are obtained if it is in the form of vitamin A palmitate 1.7 million I.U./g.

Fig. 1 Solubilization of vitamin A palmitate 1.7 million I.U./g

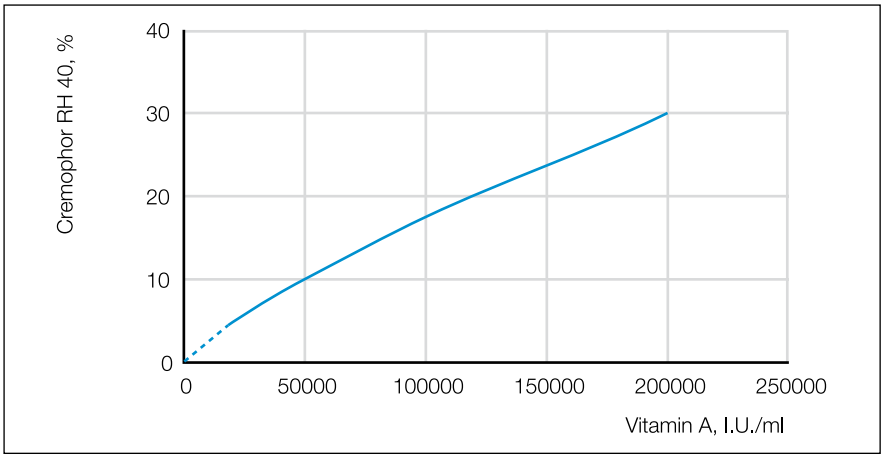
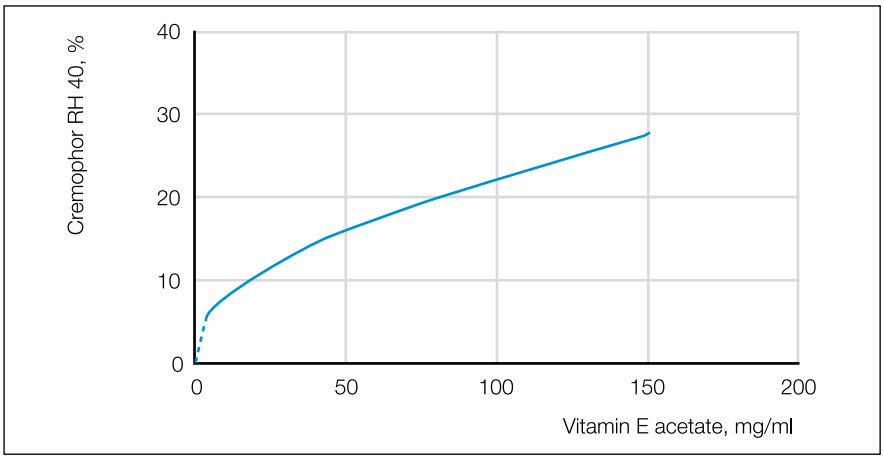


Fig. 2 Solubilization of vitamin E acetate



A small addition of polyethylene glycol (Pluracare® E 400), 1,2-propylene glycol or glycerin allows the preparation temperature and sometimes also the concentration of Cremophor® RH 40 to be reduced. The stability of most solubilized vitamins is affected by light.

The Cremophor® grades show little tendency to foaming, which is particularly important for solutions in aqueous ethanol. Further foam suppression can be obtained by the addition of a small quantity of Polypropylene Glycol 2000.

Processing notes

The solubilizer should be homogenized prior to use. The following procedure is recommended: Mix the fragrance with the solubilizer and dissolve this mixture in the alcohol before adding the specified quantity of water. With very low alcohol concentrations, and particularly with purely aqueous preparations, it is recommended to add the water very slowly with vigorous stirring. The viscosity initially increases, as a result of hydration, reaching a maximum at approx. 40% water. The viscosity then decreases as further water is added.

If water is initially added too quickly, a turbid solution may result.

Toxicity

An investigation of the raw material gave no indication of harmful effects to health if the substance is used for the stated applications and concentrations. Due to the large variety of applications and possible combinations with other products, users are responsible for their own safety assessment of their products.

Storage

The Cremophor® grades are stable for at least 2 years if stored in the original sealed containers in a dry place at room temperature.

The method of production employed for both Cremophor® grades ensures that they are practically sterile. If the containers are repeatedly opened, microorganisms may grow in the product, particularly if the equipment used is not sterile.

