
Technical Information

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Cremophor® WO 7

® = Registered trademark
of BASF Aktiengesellschaft

Nonionic emulsifiers for the manufacture of cosmetic W/O emulsions.

cosmetic
SOLUTIONS

- Hair Care
- Skin Care
- Oral Care

 **BASF**
The Chemical Company

Chemical nature	Cremophor® WO 7 is a nonionic emulsifier, manufactured by reacting hydrogenated castor oil with 7 moles of ethylene oxide.																				
INCI name	PEG-7 Hydrogenated Castor Oil																				
CAS-No.	61788-85-0																				
Description	Cremophor® WO 7 is a cloudy, slightly yellowish, viscous liquid. It has a very faint characteristic odour.																				
HLB value	5±1																				
Specification	<table><thead><tr><th>Parameter</th><th>Specification Limits</th></tr></thead><tbody><tr><td>Saponification value</td><td>125 - 150 mg/g</td></tr><tr><td>Hydroxyl value</td><td>100 - 130 mg/g</td></tr><tr><td>Iodine value</td><td>≤ 2.0 g/100 g</td></tr><tr><td>Acid value</td><td>≤ 1.0 mg/g</td></tr><tr><td>Water (K. Fischer)</td><td>≤ 0.3 g/100g</td></tr><tr><td>Ethylene oxide, ppm</td><td>≤ 1.0 mg/kg</td></tr><tr><td>1,4-Dioxane, ppm</td><td>≤ 10 mg/kg</td></tr><tr><td>Heavy metal</td><td>≤ 10 ppm</td></tr><tr><td>Peroxid value</td><td>≤ 2 meq/kg</td></tr></tbody></table>	Parameter	Specification Limits	Saponification value	125 - 150 mg/g	Hydroxyl value	100 - 130 mg/g	Iodine value	≤ 2.0 g/100 g	Acid value	≤ 1.0 mg/g	Water (K. Fischer)	≤ 0.3 g/100g	Ethylene oxide, ppm	≤ 1.0 mg/kg	1,4-Dioxane, ppm	≤ 10 mg/kg	Heavy metal	≤ 10 ppm	Peroxid value	≤ 2 meq/kg
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Solubility	Cremophor® WO 7 is insoluble in water but dispersible with liquid paraffin.																				
Applications	Cremophor® WO 7 is used in the manufacture of W/O emulsions and is particularly suitable for liquid and modern, soft preparations that are known as soft creams. In addition, this emulsifier can also be used for preparing low-temperature, e.g. cold/cold, emulsions.																				
Processing notes	<p>The usual methods are employed for making emulsions containing Cremophor® WO 7.</p> <p>The emulsifier is melted at 70-80°C with the oils, fats and oil-soluble additives. The aqueous phase containing all of the water-soluble additives is also heated to 70-80°C, whereupon it is stirred slowly but vigorously into the oil phase. The time and temperature necessary for emulsification and homogenization are dependent on the consistency and the additives. Perfume is added at a temperature of 30-35°C.</p> <p>Attention is drawn to the use of metal soaps for improving stability.</p> <p>Cremophor® WO 7 meets the demands for finely dispersible, flowing emulsions imposed by modern, daily body care. Such emulsions do not leave a noticeable fatty sheen on the skin but produce a visible cosmetic effect.</p>																				
Preservation	Emulsion preparations must be preserved. Preservation must take further additives and production conditions into account.																				
Stability/Storage	Cremophor® WO 7 is stable for at least 2 years if stored in the original sealed containers in a dry place at room temperature.																				
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.																				
Safety data sheet	A Safety Data Sheet is available.																				

