

CRAYVALLAC[®] MT

Micronised Amide Modified Hydrogenated Castor Oil Rheology Modifier

Product Benefits

CRAYVALLAC[®] MT is a micronised amide modified hydrogenated castor oil rheology modifier for solvent-based and solvent-free coatings.

CRAYVALLAC[®] MT is suited to coating systems based on aliphatic hydrocarbons, aromatic hydrocarbons and aromatic hydrocarbon/alcohol blends. Compared to the most basic hydrogenated castor oil based rheology modifiers, CRAYVALLAC[®] MT is more tolerant to stronger solvents. The result of this is a lowered risk of problems such as seeding and false-body. The following table gives processing temperature guidelines for some solvent systems commonly used in coatings:

Aliphatic hydrocarbons	35 - 75°C (95 - 167°F)
Aromatic hydrocarbons	30 - 50°C (86 - 122°F)
Aromatic hydrocarbon/ Alcohol blends	30 - 50°C (86 - 122°F)
Solvent free epoxy coatings	40 - 60°C (104 - 140°F)

CRAYVALLAC[®] MT is best incorporated during the pigment dispersion stage using a high-speed disperser operating at a temperature within the recommended guidelines. In order to obtain the maximum performance from CRAYVALLAC[®] MT, the dispersion process should be maintained for a period of 20 – 40 minutes at the recommended temperature.

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 constitutes the conversion of the CRAYVALLAC[®] MT particles to an interacting network of fibre like particles. It is this network that gives rise to the final coating's shear thinning rheology. 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 coating's viscosity undergoes a time dependent recovery as the network re-establishes itself. This time dependence is known as thixotropy and enables the final coating to attain very good levelling.

Activation at too low a temperature, or too high a temperature, or for too short a time, will result in the formation of an inefficient interacting network. The use of too high a temperature will result in the network dissolving.

Partial dissolving of CRAYVALLAC[®] MT during coating manufacture manifests itself on cooling in the form of seeding. This is when dissolved material crystallises out in an uncontrolled manner.

As with all rheology modifiers based on hydrogenated castor oil, coatings prepared using CRAYVALLAC[®] MT may sometimes develop an excessively high structure, or false body.

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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) 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.

In addition to solvent-based coatings applications, CRAYVALLAC® MT has 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 CRAYVALLAC® MT be tested thoroughly to ensure their suitability for their intended end use. In particular, application in poorly ventilated areas, or on hot substrates, or by hot spray, may require additional attention.

Performance Benefits

- 100% Active
- Imparts shear thinning rheology with thixotropic viscosity
- Recovery
- Very good sag resistance
- Very good anti-settle properties
- Suitable for solvent-free coatings
- Very good recoatability

Sales Specifications

Particle size distribution:

(Malvern Mastersizer S laser particle size analyser) (CR 005)

DV.2 min. 4 µm

DV.8 max. 20 µm

Capillary Melting Point (CR 003) 130-140°C (266-284°F)

Other Properties

Density at 25°C (77°F), g/cm³ (CR 006) 1.02

Bulk density, g/cm³ (CR 016) 0.4-0.6

Appearance Off white powder

Recommendations for Use

Anti-Settling and Sag Resistance 0.2 - 1.5%

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Product Safety

Before handling the materials listed in this bulletin, read and understand the product MSDS (Material Safety Data Sheet) for additional information on personal protective equipment and for safety, health and environmental information. For environmental, safety and toxicological information, contact our Customer Service Department at 1-866-837-5532 to find an MSDS, or visit our web site: www.arkemacoatingresins.com

No chemical should be used as or in a food, drug, medical device, or cosmetic, or in a product or process in which it may contact a food, drug, medical device, or cosmetic until the user has determined the suitability and legality of the use. Since government regulations and use conditions are subject to change, it is the user's responsibility to determine that this information is appropriate and suitable under current, applicable laws and regulations.

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Storage and Handling

Follow procedures typically recommended for polymer dispersions. Use corrosion-resistant storage tanks and piping. Air-operated diaphragm pumps are preferred. Avoid temperature extremes. Do not freeze; store between 5° - 30°C. Under these conditions, the product may be stored for up to 4 years from production date.



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