

Starting point formulation – Sun protection cream – prolonged security

This W/O emulsion is specially formulated to provide reliable sun protection and improved performance. It contains **TIXOGEL-FTN**, which increases stability and consistency of the cream. In addition, **PURABYK-W 5560 BOOST** increases SPF and improves water-resistance.

Formulation

Position	Component	INCI	Supplier	Function	Dosage (%)
A	ISOLAN GPS	Polyglyceryl-4 Diisostearate/Polyhydroxystearate/Sebacate	Evonik	Emulsifier W/O	3.00
	NEOCARE P3R	Polyglyceryl-3 Polyricinoleate, Polyglyceryl-3 Ricinoleate	Gobiotics	Emulsifier W/O	1.50
	KAHLWAX 2811 Rice	Oryza Sativa (Rice) Bran Wax	KAHL	Consistency providing agent	1,50
	Zinc Stearate	Zinc Stearate	Sigma-Aldrich	Stabilizer	1.50
	TIXOGEL-FTN	C12-15 Alkyl Benzoate (and) Stearalkonium Bentonite (and) Propylene Carbonate	BYK	Viscosity enhancer, stabilizer, rheology modifier	5.00
	PARSOL DHHB	Diethylamino Hydroxybenzoyl Hexyl Benzoate	dsm-firmenich	UV-A filter	4.00
	PARSOL EHT	Ethylhexyl Triazone	dsm-firmenich	UV-B filter	1.50
	PARSOL Shield	Bis-Ethylhexyloxyphenol Methoxyphenyl Triazine (BEMT)	dsm-firmenich	Broad-spectrum filter	4.00
	Parsol ZX	Zinc Oxide (and) Triethoxycaprylylsilane	dsm-firmenich	UV-A & B filter	7.00
	PARSOL MCX	Ethylhexyl Methoxycinnamate	dsm-firmenich	UV-B filter	2.00
	TEGOSOFT DEC	Diethylhexyl Carbonate	Evonik	Emollient	4,50
	TEGOSOFT XC	Phenoxyethyl Caprylate	Evonik	Emollient	9.00
B	demineralized Water	Aqua		Carrier	48.98
	Magnesium Sulfate Heptahydrate	Magnesium Sulfate Heptahydrate	Carl Roth	Stabilizer	1.00
	Pentavitin	Saccharide Isomerate	dsm-firmenich	Moisturizing agent	0.25
	Tinosorb M	Methylene Bis-Benzotriazolyl Tetramethylbutylphenol, Aqua, Decyl Glucoside, Propylene Glycol, Xanthan Gum	BASF	Broad spectrum UV-filter	2.00
	Citric Acid 10 %, solution	Citric Acid (and) Water	Speiko	pH adjuster	0.02
C	Vercatech CAPRYFORCE ECO	Propanediol, Caprylyl Glycol, PhenylPropanol	JOVER	Preservative, multifunctional	1.00
	Bourrache ET Poudre de Riz Natflor	Parfum	TechnicoFlor	Fragrance	0.25
	PURABYK-W 5560 BOOST	Hydrogenated Rapeseed Oil	BYK	Water repellent, consistency agent, SPF-Booster	2.00
Total					100.00

Instructions (manufacturing procedure)

- Add the emollients and Parsol MCX into a beaker. Then add Parsol DHHB, EHT and Shield.
- Heat up to 85–90 °C to solve them clearly.
- Add the rest off phase A into this solution and heat up to 80–85 °C again.
- Add the materials of phase B into an other beaker and measure the pH-value.
→ Adjust it to 6.0–7.0 with citric acid.
- Heat up phase B to 70 °C.
- Start ultra turrax (4000 → 8000 rpm) and transfer phase B slowly into phase A within 2 min.
- Homogenize with ultra turrax not more then 15 seconds (7000 rpm).
- Cool down to < 30 °C while stirring (paddle stirrer 500 rpm).
- Add materials of phase C while stirring (paddle stirrer 500 rpm).
- Cool down to RT while stirring (paddle stirrer 650 rpm).

Characteristic data

- Appearance: light yellow viscous emulsion.
- Storage stability: 3 months at 40 °C.

TIXOGEL-FTN is a rheological additive based on natural bentonite. It thickens the oil phase and stabilizes the formulation. Additionally, it provides a very pleasant skin feel.

PURABYK-W 5560 BOOST is based on micronized rapeseed wax and enhances water resistance and SPF.



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