

Formulation Example

MDA-S-135-07

Sun Protection Gel

in vivo SPF 39.7 (ISO 24444:2010), UVA

Ingredients	Art. No.	INCI (CTFA)	[%]
A1			
Eusolex® OCR	1.05377 (1)	OCTOCRYLENE	10.00
Eusolex® OS	1.06949 (1)	ETHYLHEXYL SALICYLATE (OCTYL SALICYLATE)	5.00
Eusolex® 9020	1.05844 (1)	BUTYL METHOXYDIBENZOYLMETHANE (AVOBENZONE)	5.00
RonaCare® AP	1.30163 (1)	BIS-ETHYLHEXYL HYDROXYDIMETHOXY BENZYL MALONATE	1.00
Ganex™ V-216	(2)	PVP/HEXADECENE COPOLYMER	1.00
Cetiol® CC	(3)	DICAPRYLYL CARBONATE	6.00
Abil Wax 2434	(4)	STEAROXY DIMETHICONE	1.20
Xiameter® PMX-0345	(5)	CYCLOPENTASILOXANE (CYCLOPENTASILOXANE, CYCLOHEXYSILOXANE), CYCLOHEXASILOXANE	3.00
A2			
Eusolex® T-AVO	1.05335 (1)	TITANIUM DIOXIDE (NANO), SILICA	3.00
B1			
RonaCare® Ectoin	1.30200 (1)	ECTOIN	0.30
RonaCare® Disodium EDTA	1.32221 (1)	DISODIUM EDTA	0.10
Glycerol 85%	1.04091 (1)	GLYCERIN, AQUA (WATER)	3.00
Water, demineralized		AQUA (WATER)	51.50
B2			
Carbopol® Aqua SF-1 OS Polymer	(6)	ACRYLATES COPOLYMER	3.00
B3			
Sodium Hydroxide, 10%	1.05588 (1)	AQUA (WATER), SODIUM HYDROXIDE	0.90
B4			
RonaFlair® LDP White	1.17755 (1)	SODIUM POTASSIUM ALUMINUM SILICATE, CI 77891 (TITANIUM DIOXIDE), SILICA	3.00
C			
Ethanol 96%	1.00971 (1)	ALCOHOL	3.00
D			
Preservatives (q.s.)			0.00

Procedure:

Add phase B2 to phase B1 and neutralize with phase B3 to pH 6.8. Add phase B4 to phase B. Dissolve phase A1 at about 50-60°C. Disperse phase A2 in phase A1 (with a dissolver disc). Add phase A slowly to phase B while stirring. Then add phases C and D. Homogenize. Check pH value (pH 6.5 to 7.0).

Notes:

Appearance: off-white gel

pH (23°C): 6,7

Viscosity: 10 000 mPas (Brookfield RVT, Sp. B, 10 rpm) at 23°C

Stability: 3 months at 40°C, FTC (-5°C to 40°C), 5°C, RT and 1 week 50°C

Suppliers:

Formulation Example

(1) Merck KGaA, Darmstadt, Germany / EMD Performance Materials
(3) BASF AG
(5) Biesterfeld

(2) Ashland
(4) Evonik Nutrition & Care GmbH
(6) Gattefossé (Deutschland) GmbH

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