

RHEOBYK-410

Liquid rheology additive for medium-polarity solvent-borne and solvent-free systems. The additive creates highly thixotropic flow behavior and consequently improves the anti-sagging and anti-settling properties.

Product data

Composition

Solution of modified urea

Typical properties

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

Density (20 °C):	1.13 g/cm ³
Active substance:	52 %
Solvent:	N-methylpyrrolidone
Flash point:	91 °C
Delivery form:	liquid

Storage and transportation

Product shelf life in unopened original packaging: 24 months

Moisture sensitive. Store dry in sealed containers. Turbidity may occur. This has no influence on the effectiveness of the additive.

Special note

The additive contains N-methylpyrrolidone. Variants containing alternative solvents include RHEOBYK-D 410, RHEOBYK-7410 ET oder RHEOBYK-7410 CA.

Applications

Coatings industry

Special features and benefits

RHEOBYK-410 generates a three-dimensional network structure within solvent-based and solvent-free coating systems. The resulting thixotropic flow behavior is highly suited for preventing sedimentation and increasing the anti-sagging properties without impairing leveling.

Recommended use

Architectural coatings	☐
Automotive OEM coatings	☐
Automotive refinish coatings	☐
Coil coatings	☐
Floor coatings	☐
General industrial coatings	☐
Marine and protective coatings	☐
Wood and furniture coatings	☐

☒ Especially recommended ☐ Recommended

Recommended levels

0.2-1 % additive (as supplied) based on the total formulation to prevent settling.

0.5-2 % additive (as supplied) to prevent sagging, depending on the polarity and 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

RHEOBYK-410 should be added to the coating while stirring using moderate shear forces to ensure a homogeneous and quick distribution. It is not necessary to specifically control the temperature. The additive can be added into the millbase and is also suitable for adjusting the viscosity afterwards by incorporating it as a post-additive.

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. RHEOBYK-410 is recommended for incorporation into medium-polarity systems. RHEOBYK-411 is better suited to nonpolar systems and we recommend RHEOBYK-420 for highly polar and aqueous systems.

Special note

If used with driers (siccatives), discoloration may occur due to the formation of metal complexes. The rheological effectiveness should then be tested. At standard dosage, no negative effect on yellowing is expected. The impact should be tested in systems that are susceptible to yellowing and at higher dosages. When using the additive in reactive and catalyzed systems and in systems that contain cellulose nitrate, we recommend testing the storage stability.

Thermosets**Special features and benefits**

The additive is highly suited for 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-410 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 on the total formulation to prevent settling.

0.5-2 % additive (as supplied) based on 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 additive is suitable for adjusting the viscosity afterwards by incorporating it as a post-additive.

Special note

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

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 antisagging properties. RHEOBYK-410 minimizes flooding and 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 phr additive (as supplied) based on the PVC resin to prevent settling and floating.

0.3-1 phr additive (as supplied) based on the PVC resin to prevent sagging.

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 under 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.



Your local
contact

BYK-Chemie GmbH

Abelstraße 45
46483 Wesel
Germany
Tel +49 281 670-0
info@byk.com
www.byk.com



Download
our app:
byk.com/app

ANTI-TERRA®, AQUACER®, AQUAMAT®, AQUATIX®, BENTOLITE®, BYK®, BYK-AQUAGEL®, BYK-DYNWET®, BYK-MAX®, BYK-SILCLEAN®, BYKANOL®, BYKCARE®, BYKETOL®, BYKJET®, BYKONITE®, BYKOPLAST®, BYKUMEN®, CARBOBYK®, CERACOL®, CERAFAX®, CERAFLOUR®, CERAMAT®, CERATIX®, CLAYTONE®, CLOISITE®, DISPERBYK®, DISPERPLAST®, FULACOLOR®, FULCAT®, GARAMITE®, GELWHITE®, HORDAMER®, LACTIMON®, LAPONITE®, NANOBYK®, OPTIBENT®, OPTIGEL®, PURABYK®, RECYCLOBYK®, RHEOBYK®, SCONA®, SILBYK®, TIXOGEL® and VISCOBYK® are registered trademarks of the BYK group.

The information contained herein is based on our current knowledge and experience. No warranties, guarantees and/or assurances of any kind, either express or implied, including warranties of merchantability or fitness for a particular purpose, are made regarding any products mentioned herein and data or information set forth, or that such products, data or information may be used without infringing intellectual property rights of third parties. Any information about suitability, use or application of the products is non-binding and does not constitute a commitment regarding the products' properties, use or application. Contractual terms and conditions, in particular agreed product specifications, always take precedence. We recommend that you test our products in preliminary trials to determine their suitability for your intended purpose prior to use. We reserve the right to make any changes and to update the information herein without notice.