

## COATING RESINS

### TECHNICAL DATA

### FLOWTONE R

#### SALES SPECIFICATION

Particle size distribution: 99.5% <45µm  
(Malvern Mastersizer S laser particle size analyser) (CR 005)

#### OTHER PROPERTIES

Density at 25°C (77°F), g/cm <sup>3</sup> (CR 006)	1.01
Bulk density, g/cm <sup>3</sup> (CR 016)	0.4-0.6
Appearance	Off white powder
Capillary Melting Point (CR 003)	83-88°C (181-190°F)

#### PRODUCT INFORMATION

**FLOWTONE R** is a micronised hydrogenated castor oil rheology modifier for aliphatic solvent-based coatings. The performance benefits of this product are:

- 100% Active
- Imparts shear-thinning rheology with thixotropic viscosity recovery
- Very good sag resistance
- Very good anti-settle properties
- Good recoatability

This shear-thinning characteristic provides a very high viscosity under the low shear rates associated with sedimentation, and a low viscosity at the much higher application shear rates. The net result is excellent control of sedimentation combined with ease of application.

Immediately following application, where low shear conditions again predominate, the viscosity of the coating undergoes a time dependent recovery as the network re-establishes itself.

Activation at temperatures less than 30°C (86°F), greater than 55°C (131°F), or for too short a time will result in the formation of an inefficient interacting network. Too low a temperature and too short a time results in under-activation, while too high a temperature results in the network dissolving.

#### RECOMMENDED AMOUNTS

Anti-settling and sag resistance 0.2–1.5%

Partial dissolving of **FLOWTONE R** during coating manufacture manifests itself on cooling in the form of seeding. This is the result of dissolved material crystallising out in an uncontrolled manner.

#### INCORPORATION METHODS AND PROCESSING INSTRUCTIONS

**FLOWTONE R** is suited to coating systems based on aliphatic hydrocarbons. It is best incorporated during the pigment dispersion stage using a high-speed disperser operating at no greater than 55°C (131°F).

In order to obtain the maximum performance from **FLOWTONE R**, the dispersion process should be maintained for a period of 20–40 minutes at a temperature of 30–55°C (86–131°F). The use of high-speed dispersers is ideal in that they generate both the necessary shear and temperature required for full dispersion and activation.

The activation process involves the conversion of the **FLOWTONE R** particles into an interacting network of fibre-like particles. It is this network that gives rise to the shear-thinning rheology of the final coating.

As with all rheology modifiers based on hydrogenated castor oil, coatings prepared using **FLOWTONE R** may sometimes develop an excessively high structure, or false-body. This results when the hot coating is allowed to cool in the absence of stirring. This effect is minimised by cooling the coating, with stirring, to less than 40°C (104°F), or more preferably to less than 30°C (86°F), prior to discharge. Fortunately, this false-body phenomenon is a temporary effect and can be removed by the application of shear.

Due to the potential for false-body to occur, care must be taken to ensure that process and quality control tests are not carried out on affected samples. This is best achieved by pre-conditioning all samples by mechanical stirring for several minutes prior to testing.

## COATING RESINS

---

### TECHNICAL DATA

### FLOWTONE R

---

In addition to coatings applications, **FLOWTONE R** has also been used successfully in a multitude of other applications such as inks, adhesives, mastics, caulks, sealants, fillers, greases and lubricants.

Due to the multitude of formulations, processing methods and application conditions used in the field, we strongly recommend that all products containing **FLOWTONE R** be tested thoroughly to ensure their suitability for their intended end use. In particular, applications in poorly ventilated areas, on hot substrates, or by hot spray, may require additional attention.

#### PRECAUTIONS FOR STORAGE

**FLOWTONE R** should be stored in the original containers in a dry place at temperatures between 5°C (41°F) and 30°C (86°F). Avoid exposure to direct sunlight or frost. Under these conditions the product may be stored for up to 12 months.

#### PRECAUTIONS FOR USE

Please refer to the corresponding Safety Data Sheet.