

BYK-7410 ET

Liquid rheology additive to generate highly thixotropic flow behavior for medium-polarity 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.

Active substance: 40 %
Density (68 °F): 9.85 lbs/US gal
Solvents: Amide ether
Flash point: ca. 244 °F

Food Contact Legal Status

For the current food contact legal status, please contact our product safety department or visit www.byk.com for further information.

Storage and Transportation

Product is hygroscopic. Store dry and at temperatures below 35 °C (95 °F). Minor cloudiness of the material that occurs during storage has no influence on the rheological effectivity.

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. Optimal levels are determined through a series of laboratory tests.

Incorporation and Processing Instructions

The additive should be added to the coating whilst 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 to 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. The additive is recommended for incorporation into medium-polarity systems. BYK-7411 ES is better suited for non-polar systems and we recommended BYK-7420 ES 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, discoloration is not expected to cause any negative effect. The impact should be tested in systems that are susceptible to discoloration 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.

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. BYK-7410 ET minimizes 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 on the PVC resin to prevent settling and floating.

0.3-1 % additive (as supplied) based on 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. Optimal levels are determined through a series of laboratory tests.

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.

Ambient curing resin systems**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, BYK-7410 ET 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 air release 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. Optimal levels are determined through a series of laboratory tests.

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.

Detergents, Cleaning and Care Products**Special Features and Benefits**

After being incorporated into the system, the additive generates a three-dimensional network structure. The resulting thixotropic flow behavior is ideal for preventing particles (e.g. encapsulated fragrances) from settling, without negatively impacting the residual emptying of the container. Cleaning products with BYK-7410 ET are easy to use and can be applied by spraying. The use of the additive improves 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. The transparency of the detergents and cleaning products is preserved.

Recommended Use

BYK-7410 ET is used as a rheology additive to improve the anti-sagging and anti-settling properties in detergents and cleaning products based on polar solvents (alcohols, glycols, esters). It can also be used in liquid, non-ionic surfactants (alcohol ethoxylates).

Industrial cleaners (polar solvents)	
Non-aqueous and liquid detergents with low water content	

 especially recommended  recommended

Recommended Levels

0.3-3.0 % 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. Optimal levels are determined through a series of laboratory tests.

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 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.

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Additive Guide



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