Typical formulations

Baby care cream with 10% D-Panthenol USP, W/O

No. 54/00025

	%	Ingredients	Supplier	INCI name
A	6.00	Cremophor® WO 7	(1)	PEG-7 Hydrogenated Castor Oil
	2.00	Elfacos ST 9	(2)	PEG-45/Dodecyl Glycol Copolymer
	10.00	Paraffin Oil		Mineral Oil
	10.00	Luvitol® EHO	(1)	Cetearyl Ethylhexanoate
	3.00	Lunacera M	(52)	Microcrystalline Wax
	3.00	Bees Wax 3044PH	(73)	Bees Wax
	0.50	Aluminium Stearate	(5)	Aluminium Stearate
B	3.00	1,2-Propylene Glycol Care	(1)	Propylene Glycol
	10.00	D-Panthenol USP	(1)	Panthenol
	0.50	Magnesium Sulfate-7-hydrate		Magnesium Sulfate
	q.s.	Preservative		
	50.00	Water dem.		Aqua
C	2.00	Bisabolol nat.	(1)	Bisabolol
	q.s.	Perfume		

Procedure:

Heat phases A and B separately to approx. 80°C. Stir phase B into phase A whilst homogenizing and continue homogenizing for a while. Cool to about 40°C, add phase C and homogenize again.

Properties:

Viscosity: approx. 8000 mPa·s

Lotion with 3% Sodium Ascorbyl Phosphate**No. 51/00053**

	%	Ingredients	Supplier	INCI name
A	6.00	Cremophor® WO 7	(1)	PEG-7 Hydrogenated Castor Oil
	5.00	Isopropyl Myristate	(27)	Isopropyl Myristate
	5.00	Luvitol® EHO	(1)	Cetearyl Ethylhexanoate
	2.00	TeCero Wax 1030 K	(73)	Microcrystalline Wax
	0.50	Bees Wax 3044 PH	(73)	Bees Wax
	0.50	Cetiol SB 45	(27)	Butyrospermum Parkii (Shea Butter)
	2.00	Jojoba Oil		Jojoba (Buxus Chinensis) Oil
	10.00	Paraffin Oil		Mineral Oil
B	5.00	1,2-Propylene Glycol Care	(1)	Propylene Glycol
	q.s.	Preservative		
	51.00	Water dem.		Aqua
C	3.00	Sodium Ascorbyl Phosphate	(1)	Sodium Ascorbyl Phosphate
	10.00	Water dem.		Aqua
D	q.s.	Perfume		

Production:

Heat phases A and B separately to about 85°C. Stir phase B into phase A whilst homogenizing and continue homogenizing for a while. Cool to about 40°C, add phases C and D and homogenize again.

Properties:

Viscosity: 6500 mPa·s Brookfield RVD VII+

Suppliers

1. **BASF Aktiengesellschaft**
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Tel.: (003133 4676444

Akzo Nobel Chemicals GmbH
300 South Riverside Plaza, IL 60606 Chicago, USA
Tel.: (312) 906-7889
3. **Amerchol Corporation**
136 Talmadge Road
NJ 08818 Edison, USA
Tel.: (908) 248-6000
4. **August Schmidt Nachfolger Wachsbleiche**
Speicherstraße 25, 29221 Celle, Deutschland
Tel.: (05141) 6068
5. **Bärlocher GmbH**
Riesstraße 16, 80992 München, Deutschland
Tel.: (089) 14373-0
6. **Chemisches Laboratorium Dr. Kurt Richter GmbH**
Bennigsenstraße 25, 12159 Berlin, Germany
Tel.: 30/852-70-75
Telefax: 30/851-18-22
7. **Dragoco Gerberding & Co. GmbH**
Dragocostraße, 37601 Holzminden, Germany
Tel.: (05531) 970
8. **GFN Herstellung von Naturextrakten GmbH**
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9. **Cognis Deutschland GmbH, Care Chemicals**
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Fax: 49 211 798-4008
10. **Clariant GmbH - Functional Chemicals Division, Personal Care**
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12. **Koken Company Ltd.**
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Telefax: 03/3950-6602

13. **Lipo Chemicals, Inc.**
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14. **Merck KGaA**
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15. **Sachtleben Chemie GmbH, Chemical Performance**
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17. **Degussa Care Specialities**
710 South 6th Street, Hopewell VA 23860, USA
Tel. 1 800 46-1890

German adress:
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18. **Witco Corporation**
One American Lane, CT 06831 Greenwich, USA
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Note

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