LAPONITE-XL 21

Rheology additive based on synthetic phyllosilicate for aqueous systems to provide thixotropic stabilization in personal care applications.

Product data

Composition
Synthetic (modified) phyllosilicate
(INCI: Sodium Magnesium Fluorosilicate (nano))

Vegan

Typical properties
The values indicated in this data sheet describe typical properties and do not constitute specification limits.

Bulk density:	1000 kg/m^3
pH value (2 % in H_2O):	approx. 10
Moisture content:	max. 10 %
Sieve residue (60 mesh/250 µm):	max. 2 %
Gel strength:	min. 22 g
Gel time:	max. 6 min
Dispersion rate:	max. 30
Clarity:	max. 60
Lead content:	max. 5 mg/kg
Arsenic content:	max. 1 mg/kg
Total viable count:	max. 750 cfu/g
Color:	white
Delivery form:	free-flowing powder

Storage and transportation
LAPONITE-XL 21 is hygroscopic and should be transported and stored dry in the unopened original container at temperatures between 0 °C and 30 °C.

Applications

Personal care

Special features and benefits
LAPONITE-XL 21 is suitable for use in formulations with a pH value of 5.5 and lower. In water or aqueous solutions of alcohols, it swells to clear and colorless colloidal dispersions, leading to the formation of a gel structure. At additive concentrations of more than 2 % in water, strongly thixotropic gels are formed. The unique thixotropic properties provided by LAPONITE-XL 21 improve the skin feel of personal care products and create a light, non-sticky texture. In addition, the additive enhances the stability of emulsions and prevents the settling of particles, pigments, and solid actives. It is compatible with solutions of up to 40 % ethanol. When used in combination with co-thickeners, it can be added to formulations containing > 60 % ethanol.

Recommended use

Creams and lotions	■
Sunscreen products	■
Depilatory creams	■
Toothpastes	■
Shower gels and shampoos	■
Liquid makeup	■
Eye makeup	■

■ especially recommended □ recommended

Recommended levels

0.1–5 % additive (as supplied) based on the total formulation, depending on the application.

The above recommended levels can be used for orientation. The optimum dosage should be determined by application-related test series.

Incorporation and processing instructions

LAPONITE-XL 21 should be added steadily to deionized water at a temperature of 15 to 25 °C under high shear within 10 to 30 seconds. It should be stirred fast enough that a turbulent vortex current is formed, so that the powder is well dispersed and clumps are avoided. After complete addition, stirring is continued for 20 minutes. At complete dispersion, a clear, colorless, and low-viscosity pre-mix is obtained. Once this pre-mix is combined with other components of the formulation, viscosity develops instantaneously. This can be affected by temperature, electrolytes, or pH value.

Special note

LAPONITE-XL 21 is not compatible with cationic compounds. Therefore, for pH adjustment, citric acid, lactic acid, or sodium dihydrogen phosphate are recommended to lower the pH value and sodium hydroxide to increase the pH value. As the additive is a weak base and can thus lead to an increase in pH, it may be necessary to adjust the initial pH to a value below the target pH value.

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