BYK-425

Liquid, VOC-free rheology additive for aqueous systems to set the in-can viscosity and to improve the anti-sagging and anti-settling properties.

Product Data

Composition
Solution of a urea-modified polyurethane

APEO-frei
VOC-frei

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

Active substance:	50 %
Density (68 °F):	8.68 lbs/US gal
Refractive index (68 °F):	1.46
Solvents:	Polypropylene glycol
Flash point:	> 212 °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
It is preferable to store BYK-425 at temperatures between 20 °C (68 °F) and 50 °C (122 °F). Depending on the storage conditions, the additive can appear non-homogeneous; there is no known influence on the rheological effectiveness. Mix well before use.

Applications

Coatings, Printing Inks, and Adhesives

Special Features and Benefits
The rheological effectiveness of BYK-425 is primarily based on the associative interaction with the dispersion particles of the aqueous binder and enables a highly pronounced pseudoplastic flow behavior. The urea modification of the additive also causes an increase in the rheological effect via hydrogen bonds. BYK-425 is VOC- and APEO-free, does not impair gloss, and its rheological effect is not dependent on the pH value.

Recommended Use
BYK-425 is suitable for all kinds of aqueous coatings, printing inks, and adhesives in order to improve the anti-sagging properties and set the required in-can viscosity of the formulation. The resulting increase in viscosity simultaneously improves the storage stability with reduced settling. When grinding pigment pastes, the additive can also increase the millbase viscosity and therefore improve the dispersion conditions.

For formulations with a considerably lower application viscosity (e.g. coatings for conventional spraying), it is recommended to use BYK-425 together with BYK-420 (or BYK-D 420 or BYK-7420 ES), as the anti-settling properties are much more pronounced.

Recommended Levels
0.1-2 % additive (as supplied) based on the total formulation.

The above recommended levels can be used for orientation. Optimal levels are determined through a series of laboratory tests.

Incorporation and Processing Instructions
BYK-425 can be added to the formulation at any time during the production process; we recommend that it is post-added using a moderate shear force. If BYK-425 is to be used in pigment pastes to improve the dispersion conditions by increasing the millbase viscosity, it must be added directly to the millbase.

Due to its considerable rheological effectiveness, the additive may cause an immediate, very strong increase in viscosity and therefore make further processing more difficult. In this case, we recommend that it is prediluted. It can be diluted with just water (10 parts BYK-425 + 90 parts water) or also with a water/co-solvent mix using a standard coalescent (e.g. 20 parts BYK-425 + 70 parts water + 10 parts coalescent). BYK-425 is highly viscous at low temperatures; predilution can also be helpful under these conditions. The storage stability of the diluted solutions should be tested on a case-by-case basis.

Detergents, Cleaning and Care Products

Special Features and Benefits

The rheological effectiveness of BYK-425 is based on associative interactions with the surfactant micelles in the system, and enables a highly pronounced pseudoplastic flow behavior. Furthermore, the urea modification of the additive causes an increase in the rheological effect via hydrogen bonds. The resulting flow behavior is ideal, for example, for preventing particles (e.g. encapsulated fragrances) from settling, without negatively impacting the residual emptying of the container.

BYK-425 is VOC and APEO-free. The additive is liquid and therefore easy to handle. Its thickening effect is not dependent upon the pH value. The anti-settling properties are more pronounced at pH values above 4.5. The compatibility with surfactants, including cationic surfactants, is extremely good. The rheological effectiveness of the associative thickener depends on the respective system composition. The transparency of the application systems is preserved.

Recommended Use

BYK-425 is used as a thickener and anti-settling additive in aqueous systems.

Fabric softeners	■

■ especially recommended □ recommended

Recommended Levels

0.1-1.0 % 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

BYK-425 can be added to the formulation at any time during the production process; we recommend that it is post-added using a moderate shear force.

Due to its considerable rheological effectiveness, the additive can cause an immediate, very strong increase in viscosity and therefore make further processing more difficult. In this case, we recommend prediluting with water (10 parts BYK-425 to 90 parts water). BYK-425 is highly viscous at low temperatures; predilution can also be helpful under these conditions. The storage stability of the diluted solutions should be tested on a case-by-case basis.

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