RHEOBYK-7590

Powdered rheology additive for non-polar solvent-borne systems, powder coatings, adhesives and sealants.

Product data

Composition
Castor oil derivative

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

Density (20 °C): 1.02 g/cm^3
Delivery form: white powder

Applications

Coatings industry

Special features and benefits
RHEOBYK-7590 is suitable for systems based on aliphatic non-polar solvents. The main fields of application are alkyd resin coatings such as architectural coatings, glazes and general industrial coatings as well as protective coatings.

Recommended use

Protective coatings	■
Architectural coatings	■
Industrial coatings	■

■ especially recommended □ recommended

Recommended levels
0.2–0.8 % 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
RHEOBYK-7590 should be added at the start of the dispersion process before the pigments and fillers, and should preferably be pre-dispersed in a solvent/binder for approximately 5 minutes. Suitable systems are exclusively those based on aliphatic non-polar solvents, such as hexane, heptane, solvent naphtha and white spirit as well as 100 % systems.

For the optimum incorporation of RHEOBYK-7590 in a non-polar coating system, a processing temperature between 35 °C and 55 °C must be observed.

If the upper temperature is exceeded, gel-like particles could be created during the cooling phase. The formation of such particles can be prevented by ensuring a mild continuous cooling down to 45 °C while stirring.

Within the specified temperature range, the dispersion of RHEOBYK-7590 at as high as possible shear forces will lead to a pronounced, immediate rheological effect as well as 100 % systems.

Special note
All castor oil-based rheology additives are sensitive to high-grade solvents and temperatures. RHEOBYK-7590 should not be added to batches already at operating temperature as swelling and agglomeration of RHEOBYK-7590 particles may occur before those particles can be dispersed. It is essential that the temperature limits for specific solvents are observed during incorporation. The addition of cold solvents in let-downs must also be avoided. A slow cooling of the finished coating batch is recommended. To avoid an over structure ("false body effect"), batches should be agitated during cool-down phase or mixed before filling.

Powder coatings

Special features and benefits
RHEOBYK-7590 is also particularly suitable for use in powder coating systems, and is broadly compatible with various binders. Due to its low melting point of 86 °C, RHEOBYK-7590 improves the flow behavior during the baking process. There is a positive effect on leveling and other visual properties such as gloss, DOI and even layers. Its high compatibility and transparency means that RHEOBYK-7590 can also be used in powder clear coats.

We recommend always using RHEOBYK-7590 in combination with a standard leveling additive in any system.

RHEOBYK-7590 also improves the mixing behavior of raw materials during the premix phase in a high-speed mixer, thus bringing about a more homogeneous extrusion which can also enable a high throughput. This also achieves an improved pigment and filler wetting.

Recommended use

Powder coatings	□

■ especially recommended □ recommended

Recommended levels
0.5–2 % 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 product is mixed with resin, hardener, pigments and other raw materials in a high-speed mixer and then extruded. Good dispersion of the additive by the extruder promotes gloss and leveling of the powder coating and prevents the formation of craters, fish eyes, and seeds.

Adhesives and sealants

Special features and benefits
RHEOBYK-7590 is an effective rheology additive for use in epoxy and single-component, silane-modified pre-polymer systems. RHEOBYK-7590 achieves a high stability with a simultaneously easier processing.

RHEOBYK-7590 demonstrates its effect by means of heat activation at 30–60 °C, and increases the viscosity of the systems in the low shear range, whereas there is minimal impact on viscosity at high shear. This guarantees simple processing and application of adhesive and sealant systems.

Recommended levels
2–7 % 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
Use in single-component, silane-modified polymer adhesives and sealants:
RHEOBYK-7590 is added to the binder, homogenized and activated by temperature (30–60 °C). Incorporation usually takes place in a dissolver with a planetary mixer. The addition of other formulation components (plasticizers, bonding agents, etc.) takes place after this.

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