RHEOBYK-7410 CA

Liquid rheology additive to produce a highly thixotropic flow behavior for medium-polar solvent-borne and solvent-free systems.

Product data

Composition
Solution of a modified urea

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

Density (20 °C):	1.07 g/cm³
Active substance:	47 %
Solvents:	Cyclic amide
Flash point:	117 °C

Storage and transportation
Moisture sensitive. Store dry and at temperatures below 35 °C. Minor turbidity of the material that occurs during storage has no influence on the rheological effectiveness. If handled and stored properly, the storage stability specified upon delivery applies in the unopened container.

Special note
We recommend using RHEOBYK-7411 CA or RHEOBYK-7420 CA for non-polar as well as highly polar and aqueous systems.

Applications

Coatings industry

Special features and benefits
After being stirred into the coating system, the additive generates a three-dimensional network structure. The resulting thixotropic flow behavior is highly suited for preventing sedimentation and increasing the anti-sagging properties without impairing leveling.

Recommended levels
0.2–1 % additive (as supplied) based upon the total formulation to prevent settling, depending on the polarity and the solids in the formulation.
0.5–2.5 % additive (as supplied) based upon the total formulation to prevent sagging, depending on the polarity and the solids in the 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 added whilst stirring using moderate shear forces to ensure a homogeneous and quick distribution. It is not necessary to specifically control the temperature. RHEOBYK-7410 CA is suitable both as an additive in the millbase and for adjusting the viscosity afterwards by post addition. If the product is suitable for the system, its rheological effectiveness builds up, dependent upon time and polarity, and can generally be evaluated 2 to 4 hours after incorporation.

Special note
If used with driers (siccatives), discoloration may occur due to the formation of metal complexes. The rheological effectiveness should then be tested.

PVC plastisols

Special features and benefits
The liquid additive is used to increase thixotropy in many PVC plastisol applications. It enables plastisols to be manufactured and processed more quickly and improves the anti-settling behavior and anti-sagging properties. RHEOBYK-7410 CA reduces floating in pigmented plastisols and improves the control of the coating profile in the gelling oven. Foam stability is increased in mechanically frothed PVC foams.

Recommended levels
0.1–0.5 % additive (as supplied) based upon the PVC resin to prevent settling and floating.
0.3–1 % additive (as supplied) based upon the PVC resin to prevent sagging. In exceptional cases doses of up to 3 % are possible.

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 post-added to the PVC plastisol, slowly whilst stirring. Depending on the formulation, the plastisol then requires a period of up to 4 hours for the initial thixotropic structure to form. In contrast, re-establishment of the structure after shearing occurs instantly.

Thermosets

Special features and benefits
The additive is ideally suited to preventing sedimentation in filled, reactive casting resin systems such as epoxy, polyurethane, and acrylate resins, and also in some polyester resins. Using the additive makes it possible to increase the anti-sagging properties without impairing leveling. Generally, RHEOBYK-7410 CA only increases the viscosity at low shear rates and therefore does not influence the application properties at high shear rates. This is made possible by the creation of a three-dimensional network structure. The time it takes to build up the network depends on the system. The time-related network build-up and the resulting thixotropic flow behavior improves the deaerating properties of the system.

Recommended levels
0.2–1 % additive (as supplied) based upon the total formulation to prevent settling.
0.4–2 % additive (as supplied) based upon the total formulation to increase the anti-sagging properties.

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 added whilst stirring and distributed homogeneously. It is not necessary to specifically control the temperature. The product is also suitable for subsequently adjusting the viscosity by incorporating it as a post-additive.

Special note
Using it with metal accelerators may cause discoloration or delayed curing.

Home care and I&I

Special features and benefits
After being incorporated into the system, the additive generates a three-dimensional network structure. The resulting thixotropic flow behavior is optimally suited to preventing particles (e.g. encapsulated fragrances) from settling without affecting the residual emptying of the container. Cleaning products with RHEOBYK-7410 CA are easy to use and can be applied by spraying. The use of the product increases adhesion to vertical surfaces, which improves the cleaning action as a result of the longer exposure time. The additive is liquid and therefore easy to handle. Detergents and cleaning products retain their transparency.

Recommended use
RHEOBYK-7410 CA is used as a rheology additive to improve the sagging and settling properties of cleaning products and detergents based on polar solvents (alcohols, glycols, esters). It can also be used in nonionic surfactants (alcohol ethoxylates).

Industrial cleaning products (polar solvents)	■
Non-aqueous and low-water liquid detergents	■

■ especially recommended □ recommended

Recommended levels
0.3–3 % 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
The additive should be added whilst stirring and distributed homogeneously. It is not necessary to specifically control the temperature. The product is also suitable for subsequently adjusting the viscosity afterwards by post addition. If the additive is suitable for the system, its rheological effectiveness builds up, dependent upon time and polarity, and can generally be evaluated 2 to 4 hours after incorporation.

Adhesives and sealants

Special features and benefits
RHEOBYK-7410 CA builds up a three-dimensional network structure after stirring into the adhesive and sealant formulation and prevents sedimentation, as well as syneresis effects in filled systems. The additive forms a thixotropic flow behavior, which increases the viscosity at a low shear rate, but does not affect the application properties at a high shear rate. When used in higher dosages, the additive enables an improvement of the anti-sagging properties.

Recommended use

RHEOBYK-7410 CA is suitable for use in medium-polar binder systems, e.g. epoxy, polyurethane, SMP and acrylate resin systems.

Recommended levels

0.2–1 % additive (as supplied) based upon the total formulation to prevent settling, depending on the polarity and the solids in the formulation.
0.5–2.5 % additive (as supplied) based upon the total formulation to prevent sagging, depending on the polarity and the solids in the 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 added whilst stirring and distributed homogeneously. It is not necessary to specifically control the temperature. The additive is also suitable for subsequently adjusting the viscosity afterwards by post addition. Rheological effectiveness builds up, dependent upon time and polarity, and can generally be evaluated 2 to 4 hours after incorporation.

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