



# JK-703S

**Chemical Name:** Hydroxypropyl Guar

**CAS Number:** 39421-75-5

**JK-703S** is a rheology modifier with an extra strong delayed swelling, of medium viscosity, based on natural polysaccharides, developed for an optimal rheologic behavior of waterborne wall paints, and other purposes up to pH of max.12. JK-703S has a very high molar substitution which makes it suitable for alkaline conditions.

## Specifications

Chemical description	Nonionic etherified guar gum
Appearance	Ivory fine powder
Moisture	8% Max
Particle Size through US 60 mesh	99.9% Min
through US 120 mesh	99.0% Min
Viscosity (mPa.s) (25°C, 2% sol., Brookfield, Spindle 4#, 20RPM)	11000 Min
pH value	5.0~7.0

## Technical characteristics

### Strong delayed solubility

The production process of JK-703S includes a special surface treatment which delays the swelling of the product in water at a neutral or slightly acidic pH. This enables the user to disperse JK-703S easily in water without getting lumps, even at much higher than usual concentrations. The visible swelling delay of a 2% solution happens after approx. 25 minutes at neutral pH and 20°C. By increasing the pH to 8.5 – 9 or higher, the swelling occurs rather quickly.

### Viscosity

Solutions of JK-703S behave pseudoplastically; i.e. the viscosity decreases as a function of increased shear-rate, independent of time. Furthermore the viscosity increases at rising concentration and decreases at rising temperature.

### Stability against biological attack

As a consequence of the high degree of substitution, JK-703S contains almost no germs and shows reasonable resistance against bacteria, moulds and other micro-organisms. Nevertheless it is necessary to add a suitable in-can preservative agent to the paint formulation.

### Storage

If stored in unopened, original bags, under cool and dry conditions and away from heat, JK-703S will stay within the specifications for 12 months, at least

## Application and dosage

Using JK-703S, it is possible to formulate waterborne paints with a final viscosity similar to such ones containing cellulose-ether (medium grades). The optimal concentration of JK-703S has to be determined by the user himself within his own formulations.

A fast increase of viscosity is obtained by adding alkaline (e.g. caustic soda) right from the beginning of the paint production process, but always just after having added JK-703S to the neutral water, and dispersed fully. Adding alkali only in the letdown allows dispersing at lower viscosity. This simplifies the dispersion of pigments and fillers:

Components containing borates in the formulation are to be strictly avoided: gelification may occur!

Further to the thickening effect, JK-703S stabilizes pigments and fillers and regulates the water