

Guide Formulation

Personal Care

Moisturising Sun Protection Cream SPF15

Containing: **BC 99/030, Stearyl Dimethicone Wax**
BC 98/073, Phenyltrimethicone Fluid
BC Cyclomethicone 5, Cyclopentasiloxane

This formulation is a smooth sun protection cream developed to give a soft feel to the skin whilst providing essential protection from the sun's rays. BC 99/030 wax melts onto the skin to provide excellent skin feel whilst offering SPF boosting properties to the Parsol UV filters. BC 98/073 reduces the tackiness of the formulation leaving the skin feeling smooth, whilst the BC Cyclomethicone 5 aids in the spreading of actives and gentle evaporation of the formulation leaving no unwanted residue behind.

Phase	Trade Name	INCI	%w/w	Source
1	Purified Water	Aqua	70.15	Various
1	Ultrez 20	Acrylates/C10-30 Alkyl Acrylate Crosspolymer	0.12	Lubrizol
1	Disodium EDTA	Disodium EDTA	0.05	Various
1	Butylene Glycol	1,3-Butylene Glycol	3	Various
2	Arlacel 165	Glyceryl stearate, PEG-100 stearate	2.5	ERCA
2	Cetyl Alcohol	Cetyl Alcohol	2	Various
2	Syncrowax ERLC	C18-36 Acid Glycol Ester	2	Croda
2	Unimer U-151	PVP/Hexadecane Copolymer	0.5	Induchem AG
2	Crodamol AB	C12-15 Alkyl Benzoate	6	Croda
3	Parsol 340	Octocrylene	0.75	DSM
3	Parsol 1789	Butylmethoxydibenzoyl Methane	3	DSM
3	Parsol MCX	Ethylhexyl Methoxycinnamate	2.5	DSM
4	Crodamol IPM	Isopropyl Myristate	4	Croda
4	BC99/030	Stearyl Dimethicone	2	Basildon Chemicals
5	BC98/073	Phenyl Trimethicone	1	Basildon Chemicals
5	BC Cyclomethicone 5	Cyclopentasiloxane	2	Basildon Chemicals
6	NaOH (30% solution)	Sodium Hydroxide	0.03	Various
7	Andrias Perf 266059	Parfum	0.3	Fragrance Oils Int
8	Neolone PE	Methylisothiazolinone, Phenoxyethanol	0.6	Dow Chemical

BASILDON CHEMICALS

Method

- 1) Add Purified Water into the main vessel. With mechanical stirring, add and disperse Disodium EDTA
- 2) Slowly sprinkle Ultrez 20 into the water and leave for 10 minutes until the powder has fully wetted and dropped into the solution
- 3) Apply mechanical stirring and mix for a further 10 minutes to ensure full hydration of the Ultrez 20
- 4) Add and disperse Butylene Glycol with continued stirring
- 5) Heat this phase (1) to 70°C
- 6) In a pre-mix vessel, mix the components of Phase 2 and heat to 70°C and stir until melted and uniform
- 7) In the main oil phase vessel, add and mix the components of Phase 3 stirring. Heat this phase to 70°C with continuous stirring until fully clear and uniform
- 8) Add Phase 2 to Phase 3 with stirring
- 9) Create a hot pre-mix of Phase 4 and once uniform, add this to the main oil phase
- 10) Using a high shear mixer (Silverson type), slowly add the oil phase (Phase 2/3/4) to the aqueous phase (Phase 1) and homogenise
- 11) Pre-mix Phase 5 and slowly add this to the emulsion with continuing homogenisation.
- 12) Add NaOH Solution (Phase 6) and continue to homogenize for 5-10 until bright, white and uniform
- 13) Transfer to a mechanical stirrer and commence cooling. Once below 40°C, add the perfume (7) and preservative (8) and make to weight with purified water. Continue to stir until fully uniform and down to room temperature

Notes

- We recommend adding the silicone phase (5) once the emulsion has formed and immediately prior to cooling. This is to minimise heat exposure. We recommend the emulsion is below 70°C before this addition takes place
- All of the oil phase heating (Phases 2,3,4) should be done at the same time rather than sequentially, again to minimise the heat exposure time
- It is important to pre-mix the UV filters (Parsol grades) into the Alkyl Benzoate to ensure full solvency
- Force cooling with a cold-water jacket can be used to speed up the cooling time. Continued stirring will ensure the emulsion remains uniform and stable

Please note that the above formulation is only intended as a guide. It is not a commercial formulation and has not been tested as such. The formulation should be evaluated and modified for your own requirements before use. Also suggestions of uses should not be taken as inducements to infringe any particular patent.