Cremophor® RH 410/Cremophor® CO 410: Before use and in case of inhomogenicity the product should be heated with or without stirring to 40-50°C

Safety Data Sheet

The respective safety data sheets are available.

Typical formulations

After shave **No. 07/00005**

	%	Ingredients	Supplier	INCI name
A	60.00	Ethanol abs.		Alcohol
	0.20	Bisabolol nat	(1)	Bisabolol
	3.00	Cremophor® CO 40	(1)	PEG-40 Hydrogenated Castor Oil
	0.10	Menthol	(212)	Menthol
	0.50	Perfume		
	3.00	D-Panthenol 50 P	(1)	Panthenol, Propylene Glycol
	33.20	Water, dem.		Aqua
	q.s.	Sicovit® Chinolin-gelb 70 E 104	(1)	C. I. 47 005, Acid Yellow 3
	q.s.	FD&C Blue No. 1	(1)	C.I. 42 090 Acid Blue 9

Production: Dissolve phase A clearly. The pH value has be adjusted to 5.0 by using citric acid.

Sun protection gel **No. 53/00050**

	%	Ingredient	Supplier	INCI name
A	3.00	Cremophor® CO 40	(1)	PEG-40 Hydrogenated Castor Oil
	5.00	Luvitol® EHO	(1)	Cetearyl Ethylhexanoate
	5.00	Paraffin Oil		Mineral Oil
	2.00	Uvinul® T 150	(1)	Ethylhexyl Triazone
B	3.00	Uvinul® MS 40	(1)	Benzophenone-4
	2.00	D-Panthenol 50 P	(1)	Panthenol, Propylene Glycol
	3.00	1,2 Propylene Glycol Care	(1)	Propylene Glycol
	q.s.	Preservative		
	63.40	Water, dem.		Aqua
C	10.00	Witconol APM	(47)	PPG-3 Myristyl Ether
	0.80	Carbopol 940	(6)	Carbomer
D	2.60	Triethanolamine Care	(1)	Triethanolamine
E	q.s.	Perfume		
	0.20	Bisabolol nat.	(1)	Bisabolol

Production: Heat phases A and B separately to about 80°C.
Stir phase B into phase A whilst homogenizing and continue homongenizing for a while.
Stir in phase C, neutralize with phase D and homogenize again.
Cool to about 40°C, add phase E and homogenize again.

Properties: Viscosity: approx. 6000 mPa·s
pH value: approx. 6.5

Sun screen-lotion with Z-COTE MAX,Typ O/W **No. 53/00381**

	%	Ingredients	Supplier	INCI name
A	7,50	Uvinul® MC 80	(1)	Ethylhexyl Methoxycinnamate
	1,50	Tween 20	(30)	Polysorbate-20
	3,00	Pationic 138 C	(141)	Sodium Lauroyl Lactylate
	1,00	Cremophor® CO 40	(1)	PEG-40 Hydrogenated Castor Oil
	1,00	Cetiol SB 45	(27)	Butyrospermum Parkii (Shea Butter)
	6,50	Finsolv TN	(62)	C12-15 Alkyl Benzoate
B	5,00	Z-COTE® MAX	(1)	Zinc Oxide, Diphenyl Capryl Methicone
C	4,00	Glycerin 87%	(20)	Glycerin
	1,00	D-Panthenol 50 P	(1)	Panthenol, Propylene Glycol
	0,30	Keltrol	(66)	Xanthan Gum
	0,10	Edeta® BD	(1)	Disodium EDTA
	2,00	Urea	(20)	Urea
	2,00	Simulgel NS	(175)	Hydroxyethyl Acrylate/Sodium Acryloyldimethyl Taurate Copolymer, Squalane, Polysorbate 60
	64,10	Water dem.		Aqua dem.
D	0,50	Lactic Acid	(20)	Lactic Acid
	0,50	Euxyl K 300	(42)	Phenoxyethanol, Methylparaben, Butylparaben, Ethylparaben, Propylparaben, Isobutylparaben

Production:

Heat phase A to 80°C, add phase B and homogenize for 3 minutes. Heat phase C to about 80°C and stir it into the combined phases A and B whilst homogenizing. Cool to about 40°C, add phase D and homogenize again.

