ELEMENTIS
A global specialty chemicals company

Enhanced Performance Through Applied Innovation

BENATHIX®

Rheological Additive for Unsaturated Polyester Laminating Resins

GENERAL INFORMATION

BENATHIX rheological additive is an extremely efficient, organically modified smectite clay developed to impart thixotropy and drainage control to unsaturated polyester laminating resins and gel coats.

Unlike conventional organoclays or fumed silica thixotropes, **BENATHIX** rheological additive does not require high-shear mixing equipment. **BENATHIX** rheological additive is mixed into styrene, after which the resin and other ingredients are added.

CHEMICAL & PHYSICAL PROPERTIES

Composition	organically modified smectite clay
Colour/ Form	very light cream, finely divided powder
Specific gravity	1.74
Apparent density	0.15 g/cm³

These are typical properties not to be used for specification purposes.

APPLICATIONS

- **BENATHIX** rheological additive is a specially designed thickener for unsaturated polyester resins in structural applications.

KEY PROPERTIES

- Is a cost-effective alternative to fumed silica and other organophilic clays
- Is easy to disperse
- Allows rapid incorporation into styrene with low-shear mixers
- Provides consistent, stable viscosity and thixotropic index
- Imparts excellent drainage control, even at low viscosity and thixotropic indices
- Offers fast viscosity recovery rate after spray-out or roll-out
- Improves resistance to settling and syneresis
- Produces better glass-wetting properties
- Is easier to handle than fumed silica
- Allows increased filler loadings
- Offers good clarity in cured resins
- Gives minimal gel-time drift

INCORPORATION

BENATHIX rheological additive is first added to the styrene. Good turbulent mixing of the **BENATHIX** and styrene, prior to the addition of the resin, is sufficient to get an optimal performance.

Our laboratory tests, using a typical laminating resin at 56 % solids, indicate that the optimum concentration of **BENATHIX** in styrene is 6 %.

Incorporation of **BENATHIX** in styrene does not require high shear forces. Although high shear incorporation also gives good results, low-speed stirring is enough. Mixing with the resin should take place at the lowest possible speed to avoid air entrapment.

Post-production correction

Adapting the viscosity of a batch is possible with a 6% BENATHIX-in-styrene mix. HOWEVER, care must be taken to avoid reducing the resins solids excessively.

LEVELS OF USE

The level of **BENATHIX** rheological additive to be used depends on the specific polyester resin and on the degree of viscosity development and drainage control desired. Typical use levels range from 0.5% to 1.0% by weight in most formulations. Typical use levels, for equivalent performance, compared with conventional additives are as follows:

40 % less **BENATHIX** required compared with a than conventional organoclay

35 % less **BENATHIX** required compared with fumed silica

20 % less **BENATHIX** required compared with fumed silica/ethylene glycol

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HEALTH AND SAFETY

Before using this product please consult our Safety Data Sheet (SDS) for information on safe handling and storage. The SDS can be found on the company website.

STORAGE RECOMMENDATIONS

Store in a cool, dry location.

BENATHIX rheological additive does not absorb significant quantities of moisture when stored over long periods which means you get predictable performance over time in your polyester systems.

SHELF LIFE

BENATHIX has a shelf life of 4 (four) years from date of manufacture.

QUALITY ASSURANCE

Since 1992 the company is a holder of the ISO 9001 / ISO 9002 certificates, which guarantees that all operations are conducted according to the stipulated standards.

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