

Starting point formulation – Anti-dandruff serum – rebalanced scalp

The gel structure is based on **GELWHITE-H XR** ensuring a stable, non-dripping texture. This modern leave-on formulation has been specially developed to care for oily, flaky, or irritation-prone scalp. The combination of keratolytic agents, antimicrobials, moisturizers and prebiotic/postbiotic ingredients specifically targets dandruff formation, excess sebum, and microbiome imbalances.

The emulsion is lightweight, absorbs quickly, and leaves the scalp feeling fresh and well cared for.

Formulation

Position	Component	INCI	Supplier	Function	Dosage (%)
A	Demineralized water	Aqua		Carrier	80.94
	GELWHITE-H XR	Bentonite	BYK	Rheology modifier	2.00
	Cosphaderm X 34	Xanthan Gum	Cosphatec	Thickener	0.15
	DL SodiumLactat 60 %	Sodium Lactate, Aqua	Sigma-Aldrich	Humectant (NMF)	2.00
	Ethylene Diamine Tetraacetic Acid > 99 %	Tetrasodium EDTA	Carl Roth	Chelating agent	0.05
	Hydrolyzed Corn (Mais) Protein	Hydrolyzed Corn Protein	Le-Nutra	Active	1.00
B	Akoline LC	Glyceryl Stearate Citrate	AAK	Emulsifier O/W	2.50
	TEGO Care 450 MB	Polyglyceryl-3 Methylglucose Distearate	Evonik	Emulsifier O/W	1.00
	Crambe Oil	Crambe Abyssinica Seed Oil	Henry Lamotte	Emollient	1.00
	Joboba Oil	Simmondsia Chinensis (Jojoba) Seed Oil	Gustav Heess	Emollient	1.00
Premix 1	1,2-Propanediol	Propylene Glycol	Merck KGaA	Moisturizer	1.00
	Octopirox	Piroctone Olamine	Clariant	Active	0.10
Premix 2	1,2-Propanediol	Propylene Glycol	Merck KGaA	Moisturizer	4.00
	Salicylic acid	Salicylic acid	Sigma-Aldrich	Anti-dandruff/keratolytic agent	1.00
C	SEBOCEA	Fucus Spiralis Extract, Tetraselmis Chui Extract, Aqua	Gelyma	Active	1.00
	SYMSAVE 5E	Pentylene Glycol, Hydroxyacetophenone, Ethylhexylglycerin, Aqua	Symrise	Humectant (Preservative ndkp)	1.00
	Fresh Skin (SY627175)	Fragrance	Symrise	Parfum	0.25
	Lactic Acid Solution 80 %	Lactic Acid, Aqua	Sigma-Aldrich	pH adjuster	0.01
Total					100.00

Instructions (manufacturing procedure)

- At the beginning of the production, first prepare the two premixes. For this, add 1,2-propanediol to a beaker, then add either Octopirox or Salicylic Acid. Stir until everything is completely dissolved.
- Add water and Tetrasodium EDTA into an beaker. Then the rheological additiv and the thickener is added and dissolved while stirring (wingstirrer 800 rpm/20 min).
- Add Hydrolized Corn Protein and Sodium Lactate into the water phase.
- Heat up to 72 °C while stirring (wingstirrer 500 rpm).
- Add phase B and stir well (wingstirrer 500 rpm.). Homogenize a short time with IKA Ultra Turrax (6,000 rpm/1 min).
- Cool down to < 40 °C.
- Add premix 1 while stirring (wingstirrer 500 rpm/5 min).
- Add premix 2 while stirring (wingstirrer 500 rpm/5 min).
- Add the materials of phase C in the given order and stir well (wingstirrer 500 rpm/10 min).
- The pH-value should be maintained between 4.0 and 4.5 to ensure optimal efficacy of the selected combination of active ingredients (Salicylic Acid & Piroctone Olamine). If nessessary adjust it with lactic acid solution.

Characteristic data

- Appearance: slightly beige, low-viscosity emulsion.
- Storage stability: 3 months at 40 °C.

GELWHITE-H XR is a highly purified rheology additive based on natural bentonite for use in personal care applications as a thixotropic gelling agent in aqueous systems, offering excellent anti-settling and stabilization properties (NATURE approved).



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