

BENTONE® 52

Rheological Additive for Low to Intermediate Polarity Organic Systems

GENERAL INFORMATION

BENTONE 52 is an organic derivative of bentonite clay. This highly efficient and cost-effective rheological additive is designed for low- to medium-polarity organic systems.

CHEMICAL & PHYSICAL PROPERTIES

Composition	organic derivative of a bentonite clay
Color / Form	light cream, finely divided powder
Density	1.7 g/cm ³
Moisture	3.0 % max

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

APPLICATIONS

- Adhesives
- Anti-corrosive paints
- Automotive finishes and primers
- Coil coating systems
- Decorative paints
- Foundry paints
- Greases
- High-build systems
- Industrial paints, stoving and air drying
- Interior and exterior house paints
- Plastics, organosols
- Primers
- Refinish systems
- Sealants
- Varnishes
- Wood stains

KEY PROPERTIES

- 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 52** 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 52** as a dry powder for in-situ dispersion and activation

The **BENTONE 52** 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 52** as pregel of 5 –10% by weight

The solvent is charged to the mixing tank.

BENTONE 52 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.

Suitable dispersion equipment

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

Chemical activators

The addition of a chemical activator is recommended to ensure full structuring and optimum efficiency of **BENTONE 52**. This is especially true in low-PVC formulations, such as stains and varnishes.

The following chemical activators are suggested:

Suitable chemical activator	% based on weight of dry BENTONE 52
Methanol/H ₂ O (90/10)	33 %
Propylene carbonate	33 %
Propylene carbonate/H ₂ O (95/5)	33 %
Ethanol/H ₂ O (95/5)	33 %
Acetone/H ₂ O (90/10)	60 %
H ₂ O	3 %

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LEVELS OF USE

The quantity of **BENTONE 52** to use depends on the system in question. For industrial paints typical levels are between 0.2% and 0.8% (dry) BENTONE 52 based on total system weight. In synthetic resins (epoxy, polyester) the quantities range between 0.5% and 1.0%.

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.

SHELF LIFE

BENTONE 52 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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