



Rheovis 132, 112, 152

Associative Rheological Control Additives

General

Rheovis 132, Rheovis 112 and Rheovis 152 are derivatives of a family of highly effective rheological control additives for water-borne coating systems.

Chemical Nature

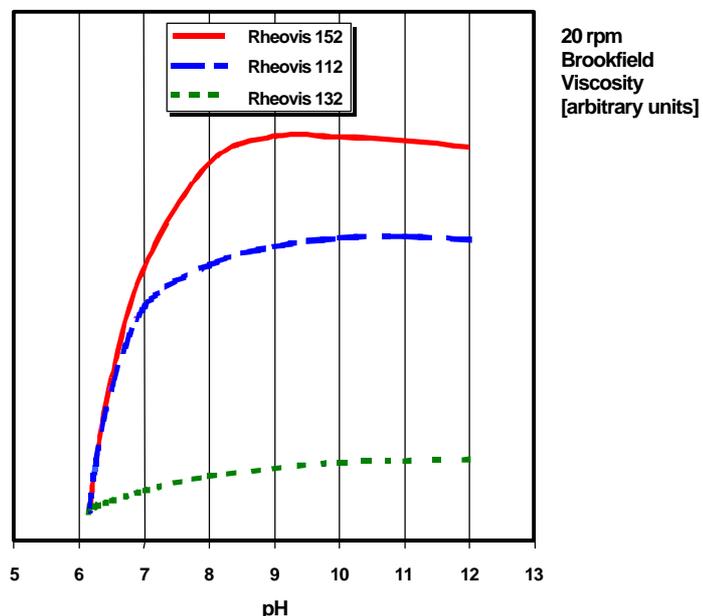
Rheovis 132, Rheovis 112 and Rheovis 152 belong to a family of products which are based on Ciba acrylic polymer technology with side groups designed to provide an associate thickening mechanism.

Physical Properties (typical values)

	Rheovis 132	Rheovis 112	Rheovis 152
<u>Appearance:</u>	white liquid (dispersion)	white liquid (dispersion)	white liquid (dispersion)
<u>pH:</u>	2-4	2-4	2-4
<u>Solid Content:</u>	40 %	40 %	40 %
<u>Viscosity at 25°C:</u> (Brookfield 20 rpm)	5 mPa-s	5 mPa-s	5 mPa-s
<u>Density at 20°C:</u>	1.05 g-cm ⁻²	1.05 g-cm ⁻²	1.05 g-cm ⁻²

Applications

Rheovis 132, Rheovis 112 and Rheovis 152 are ideal rheological control agents for a wide range of water-borne coatings. They are most effective over a pH range 7.5-10.





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The choice between Rheovis 132, Rheovis 112 and Rheovis 152 is dictated by the properties required.

Rheovis 132 has been designed to give a more Newtonian rheology. It provides optimum flow and levelling properties for semi-gloss and high-build coatings.

Rheovis 112 provides an improved thickening effect at low shear rates compared with Rheovis 132. It is recommended for use in matt and semi-gloss coatings.

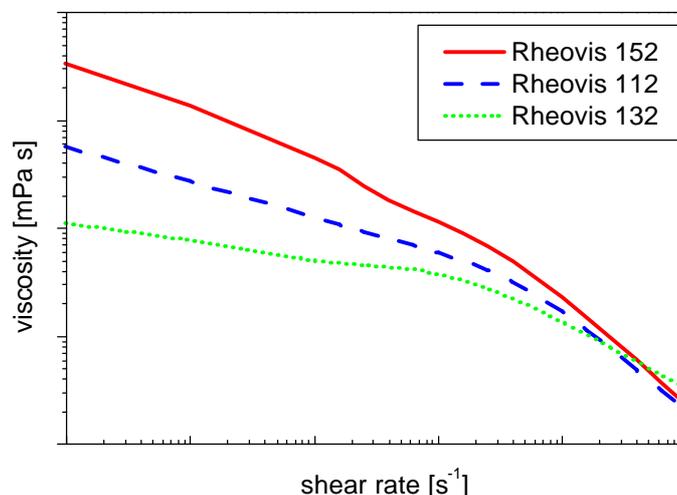
Rheovis 152 is the most efficient thickening additive leading to a more pseudoplastic system, for example spray applications. The practical use in conventional coatings might be limited to applications where flow and levelling are less critical.

In cases where an even higher degree of pseudoplastic behaviour are required then combinations with a complementary additive such as e.g. VISCALEX HV30 is recommended.

Typical rheological properties of a paint formulation equipped with the rheological control additives are given in the following graphs.

Rheological Profile

$$c(\text{Rheovis 132}) \gg c(\text{Rheovis 152}) \geq c(\text{Rheovis 112})$$





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The three grades Rheovis 132, Rheovis 112 and Rheovis 152 are chemically compatible with each other allowing formulation of blends in any ratio. In a given formulation the products may be combined as to reach the optimum overall performance.

Since Rheovis 132, Rheovis 112 and Rheovis 152 are synthetically derived products, they are less susceptible to microbiological attack than derivatives of cellulose. Consequently the paint formulator can substantially reduce the level of biocide leading to a broader area of application.

Incorporation of Rheovis 132, Rheovis 112 and Rheovis 152

Rheological control additives with associated thickening mechanism should preferably be added at the final stage of manufacturing of the ink or coating – as opposed to addition to the pigment grinding stage - since destabilisation can occur at high shear stress. The liquid form of Rheovis 132, Rheovis 112 and Rheovis 152 makes this post-addition comfortable. As a positive side effect, the post-addition offers the flexibility in viscosity adjustment from batch to batch.

After addition, the pH is adjusted with alkali, ammonia or other bases to achieve the full and stable viscosity. Use of volatile agents improves the water resistance properties of the dry film.

The pH of the system during manufacturing of the coating should always be kept higher than 7.5 to prevent precipitation and consequent destabilisation of the formulation. In certain cases it may be advisable to dilute and pre-gel with alkali before addition. Recommended dilution factor is 1 part of additive and 5 parts of water.

The amount of Rheovis 132, Rheovis 112 or Rheovis 152 required for optimum performance should be determined in trials covering a concentration range.

Recommended concentration :

**1.0 - 3.5% Rheovis 132, Rheovis 112 and Rheovis 152
(based on total formulation)**

Safety and Handling

Rheovis 132, Rheovis 112 and Rheovis 152 should be handled in accordance with good industrial practice. Detailed information is provided in the Safety Data Sheet.

Ciba Specialty Chemicals

Coating Effects
Polymer Specialties



Rheovis 132, 112, 152

Associative Rheological Control Additives

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