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A global specialty chemicals company

Enhanced Performance Through Applied Innovation

BENTONE GEL® AG1

Rheological Additive For Agricultural Applications

GENERAL INFORMATION

BENTONE GEL AG1 is a specially prepared dispersion of an organically modified hectorite in Hybrid Sunflower Seed Oil. This grade is designed to impart rheological control and suspension to agricultural formulations.

BENTONE GEL AG1 is also particularly useful in emulsions and suspensions and can be used in "cold process" systems. It provides thermostable viscosity control of the emulsion's oil phase, thixotropic rheology, and provides a high yield value for effective suspension of actives.

INCI NAME

Helianthus Annuus (Sunflower) Seed Oil, Disteardimonium Hectorite, Propylene Carbonate

CHEMICAL & PHYSICAL PROPERTIES

Color / Form	Tan Gel
Viscosity, Brookfield Helipath, TF spindle, Pa.s @ 2.5 rpm	200 – 800
Infrared	To Match Standard
% Ash Content	5.9 - 6.4

These are typical properties not to be used for specification purposes

APPLICATIONS

- Suspensions
- Suspo-Emulsions
- Emulsions
- Emulsions Concentrates

KEY PROPERTIES

Rheological control

- Predictable, reproducible and stable viscosity control
- Shear-thinning viscosity
- Excellent suspension of pigments and actives
- Emulsion stabilization [w/o and o/w]

Convenience

- Optimally pre-activated and dispersed organoclay
- Incorporates with medium-shear mixing
- Can be added at any convenient stage of manufacture
- Gives a high degree of formulating flexibility
- Provides highly reproducible results for multi-site production requirements

INCORPORATION

BENTONE GEL AG1 can be added at any convenient suitable stage during the manufacturing cycle.

BENTONE GEL additive is a very high viscosity, shear-thinning product. To ensure good homogeneous mixing is achieved, care must be taken to overcome the large viscosity differential existing between the BENTONE GEL and the other lower viscosity components. Choice of mixing equipment and the configuration within the mixing vessels are critical factors in developing the optimum performance of the BENTONE GEL additives. The use of medium- to high-shear mixing equipment is recommended.

BATCH PROCESSING

- Single Phase Systems : Always add the BENTONE GEL, under shear, to a portion of the organic component or solvent with which it is most compatible. Mix until homogeneous before adding the other ingredients.
- Multi-Phase Systems e.g. emulsions : Treat as the single phase but always ensure the BENTONE GEL additive is thoroughly mixed in before the emulsification stage.
- Continuous Processing : The BENTONE GEL should be added to the oil phase at any convenient point that meets the above guidelines for batch processing. In multi-manifold systems, a flowable pre-mix of the BENTONE GEL with a compatible oil or solvent should be made in a side pot. Where only lower-shear mixing equipment is available, stir the BENTONE GEL alone and then slowly add the most compatible

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component by portions, always ensuring the mixture remains homogeneous at each stage.

LEVELS OF USE

The level of use of the BENTONE GEL will depend on the formulation. Suspension will be provided by 2.5-10.0% additions. In emulsions, thickening will occur in the oil phase only and emulsion viscosities will be influenced by 3-5% additions. Novel emulsification effects can be achieved, giving light feel and lower viscosities. In some water-in-oil systems a reduction of surfactant may be achievable by the use of BENTONE GEL additive.

Higher levels of BENTONE GEL will have a greater viscosity influence and thermostable viscosity in single phase systems may be achieved by 10-25% additions.

COMPATIBILITY

BENTONE GEL additives can contribute greatly to a formulation's stability by improving the compatibility of other ingredients. Care should be taken to determine the compatibility of the BENTONE GEL additive with the oils, actives or surfactant ingredients within a formulation. The wide range of grades available allows selection of the optimal carrier and organoclay for each system.

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 away from excessive heat.

SHELF LIFE

BENTONE GEL AG1 has a minimum shelf life of 2 (two) years from date of manufacture.

QUALITY ASSURANCE

Quality and continuous improvement are paramount to our business. Facility manufacturing Bentone Gels® has established strong integrated management system and holds ISO 9001, ISO 14001, ISO 45001 and EFfCI GMP certifications.

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