

Rheological Additive for Moderate to High Polarity Organic Systems

GENERAL INFORMATION

BENTONE 27 rheological additive is an organic derivative of a hectorite clay. It is designed for moderate to high-polarity organic systems and for synthetic binders.

PHYSICAL PROPERTIES

Composition	organic derivative of a hectorite clay
Color / Form	creamy white, finely divided powder
Density	1.8 g/cm ³
Moisture	max 3.0 %

APPLICATIONS

- Adhesives and mastic compounds
- Anti-corrosive paints
- Anti fouling paints
- Cosmetics
- Foundry mould paints
- Gravure and flexographic printing inks
- Industrial finishes
- Plastisols, organosols
- Wash primers

KEY PROPERTIES

BENTONE 27 rheological additive

- increases viscosity
- provides thixotropy
- prevents pigment settling during storage
- improves flow and leveling
- controls sagging on vertical surfaces and penetration on porous substrates
- prevents syneresis in thixotropic systems

INCORPORATION

General

Incorporation of BENTONE 27 in organic systems (e.g. paints) requires high-shear dispersion equipment and a chemical activator.

Two basic incorporation methods can be used:

1. Addition of BENTONE 27 as a dry powder for in-situ dispersion and activation

The BENTONE 27 powder is added directly to the resin/solvent blend and is thoroughly mixed for 10 minutes. A chemical activator (see below) should be added next and mixed for 10 minutes. The pigments and fillers are then added and dispersed with high shear for at least 15 minutes.

2. Addition of BENTONE 27 as pregel of 5%–10% by weight

The solvent is charged to the mixing tank. BENTONE 27 powder is added and dispersed under high shear. A chemical activator can then be introduced to optimize gelation (see below).

For incorporation in the full formulation the pregel is added to the resin/solvent mixture with stirring. Pigments and fillers are then incorporated and dispersed under high shear.

For more details see Rheology Handbook.

Suitable dispersion equipment

High-speed disc impellers (Cowles dissolver); Ultra-Turrax, pearl-, sand-, ball- and three-roll mills.

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Chemical activators

Recommended to ensure full activation, i.e. optimum efficiency of BENTONE 27.

Suitable chemical activator	% based on weight of dry BENTONE 27
Methanol/H ₂ O (95/5)	33 %
Propylene carbonate	33 %
Propylene carbonate/ H ₂ O (95/5)	33 %
Ethanol/ H ₂ O (95/5)	50 %
Acetone/ H ₂ O (95/5)	60 %

LEVELS OF USE

The level depends on the system in which BENTONE 27 is to be used.

In paints of intermediate or high polarity, typical levels range between 0.2 and 1.0% BENTONE 27 (dry) based on total system weight. In synthetic resins (epoxy, polyester), quantities to be added are between 0.5 and 1.0 %.

HEALTH AND SAFETY DATA

Before using this product please consult our Material Safety Data Sheet (MSDS) for information on safe handling and storage. MSDS's can be found on the company website at www.elementis-specialties.com.

STORAGE RECOMMENDATIONS

Store in a cool, dry location.

SHELF LIFE

BENTONE 27 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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