Properties:

Viscosity: 2300 mPa·s Brookfield RVD VII+
pH value: 7.5

Suncarelotion only mineral O/W with T-Lite SFS SPF 16 **No. 53/00388**

	%	Ingredients	Supplier	INCI name
A	1,00	Abil Care 85	(44)	Bis-PEG/PPG-16/16 PEG/PPG-16/16 Dimethicone, Caprylic/Capric Triglyceride
	3,00	Cremophor® CO 40	(1)	PEG-40 Hydrogenated Castor Oil
	0,30	Cremophor® WO 7	(1)	PEG-7 Hydrogenated Castor Oil
	5,00	Cetiol CC	(27)	Dicaprylyl Carbonate
	10,00	Witconol APM	(47)	PPG-3 Myristyl Ether
	1,00	Dow Corning 345 Fluid	(16)	Cyclopentasiloxane, Cyclohexasiloxane
B	14,00	T-Lite® SF-S	(1)	Titanium Dioxide, Silica, Methicone, Alumina
C	5,00	1,2 Propylene Glycol Care	(1)	Propylene Glycol
	2,00	D-Panthenol 50 P	(1)	Panthenol, Propylene Glycol
	0,20	Keltrol	(66)	Xanthan Gum
	0,10	Edeta® BD	(1)	Disodium EDTA
	2,00	Simulgel NS	(175)	HydroxyethylAcrylate/Sodium Acryloyldimethyl Taurate Copolymer, Squalane, Polysorbate 60
	55,90	Water dem.		Aqua dem.
D	0,50	Euxyl K 300	(42)	Phenoxyethanol, Methylparaben, Butylparaben, Ethylparaben, Propylparaben, Isobutylparaben

Production:

Heat phase A to 80°C, add phase B and homogenize for 3 minutes. Heat phase C to about 80°C and stir it into the combined phases A and B whilst homogenizing. Cool to about 40°C whilst stirring, add phase C and homogenize again. Cool to room temperature whilst stirring.

Properties:

Viscosity: 7720 mPa·s Brookfield RVD VII+
pH value: 7.1
Sun Protection Factor: 16

Face Lotion **No. 52/00015**

	%	Ingredients	Supplier	INCI name
A	3.00	Cremophor® CO 40	(1)	PEG-40 Hydrogenated Castor Oil
	q.s.	Perfume		
	0.10	Bisabolol nat.	(1)	Bisabolol
	78.40	Water, dem.		Aqua
B	3.00	1,2-Propylene Glycol Care	(1)	Propylene Glycol
	2.00	Witch Hazel Distillate		Witch hazel (Hamamelis Virginiana) Distillate
	q.s.	Sicovit® Patent Blue 85 E 131	(1)	C. I. 42 051, Acid Blue 3
	15.00	Ethanol 96%		Alcohol

Production:

Solubilize phase A. Weigh phase B into phase A and dissolve clearly.
Adjust the pH value to about 5-6.

Bath oil **No. 57/00014**

	%	Ingredients	Supplier	INCI name
A	10,00	Luvitol® EHO	(1)	Cetearyl Ethylhexanoate
	30,00	Cremophor® RH 410	(1)	PEG-40 Hydrogenated Castor Oil
	1,00	Pine Oil	(212)	Pine (Pinus Sylvestris) Oil
	2,00	Sweet Almond Oil		Sweet Almond (Prunus Amygdalus Dulcis) Oil
	1,00	Vitamin E Acetate	(1)	Tocopheryl Acetate
	0,20	Bisabolol nat.	(1)	Bisabolol
	0,20	D,L-Alpha-Tocopherol	(1)	Tocopherol
	25,60	Cetiol HE	(27)	PEG-7-Glyceryl-Cocoate
B	30,00	Texapon WW99	(27)	MIPA-Laureth Sulfate, Laureth-3, Cocoamide DEA

Production:

Mix the components of phase A.
Add phase B into phase A.

Relaxing Sportgel with Luvigel® EM **No. 65/00070**

	%	Ingredients	Supplier	INCI name
A	0.30	Menthol	(20)	Menthol
	q.s.	Perfume		
	3.00	Cremophor® CO 40	(1)	PEG-40 Hydrogenated Castor Oil, Water
	2.50	Luvigel® EM	(1)	Caprylic/Capric Triglyceride, Sodium Acrylates Copolymer
B	q.s.	FD&C Blue No. 1	(1)	C.I. 42090, FD&C Blue No. 1
	76.20	Water, dem.		Aqua
C	15.00	Ethanol 96%		Ethanol
	3.00	Glycerin 87%	(20)	Glycerin

Production:

Mix the components of phase A.
Stir phase B into phase A and mix it until it is a homogeneous.
Stir phase C slowly into the mixture of phases A and B.

