BYK-431

Liquid rheology additive for solvent-borne coatings, adhesives, and sealants to improve anti-sagging and anti-settling properties.

Product Data

Composition
Solution of a high molecular weight, urea-modified, non-polar polyamide

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

Density (20 °C):	0.87 g/ml
Refractive index (20 °C):	1.43
Non-volatile matter:	25 %
Solvents:	Isobutanol/monophenyl glycol 6/1
Flash point:	30 °C

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
Separation or turbidity may occur during storage or transportation at temperatures below 10 °C. Its effectiveness is not influenced if it is incorporated under dispersion conditions at a temperature of at least 50 °C. If in doubt, we recommend testing the effectiveness.

Applications

Coatings, Adhesives and Sealants

Special Features and Benefits
With the aid of the pigments and fillers, the additive generates a three-dimensional network structure. The entanglement of the high molecular weight polymers is responsible for the development of the pseudoplastic flow behavior. The polarity of the system and the incorporation temperature influence the rheological effectiveness. The settling of the pigments and fillers is prevented and outstanding anti-sagging properties are produced due to the rapid rebound in viscosity after shearing. The additive has no "false body effect", no negative influence on the intercoat adhesion, and it is easy to process on account of its liquid form.

Recommended Levels

0.1-2 % additive (as supplied) based on the total formulation to improve anti-settling properties and 1-4 % to increase stability.

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

Incorporation and Processing Instructions

Optimum results are achieved if BYK-431 is incorporated in the millbase while dispersing the pigments/ fillers. The typical increase in temperature to 40-50 °C during this phase has a favorable effect; increased temperatures have no negative effect.

Subsequent incorporation (post-addition) under normal stirring conditions at a low shear rate is also possible, however, only if the binder system has suitable polarity and the additive is not subjected to temperatures below 10 °C at any time. If this temperature is not reached, we only recommend incorporation in the millbase of the pigmented/filled systems at a millbase temperature of at least 50 °C.

Special Note

The interaction with pigments and fillers can lead to a viscosity increase and a gloss reduction. This effect can be avoided by ensuring optimum stabilization of the solid particles with the use of wetting and dispersing additives.

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