GARAMITE-7303

Powdered rheology additive for non-polar to medium-polar solvent-borne and solvent-free systems to increase the storage stability and sag resistance.

Product data

Composition
Organophilic phyllosilicates

Typical properties
The values indicated in this data sheet describe typical properties and do not constitute specification limits.

Density (23 °C):	1.5–1.7 g/cm³
Loose bulk density:	approx. 120 kg/m³
Water content:	< 6 %

Storage and transportation
To be stored at temperatures below 50 °C. Keep the container tightly closed in a dry and well-ventilated place.

Applications

Coatings industry

Special features and benefits
GARAMITE-7303 is a rheology additive that offers benefits over conventional organophilic phyllosilicates (organoclays). Conventional phyllosilicates typically require incorporation at high shear forces and polar activators to support dispersion. In contrast, GARAMITE-7303 can be easily incorporated and activated in solvents and binders under moderate shear force. The additive has a highly pseudoplastic viscosity profile. GARAMITE-7303 makes it possible to produce formulations with high viscosity in the low shear range, which results in outstanding anti-settling and anti-syneresis properties. Applying shear force causes a strong reduction in viscosity which significantly improves the application properties.

Recommended use
GARAMITE-7303 is ideally suited to non-polar and medium-polar systems in the following applications:

Architectural coatings	■
Protective coatings	■
Industrial coatings	□

■ especially recommended □ recommended

Recommended levels
0.5–2 % additive (as supplied) based upon the total formulation.

The above recommended levels can be used for orientation. The optimum dosage should be determined by application-related test series.

Incorporation and processing instructions
The additive can be incorporated in different ways. Either disperse GARAMITE-7303 directly in the millbase or add it as a 10–15 % paste in solvent to the millbase or letdown. The additive should be incorporated into the solvent at sufficient shear force. When adding during the milling process, we recommend pre-dispersing in the binder and solvent at moderate shear force before adding the pigments and fillers. The effect of GARAMITE-7303 can be further increased by adding a booster or small quantities of a polar solvent or water.

PVC plastisols

Special features and benefits
GARAMITE-7303 is a powdered rheology additive based on a composition of organically modified phyllosilicates. It is particularly suited to formulating PVC plastisols. The combination of a variety of morphological structures increases the particle spacing and makes dispersion in the liquid phase particularly easy.

The use of GARAMITE-7303 offers the following benefits:
- Pseudoplastic flow
- No impact on the VOC content
- Easy to incorporate
- Broad compatibility with various plasticizers
- Greater effectiveness than precipitated fillers

Recommended levels
1–5 % additive (as supplied) based upon the total formulation.

The above recommended levels can be used for orientation. The optimum dosage should be determined by application-related test series.

Incorporation and processing instructions
GARAMITE-7303 can be directly incorporated into the liquid phase or post-added under moderate shear force. We recommend checking the influence of the product on haze, hue and thermal stability in a series of laboratory tests.

Detergents, cleaning and care products

Special features and benefits
GARAMITE-7303 is a powdered rheology additive for use in low to medium-polar solvent systems that contain mineral oils, isoparaffin, white spirits, silicone oils or aromatic solvents. GARAMITE-7303 can be dispersed very easily and can even be processed at low shear forces. It does not require an activator to reach full effectiveness. GARAMITE-7303 produces outstanding sag resistance and effectively prevents settling and syneresis.

Recommended use
GARAMITE-7303 is suitable for a wide range of solvent-borne systems, especially:

Industrial cleaning agents (non-polar)	■
Non-aqueous liquid detergents	□

■ especially recommended □ recommended

Recommended levels
0.5–3 % additive (as supplied) based upon the total formulation, depending on the properties of the formulation to be achieved.

The above recommended levels can be used for orientation. The optimum dosage should be determined by application-related test series.

Incorporation and processing instructions
GARAMITE-7303 can either be incorporated as a paste or in situ.

Pastes can be produced in the following way:
1. Place the organic solvent in the dispersion vessel
2. Gradually add GARAMITE-7303 (up to 20%, based on the paste) whilst stirring
3. Mix for 15 minutes whilst stirring

The additive can be directly incorporated during manufacture as follows:
1. Place the organic solvent or oil in the dispersion vessel
2. Gradually add GARAMITE-7303 whilst stirring
3. Mix for 15 minutes whilst stirring
4. Continue adding the other formulation components

It is also possible to post-add GARAMITE-7303 to a finished system. This requires higher shear forces and the batch temperature needs to be below 50 °C.

Adhesives and sealants

Special features and benefits
GARAMITE-7303 is a powdered rheology additive for use in adhesives and sealants, and contributes to improving sagging whilst enabling easy processing. The additive is characterized by particularly easy incorporation with a high efficiency in various binder systems based on polyurethanes, epoxides and silane-terminated polymers.

GARAMITE-7303 offers the following benefits compared with conventional rheology additives:
- Higher sagging stability
- High shear thinning effect
- Very easy incorporation
- Tolerant to high shear forces
- No heat or activators are needed for activation
- Greater bulk density than fumed silica, making it easier to use with significantly reduced dusting
- Greater efficiency and/or lower dosage

Recommended levels
0.5–5 % additive (as supplied) based upon the total formulation.

The above recommended levels can be used for orientation. The optimum dosage should be determined by application-related test series.

Incorporation and processing instructions
GARAMITE-7303 can be incorporated directly into the formulation. It is important that for one-component moisture-curing systems GARAMITE-7303 is either pre-dried or dried using chemical water scavengers. In both cases, drying can be performed in combination with standard fillers such as $CaCO_3$.

Non-aqueous drilling fluids

Special features and benefits

GARAMITE-7303 is a unique rheology additive that can be used as a suspension aid in all oil-based drilling fluids.

GARAMITE-7303 provides the following properties and benefits:

- Temperature-stable rheology to >200 °C
- Easy incorporation
- High low-shear viscosity
- Improved sag resistance and anti-settling of solids
- Compatibility and synergy with traditional organoclays

Recommended use

GARAMITE-7303 is recommended for the following applications:

Diesel-based drilling fluids	■
Mineral oil-based drilling fluids	□
Synthetic oil-based drilling fluids	■

■ especially recommended □ recommended

Recommended levels

1.4–2.8 kg/m³ additive (as supplied).

The above recommended levels can be used for orientation. The optimum dosage should be determined by application-related test series.

Incorporation and processing instructions

The additive can be incorporated at different stages. GARAMITE-7303 can be incorporated under standard mixing conditions at the mud plant. If incorporation will take place at the rig, GARAMITE-7303 can be incorporated through the chemical hopper.

Special note

GARAMITE-7303 will incorporate much faster than traditional organoclay additives.

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