Properties:

Viscosity: 12000 mPa·s (Brookfield)
pH value: 6.5

Hair tonic **No. 03/00019**

	%	Ingredients	Supplier	INCI name
A	1.50	Cremophor® CO 40	(1)	PEG-40 Hydrogenated Castor Oil
	q.s.	Perfume		
	0.10	Bisabolol rac.	(1)	Bisabolol
	73.90	Water dem.		Aqua
B	2.00	D-Panthenol 50 P	(1)	Panthenol, Propylene Glycol
	2.00	Luviquat® FC 550	(1)	Polyquaternium-16
	0.50	Luviskol® K 30	(1)	PVP
	20.00	Ethanol 96%		Alcohol

Production: Solubilize phase A. Weigh phase B into phase A and dissolve clearly.

Properties: pH value: 7.0

Clear Performance Hair Gel **No. 04/00137**

	%	Ingredients	Supplier	INCI name
A	43.50	Water, dem.		Aqua
	q.s.	Preservative		
B	0.40	Ultrez® 21	(6)	Acrylates/C10-30 Alkyl Acrylate Crosspolymer
C	0.60	Triethanolamine Care	(1)	Triethanolamine
D	15.00	Luviset® Clear	(1)	VP/Methacrylamide/ Vinyl Imidazole Copolymer
	40.10	Water, dem.		Aqua
	q.s.	Perfume		
	0.30	Cremophor® CO 40	(1)	PEG-40 Hydrogenated Castor Oil
	0.10	Uvinul® P25	(1)	PEG-25 PABA

Production: Weigh out phase A, give phase B into phase A and let it soak till it has sank down to the bottom.
Neutralize with phase C.Solubilize phase D. Weigh out the compounds of phase E into phase D and stir till it dissolves. Stir the solution of phase D and E slowly into the mixture of phase A, B and C till homogenous.

Properties:

Viscosity:	24300 mPa·s
pH value:	7.3
Transmission:	97.9% (600nm)

Suppliers

1. **BASF Aktiengesellschaft**,
67056 Ludwigshafen, Germany
Tel.: (06 21) 60-0
Fax: (06 21) 60-4 25 25

6. **Noveon, Inc.**
a wholly owned subsidiary of the Lubrizol Corporation
9911 Brecksville Road
OH 44141-3287 Cleveland; USA
Phone: (216) 447-5000
1-(800) 331-1144
Fax: (216) 447-5250

16. **Dow Corning Corporation**
P.O. Box 17 67, Dept. 2291 Midland. Michigan 48686-0994, USA
Tel.: +1-517-496-6000
Fax: +1-517-496-5324

20. **Merck KGaA**
Frankfurter Straße 250
4119 Darmstadt; Germany
P.O. Box: 64293
Phone: 49 6151 72-7869
Fax: 49 6151 728333
www.merck.com

27. **Cognis Deutschland GmbH - Care Chemicals**
Henkelstraße 67
40191 Düsseldorf-Holthausen; Germany
P.O. Box: 130164; 40551 Düsseldorf-Holthausen
Phone: 0211/7940-2289
Fax: 0211/798-2016
www.cognis.com

30. **ICI Surfactants**
Wilton Centre, Middlesbrough, Cleveland, England
P.O. Box: 90, TS90 8JE Middlesbrough, Cleveland
Phone: 44-1642-454144
Fax: 44-1642-437374
www.ici.com

42. **Schülke & Mayr GmbH**
Robert-Koch-Str. 2, 22851 Norderstedt, Germany
P.O. Box: 22840 Norderstedt
Phone: 040/52100-0
Fax: 040/52100-238
www.schuelke-mayr.com

47. **Witco Corporation**
1 American Way
CT 06831 Greenwich, USA
P.O. Box: 2559, CT 06831-2559 Greenwich
Phone: (203) 552-3373
Fax: (203) 552-2893
www.witco.com

66. **CP Kelco**
8355 Aero Drive
CA 92123 San Diego, USA
Phone: (800) 535-2687
(858) 292-4900
Fax: (858) 292-4901

141. **RITA Corporation**
1725 Kilkenny Court, Woodstock, USA
P.O. Box: 1487, IL 60098 Woodstock
Phone: (815) 337-2500
(800) 221-9727
Fax: (815) 337-2522
www.ritacorp.com

175. **SEPPIC - department Cosmetique-Pharmacie**
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Fax: 16/1 40 62 52 53

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37603 Holzminden, Germany
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Note

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