

# BENTONE® AD

## Rheological Additive for Water-Borne Industrial Coatings

### GENERAL INFORMATION

**BENTONE AD** rheological additive is an easily dispersible, highly refined hectorite. **BENTONE AD** has been developed for water-borne automotive base-coats and general industrial systems. It is particularly suitable for metallic-pigmented paints.

**BENTONE AD** provides a shear-thinning viscosity, exceptional anti-settling and sag control, across a wide range of application temperatures, without increasing the mid-shear-rate viscosity significantly.

**BENTONE AD** imparts excellent spraying properties and aluminium pigment alignment. Its controlled particle size gives a smooth film-appearance and does not impair gloss.

### CHEMICAL & PHYSICAL PROPERTIES

Composition	Highly refined hectorite clay
Color / Form	White, free-flowing powder
Density	2.6 g/cm <sup>3</sup>
Particle size	Minimum 90 % finer than 75 microns
pH	2 % dispersion 9.5 -10.5
Viscosity	4 % in water – minimum of 3000 map's (Brookfield RVT, spindle No. 5 @ 50 rpm)

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

### APPLICATIONS

- Metallic stoving/baking enamels
- General water-borne industrial coatings

### KEY PROPERTIES

#### Ease of use

- gel formation with moderate-shear dispersion
- simple mill-base addition
- pre-gels can be post-added

#### Rheology

- anti-settling with minimal mid-shear viscosity increase
- sag resistance over a wide range of temperatures
- shear-thinning and thixotropic
- reliable paint stability

#### Application characteristics and film appearance

- uniform spray atomization and finish
- superior metallic pigment alignment and leafing control
- fast drying

### INCORPORATION

**BENTONE AD** is incorporated into conventionally pigmented paints as a dry powder addition to the mill-base under high-shear conditions.

In metallic pigmented systems it is best incorporated as a 4 % pre-gel. The pre-gel is added to the mill-base directly after the initial charge of water-borne resin as follows:

1. water-borne resin
2. **BENTONE AD** (4 % Pre-gel)\*
3. amine (e.g. dimethylethanolamine) to pH 9.0
4. water-borne hardener
5. curing agent
6. mix
7. coalescing solvent
8. aluminium pigment paste
9. levelling additive

#### \* Pre-gel Preparation

1. water 95.5
2. base 0.5  
(e.g. 28 % ammonium hydroxide solution)
3. **BENTONE AD** 4.0

The presence of the base allows rapid wetting and hydration of the **BENTONE AD**.

Using a high-speed dissolver at 3000 rpm (peripheral speed ca. 12 m/s) for 10 –15 minutes a 4 % gel will develop 3000 mPa·s (Brookfield RVT, spindle 5, @ 50 rpm).equipment.

### LEVELS OF USE

The typical levels of use for **BENTONE AD** are 0.5 - 2.0 % by weight, in the formulation. This will depend upon the desired anti-settling and sag resistance required.

### 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 dry place. **BENTONE AD** additive will absorb moisture if stored under high humidity conditions. This, however, will not affect its overall performance.

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## BENTONE<sup>®</sup> AD

### SHELF LIFE

**BENTONE AD** 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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#### North America

Elementis Specialties, Inc.  
469 Old Trenton Road  
East Windsor  
NJ 08512, USA  
Tel.: +1 609 443 2500  
Fax: +1 609 443 2422

#### Europe

Elementis UK Ltd.  
c/o Elementis GmbH  
Stolberger Strasse 370  
50933 Cologne, Germany  
Tel.: +49 221 2923 2066  
Fax: +49 221 2923 2011

#### Asia

Deuchem (Shanghai) Chemical Co., Ltd.  
99, Lianyang Road  
Songjiang Industrial Zone  
Shanghai, China 201613  
Tel.: +86 21 5774 0348  
Fax: +86 21 5774 3563