

# GARAMITE-1958

Powdered rheology additive for solvent-based and solvent-free systems to increase storage duration and sagging resistance.

## Product data

### Composition

Organophilic phyllosilicates

### Typical properties

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

Loose bulk density: 34–172 kg/m<sup>3</sup>

Delivery form: powder

### Storage and transportation

A temperature of 40 °C should not be exceeded during storage and transport.

## Applications

### Coatings industry

#### Special features and benefits

GARAMITE-1958 is a unique rheology additive with very wide compatibility in a wide range of solvent-based and solvent-free coating systems.

GARAMITE-1958 has the following product features and benefits:

- Pseudoplastic flow
- Improves sagging resistance
- Improves anti-settling properties
- Supports the alignment of effect pigments

Due to its high bulk density, it is easy to handle and is not sensitive to shear forces.

#### Recommended use

GARAMITE-1958 is recommended for the following applications:

Protective coatings	<input checked="" type="checkbox"/>
Industrial coatings	<input type="checkbox"/>
Architectural coatings	<input type="checkbox"/>
Floor coatings	<input checked="" type="checkbox"/>
Powder coatings	<input checked="" type="checkbox"/>

especially recommended    recommended

**Recommended levels**

0.1–2 % additive (as supplied) based on 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 various ways. GARAMITE-1958 is either dispersed directly in the millbase or added as a 10 to 15 % paste in solvent to the millbase or letdown. It should be incorporated into the solvent using adequate shear forces. When adding during the grinding process, it should be pre-dispersed in the binder and solvent with moderate shear forces before adding the pigments and fillers. The effect of GARAMITE-1958 can be increased by adding a booster or small quantities of a polar solvent or water.

**Powder coatings****Special features and benefits**

GARAMITE-1958 is a rheology additive that can be used to increase melt viscosity in powder coatings. Even at low dosage, the melt viscosity is increased during extrusion and cross-linking reaction. The resulting coating will maintain good flow properties despite its increased viscosity. The combination of different morphological structures in the mineral component results in particularly easy dispersibility with high efficiency. GARAMITE-1958 is recommended for epoxy-based resin systems. Higher dosages result in a fine texture finish and a reduction in the gloss level. GARAMITE-1958 can be used to modify the surface structure in finely textured systems. The increased melt viscosity improves edge coverage. This results in better corrosion resistance.

**Recommended use**

The additive is recommended for powder coatings based on epoxy, polyester, polyurethane and acrylate resins as well as polyester/epoxy combinations. It is particularly recommended for epoxy-based binders.

**Recommended levels**

0.5–4 % additive (as supplied) based on 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 should be mixed with resin, curing agents, pigments and other raw materials in a high-speed mixer and then extruded.

## Thermosets

### Special features and benefits

GARAMITE-1958 is a solid rheology additive based on a composition of organically modified phyllosilicates. The combination of different morphological structures in the mineral component results in particularly easy dispersibility with high efficiency. GARAMITE-1958 delivers the following advantages over conventional rheology additives in various resins based on unsaturated polyester, vinyl esters, polyurethanes and epoxy resins:

- Allows adjustment of low to higher viscosities and various layer thicknesses
- Prevents filler settling
- Systems with GARAMITE have very good shear-thinning flow properties
- Higher efficiency or lower application volume, especially in combination with booster additives
- Reduced dust generation in production compared to fumed silica
- Easy to incorporate as extremely low shear forces are required. The processing time can be significantly reduced compared to conventional fumed silica.
- No activation by heat or activators required
- Less storage area due to higher bulk density compared to fumed silica

### Recommended levels

0.5–5 % additive (as supplied) based on the resin content.

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-1958 can be incorporated directly into the resin.

A premixture in styrene is recommended to achieve full efficacy in UP/VE resins (dosages 0.5–2 %). For this purpose, 8 to 12 % GARAMITE-1958 must be incorporated into styrene. At this concentration, the mixture can still be pumped and will still flow and can be later dosed to the resin. The use of deaerators in such resins is advisable to reduce the quantity of air bubbles.

Content in UP/VE resins can be reduced by combining GARAMITE-1958 with booster additives, such as RHEOBYK-R 605. The combination also allows for the transition from a pseudoplastic to a thixotropic rheology profile and for the reduction of thixotropic drift over time.

## Detergents, cleaning and care products

### Special features and benefits

GARAMITE-1958 can be used in solvent systems within a wide polarity range from low polar to high polar. Suitable solvents include, for example, esters, vegetable oils, glycerol, aromatic compounds, mineral oils and silicone oils. It can also be used in nonionic surfactants (alcohol ethoxylates). GARAMITE-1958 is very easy to disperse and can be processed using low shear forces. It does not require an activator for gelling. GARAMITE-1958 produces excellent sagging resistance and effectively prevents settling and syneresis.

### Recommended use

GARAMITE-1958 is suitable for various organic systems, in particular:

Industrial cleaners (solvents of different polarity)	■
Non-aqueous liquid detergents	■

■ especially recommended    □ recommended

**Recommended levels**

0.5–3 % (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-1958 can be incorporated either as a pregel or in situ.

