

Rheological additives

XL01

Features and Advantages:

A synthetic flake silicate for water-based systems, providing thixotropic stability in personal care applications.

Product Specifications:

Appearance	White, loose powder
Bulk Density	1,000 kg/m ³
pH (2% aqueous solution)	Approx. 10
Moisture Content	Max. 10%
Sieve Residue (60 mesh/250 µm)	Max. 2%
Surface Area	370 m ² /g
Gel Strength	Min. 22 g
Gel Time	Max. 6 min
Dispersibility	Max. 25
Transparency	Max. 22
Lead Content	Max. 5 mg/kg
Arsenic Content	Max. 1 mg/kg
Total Viable Count	Max. 750 cfu/g

Application fields:

Personal Care Products

Characteristics and Benefits

XL01 is suitable for formulations with a pH of 6.5 or lower. In aqueous or alcohol-based aqueous solutions, it swells to form a transparent, colourless colloidal dispersion and develops a gel structure. When the concentration of this additive in water exceeds 2 per cent, it forms a strongly thixotropic gel. The unique thixotropic properties provided by XL01 improve the skin feel of personal care products and create a light, non-sticky texture. Furthermore, this additive enhances the stability of emulsions and prevents the settling of particles, pigments and solid active ingredients. It also effectively stabilises water-in-oil emulsions and is compatible with ethanol solutions at concentrations of up to 40 per cent. When blended with co-thickeners, it can be used in formulations with an ethanol content of >60%.

Recommended Applications

Face creams and lotions, suncare products, depilatories, toothpaste, shower gels and shampoos, anti-dandruff shampoos, liquid make-up, foundation, eye make-up

Recommended usage

0.1–5% of the total formulation (as supplied); the specific dosage depends on the ingredients. The above recommendations are provided for reference. The optimum dosage should be confirmed through relevant application series testing.

Addition and processing instructions

XL01 should be added steadily to deionised water at a temperature of 15 to 25 °C under high shear for 10 to 30 seconds. The stirring speed must be sufficiently high to create turbulent vortices, ensuring the powder is well dispersed and preventing caking. Once addition is complete, continue stirring for 20 minutes. Once fully dispersed, a clear, colourless premix with low viscosity will be obtained. The viscosity of this premix will increase immediately upon mixing with other ingredients in the formulation. This may be influenced by temperature, electrolytes or pH.

Special Note

XL01 is incompatible with cationic compounds. Therefore, when adjusting the pH, it is recommended to use citric acid, lactic acid or sodium dihydrogen phosphate to lower the pH, or

sodium hydroxide to raise it. As this additive is a weak base, it will cause the pH to rise; consequently, the pH must be adjusted to below the target value prior to addition.

Packing:

Net weight: 25 kg.

Storage:

As the product is hygroscopic, it should be transported and stored in dry conditions within its unopened original container at temperatures between 0 °C and 30 °C.