

BENGEL[®] 434

Rheological Additive for Low to Medium Polarity Solvent Based Coatings

GENERAL INFORMATION

BENGEL 434 rheological additive is a general purpose organoclay (tetra-alkyl ammonium bentonite) designed for low to medium polarity aliphatic and aromatic coating systems. It also works fine in selective high polarity systems.

CHEMICAL & PHYSICAL PROPERTIES

Composition	tetra-alkyl ammonium bentonite
Color	creamy white
Form	finely divided powder
Moisture	3 % maximum
Density	1.9 g / cm ³
Bulk Density	0.35 g / cm ³

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

APPLICATIONS

BENGEL 434 is designed for low to medium polarity paint systems. It performs well in the following systems

- Interior / Exterior Architectural Coatings
- Industrial Coatings
- Protective / Anticorrosive Coatings

KEY PROPERTIES

BENGEL 434 Rheological Additive

- effectively control pigment suspension both in storage and in transit
- effectively builds viscosity and sag control
- controls flooding and floating of colors
- stabilizes the paint prevents excessive penetration of liquid vehicles into porous substrates

INCORPORATION

BENGEL 434 rheological additive can be incorporated into solvent based coatings using either high shear or high speed types of processing equipment. Optimum gelling efficiency is obtained when the proper degree of mechanical, chemical and thermal energy is applied to the system. The processing equipment should provide sufficient amount of mechanical and thermal energy. The required chemical energy is supplied by a chemical (polar) activator.

Chemical (Polar) Activators

Types of Chemical (Polar) Activator	% based on the weight of dry BENGEL 434
Methanol / H ₂ O (95 / 5)	33 %
Ethanol / H ₂ O (95 / 5)	50 %
Propylene Carbonate / H ₂ O (95 / 5)	33 %
DAPRO BEZ 75	30 - 50 %
Disponer 912	30 - 50 %

A pregel of **BENGEL 434** is recommended to ensure optimum performance especially under less than optimum conditions of incorporation.

HIGH SPEED DISPERSION

BENGEL 434 is typically added as follows:

1. Vehicle / Solvent (mix)
2. **BENGEL 434** (mix 10 minutes)
3. Chemical (polar) activator (mix 5 to 10 minutes)
4. Surfactant (if any)
5. Pigment(s) (disperse to desired F.O.G.)
6. Let down (with remaining ingredients)

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Note the indicated mixing times are essential for the full wetting and activation of the **BENGEL 434**. The **BENGEL 434** will wet-out most efficiently when the vehicle/solvent is between 21 °C to 32 °C. Be sure that surfactants or pigment dispersants are added after the **BENGEL 434**.

High Shear Dispersion

High Shear Equipment (ball mills, roller mills, sand mills, media mills, etc.)

Use the same order of addition as for the high speed dispersion equipment. When using a ball mill or pebble mill, the vehicle/solvent, **BENGEL 434** and chemical (polar) activator should be mixed together in the mill for 5 to 10 minutes before charging the pigments and surfactants.

LEVELS OF USE

The amount of **BENGEL 434** rheological additive required depends upon the type of organic system and the degree of thickening or other rheology properties desired.

Typical **BENGEL 434** use levels are 0.3 % to 1.2 % by weight of the total system. A loading ladder study must be made to determine the optimum level of use.

HANDLING AND SAFETY

More detailed information on handling and safety for each product is included in the relevant material safety data sheet, available for each product.

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

SHELF LIFE

BENGEL 434 rheological additive 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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