Pregel can be produced as follows:

1. Place the organic solvent in the dispersion vessel
2. Slowly add the GARAMITE-1958 (up to 20 % based on the pregel) while stirring
3. Mix for 15 minutes while stirring

Direct induction during production can be carried out as follows:

1. Place the organic solvent or oil in the dispersion vessel
2. Slowly add the GARAMITE-1958 while stirring
3. Mix for 15 minutes while stirring
4. Continue to add the other recipe components

The retrospective incorporation of GARAMITE-1958 to a finished system is also possible. Then higher shear forces are required and the temperature of the mix must be below 50 °C.

**Construction chemicals****Special features and benefits**

GARAMITE-1958 is a unique rheology additive with very wide compatibility in all solvent-based and solvent-free binder systems for construction chemical applications.

GARAMITE-1958 has the following properties:

- Pseudoplastic flow
- Increases anti-sagging properties
- Improves anti-settling properties

**Recommended use**

GARAMITE-1958 is suitable for various organic binder systems, particularly:

Joint fillers	■
Tile adhesive/grout	■
Putty compounds	■

■ 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-1958 can be incorporated as a pregel or in situ. Care must be taken to ensure that GARAMITE-1958 is either pre-dried or dried by means of chemical water catchers in one-pack moisture-curing systems. Drying can be done in both cases in combination with the usual fillers, such as CaCO<sub>3</sub>.

Pregel can be produced as follows:

1. Place the organic solvent in the dispersion vessel
2. Slowly add the GARAMITE-1958 (up to 20 % based on the pregel) while stirring
3. Mix for 15 minutes while stirring

Direct induction during production can be carried out as follows:

1. Place the organic solvent in the dispersion vessel
2. Slowly add the GARAMITE-1958 while stirring
3. Mix for 15 minutes while stirring
4. Continue to add the other recipe components

The retrospective incorporation of GARAMITE-1958 to a finished system is also possible. Then higher shear forces are required and the temperature of the mix must be below 50 °C.

**PVC plastisols****Special features and benefits**

GARAMITE-1958 is a powdered thixotropic additive based on a composition of organically modified phyllosilicates. It is particularly suitable for the formulation of PVC plastisols. The combination of different morphological structures in the mineral component results in particularly easy dispersibility in the liquid phase.

The use of GARAMITE-1958 delivers the following advantages:

- Pseudoplastic flow
- No influence on VOC content
- Easy to incorporate
- Wide compatibility with different plasticizers
- Higher efficacy than precipitated fillers

**Recommended levels**

1–5 % 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-1958 can be incorporated directly in the liquid phase or retrospectively using moderate shear forces. We recommend that you test the influence of the product on haze, color and heat stability in series of tests.

## Adhesives and sealants

### Special features and benefits

GARAMITE-1958 is a powdered rheology additive for use in adhesives and sealants, which contributes to improving sagging resistance whilst also enabling easy processing. The additive is characterized by its particularly easy dispersibility with high efficiency in various binder systems based on polyurethanes, epoxides and silane terminated polymers.

The use of GARAMITE-1958 delivers the following advantages:

- High sagging resistance
- Improves anti-settling properties
- Extreme shear thinning
- Fast viscosity buildup after shearing
- Easy to incorporate
- Insensitive to high shear forces
- No activation by heat or activators required
- Low dust generation due to high bulk density

### Recommended levels

0.5–5 % additive (as supplied) based on 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-1958 can be incorporated directly into the formulation. Care must be taken to ensure that GARAMITE-1958 is either pre-dried or dried by means of chemical water catchers in one-pack moisture-curing systems. Drying can be done in both cases in combination with the usual fillers, such as  $\text{CaCO}_3$ .

## Agricultural industry

### Special features and benefits

GARAMITE-1958 is a self-activating additive with an increased impact on viscosity in the low shear range. It is used as a universal thickener.

### Recommended use

GARAMITE-1958 is particularly suitable for use in oil-based plant protection formulations (oily solutions and oily dispersions).

### Recommended levels

0.1–2 % 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

To ensure optimum distribution and the best possible effectiveness and reproducibility in applications, GARAMITE-1958 must be added to oil slowly whilst stirring, and dispersed using high shear forces for at least 10 minutes. After incorporation, this premixture should rest for 15 to 20 minutes before all other components of the formulation are added to the dispersion.

## Non-aqueous drilling fluid systems

### Special features and benefits

GARAMITE-1958 is a unique rheology additive that can be used as a suspension agent in all oil-based drilling fluids.

The use of GARAMITE-1958 delivers the following properties and benefits:

- Easy incorporation
- High low-shear viscosity
- Improved sagging resistance and anti-settling properties of solids
- Compatibility and synergy with conventional organic phyllosilicates

### Recommended use

Diesel-based drilling fluids	■
Oil-based drilling fluids	■
Synthetic oil-based drilling fluids	■

■ especially recommended   □ recommended

### Recommended levels

1.4–2.8 kg/m<sup>3</sup> additive (as supplied) based on 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 at various points. GARAMITE-1958 can be mixed in the rinsing system using standard mixing conditions. If this is done on the drilling rig, GARAMITE-1958 can be added using the chemical funnel.

### Special note

GARAMITE-1958 is incorporated much faster than conventional organic phyllosilicate additives.



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This issue replaces all previous versions.