RHEOLOGY ADDITIVE 2355

Description

Liquid rheology additive for medium-polarity solvent-borne and solvent-free coating systems as well as PVC plastisol and ambient-curing resin systems. The additive creates highly thixotropic flow behavior and consequently improves the anti-sagging and anti-settling properties. Post-addition is possible.

Product Data

1. Composition: Solution of modified urea

2. Typical Properties:

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

Appearance:	Yellow to brown liquid
Solid Content:	48-52%
Viscosity cps (25 °C):	200-700
Density (23 °C):	1.02-1.12
Solvents:	n-Methylpyrrolidon

Storage and Transportation

Moisture sensitive. Store dry. Slight turbidity of the material that occurs during storage has no influence on the rheological effectiveness. The specified storage stability upon dispatch applies when the product is handled correctly and stored in unopened original containers.

Applications

1. Coatings Industry

(1) Special Features and Benefits:
After being stirred into the coating system, the additive generates three-dimensional network structure. The resulting thixotropic flow

behavior is highly suited for preventing sedimentation and increasing the anti-sagging properties without impairing leveling.

(2) Recommended Levels:

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

0.5-2% to prevent sagging, depending on the polarity and solids in the formulation.

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

(3) Incorporation and Processing Instructions

The additive 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 mill-base 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.

(4) 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.

2. PVC Plastisols

(1) 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. The additive 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.

(2) 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.

(3) 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

3. Ambient curing resin systems

(1) 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, the additive 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.

(2) 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.

(3) 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.

(4) Special Note

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