

Starting point formulation – Sensitive toothpaste with NaF – beaming smile

Stabilized with high-purity **LAPONITE-XLG** for optimal distribution of active ingredients. The combination of sodium fluoride and an innovative active agent strengthens tooth enamel, provides reliable cavity protection, and seals sensitive areas. Natural oils and sugar alcohols ensure a pleasant taste and long-lasting fresh breath.

Formulation

Position	Component	INCI	Supplier	Function	Dosage (%)
A	Demineralized water	Aqua		Carrier	36.03
	LAPONITE-XLG	Lithium Magnesium Sodium Silicate (nano)	BYK	Rheological additive	1.50
	Cosphaderm X34	Xanthan Gum	Cosphatec	Thickener	0.40
B	Sorbitol 70 %	Sorbitol, Aqua	Cargill	Carrier	16.00
	Xylit	Xylitol	Danisco	Sweetener	7.00
	Glycerin 99.5 %	Glycerin	Sigma Aldrich	Moisturizer	11.0
C	Demineralized water	Aqua		Carrier	3.00
	Natrium Fluorid	Sodium Fluoride	VMP Chemiekontor	Dental caries prophylaxis	0.22
D	PlantaCare 818 UP	Coco Glucoside	BASF	Surfactant	3.00
	Amisoft LS 11	Sodium Lauroyl Glutamate	Ajinomoto	Surfactant	1.00
	Zeodent 116	Hydrated Silica	Evonik	Abrasive/whitening agent	7.00
	Zeodent 153	Hydrated Silica	Evonik	Thickener/whitening agent	8.00
	Spherilex 148	Hydrated Silica	Evonik	Whitener/dentil tubuli active	3.00
E	Eukalyptus Oil	Eukalyptus Globulus Leaf Oil, Limonene	Henry Lamotte Oils GmbH	Aroma	0.10
	Spearmint Oil	Mentha Viridis Leaf Oil, Carvone, Limonene, Menthol	Henry Lamotte Oils GmbH	Aroma	0.70
	Lemongras Oil	Cymbopogon Citratus Leaf Oil, Citral	Henry Lamotte Oils GmbH	Aroma	0.05
	Cosphaderm Dicapo Natural	Caprylyl Glycol, Propandiol, Glyceryl Caprylate	Cosphatec	Multifunctional	1.00
F	Cocos Oil	Cocos Nucifera Oil	Gustav Heess GmbH	Antimicrobial	1.00
Total					100.00

Instructions (manufacturing procedure)

- Prepare phase B and C as a premixes in separate beakers.
- Add demineralized water into the mainbeaker and adjust the rest of phase A slowly while stirring (IKA wingstirrer, 800 rpm, 5 min).
- Add the premix of phase B while stirring (IKA wingstirrer, 800 rpm, 20 min).
- Add the premix of phase C while stirring (IKA wingstirrer, 650 rpm, 5 min).
- One after the other add the materials of phase D (IKA wingstirrer, 650 rpm, 20 min).
The surfactants have to be dissolved completely before adding the silicates step by step.
- Add the ingredients of phase E while stirring (IKA wingstirrer, 650 rpm, 5 min).
- Add phase F and stir a short time (IKA wingstirrer, 650 rpm, 1 min).
- Homogenize with ultra turrax (6000 rpm, 1 min).
- Measure the pH-value. It should be in range 6.0–7.0.
- Measure it again after 24 h. It should be in range 6.5–7.5.
- Fill into packaging.

Characteristic data

- Appearance: white, translucent, viscous suspension.
- Storage stability: 3 months at 40 °C.

LAPONITE-XLG is an synthetic phyllosilicate-based rheology additive for aqueous systems. LAPONITE additives increase the viscosity mainly in the low shear range and generate a thixotropic flow behavior. LAPONITE-XLG provides excellent anti-settling properties and storage stability.



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