

Rheological Additive for Low to Intermediate Polarity Organic Systems

GENERAL INFORMATION

BENTONE 34 is an organic derivative of a bentonite clay. This rheological additive is designed for low to intermediate polarity organic systems.

PHYSICAL PROPERTIES

Composition	organic derivative of a bentonite clay
Color / Form	light cream, finely divided powder
Density	1.7 g/cm ³
Moisture	max. 3%

APPLICATIONS

- Adhesives
- Anti-corrosive paints
- Automotive finishes
- Bituminous compositions
- Buffing compounds
- Coil coating systems
- Dip coatings
- Finishes for household appliances
- Greases
- High-build systems
- Industrial finishes
- Interior and exterior house paints including do-it-yourself paints
- Knifing fillers
- Mould release agents
- Paint stripper pastes
- Plastics
- Primers, undercoats, fillers
- Printing inks
- Putty and caulking compounds
- Refinishes for household appliances
- Road marking paints
- Underbody sealants and sound-absorbing compounds
- Wood preservatives and finishing systems
- Waxes
- Wood preservatives and finishing systems

KEY PROPERTIES

Advantages of BENTONE 34:

- 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 34 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 34 as a dry powder for in-situ dispersion and activation
The BENTONE 34 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 34 as pregel of 5%–10% by weight

The solvent is charged to the mixing tank. BENTONE 34 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 the Elementis Specialties Rheology Handbook.

Suitable dispersion equipment

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

Chemical activators

Recommended to ensure full activation, i.e. optimum efficiency of BENTONE 34.

Suitable chemical activator	% based on weight of dry BENTONE 34
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

Recommended use level of BENTONE 34

The level depends on the system in which BENTONE 34 is to be used. For house paints and industrial paints typical levels are between 0.2 and 0.5 % (dry) BENTONE 34 based on total system weight. For primers slightly higher quantities are required (0.5 —1 % dry BENTONE 34). In aqueous systems between 0.2 and 0.3 % BENTONE 34 (dry) are used.

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 34 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.