

COATING RESINS

TECHNICAL DATA

CRAYVALLAC LA-100

SALES SPECIFICATION

Viscosity at 25°C (77°F), mPas at 10000s ⁻¹ (ISO 3219)	400-800
Colour, Gardner scale (ISO 4630)	< 7

OTHER PROPERTIES

Non-volatile content % @ 150°C (302°F) (ISO 3251)	52 ± 1
Flash point, °C (ISO 3679)	>70 (158°F)
Density at 25°C (77°F), g/cm ³ (ISO 2811)	1.11

PRODUCT INFORMATION

CRAYVALLAC LA-100 is a modified urea dissolved in N-methylpyrrolidone and is a new pourable liquid rheology modifier for post addition to solvent based coatings. The performance benefits of this product are:

- Post-addition pourable liquid
- Temperature independent activation
- Imparts shear thinning rheology with thixotropic viscosity recovery.
- Very good anti-settle and anti-sag properties
- Very good recoatability

CRAYVALLAC LA-100 contains chloride ions. If this product is stored in metal containers, or is used in coating intended for direct contact with metal substrates, additional testing is recommended to assess the potential of these ions for corrosion.

RECOMMENDED AMOUNTS

Anti-Settling	0.2 - 0.5 %
Sag Resistance	0.3 - 2.0 %

Note: Higher levels may be necessary depending on the coating system.

INCORPORATION METHODS AND PROCESSING INSTRUCTIONS

CRAYVALLAC LA-100 is a post-addition rheology modifier composed of a modified urea dissolved in N-methylpyrrolidone. When added to the final coating system, the N-methylpyrrolidone is diluted and the modified urea crystallises out as very fine fibres which build into a three-dimensional interacting network. It is this network that gives rise to the coating's shear thinning rheology and time dependent viscosity recovery.

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.

In order to obtain the maximum efficiency from **CRAYVALLAC LA-100**, it is necessary to optimise the crystallisation process and avoid the use of excessive shear. **CRAYVALLAC LA-100** should be added after the pigment dispersion and grind stage when the coating has been thinned to its approximate final high shear viscosity. Addition during the pigment grind stage, or under other conditions of high shear, will result in fracture of the crystals and the development of a poor interacting network. The result being poor anti-settle and anti-sag properties. The performance of **CRAYVALLAC LA-100**, or the quality of the crystallisation process, is very dependent on the Solvent-balance of the coating system, with Solvent-balance being the combined effect of the binder and solvents used.

The following are examples of coating systems with a good Solvent-balance:

Binder	Solvent System
Solid Epoxy	Xylene/Butanol 3:1
Short Oil Alkyd	Xylene/Butyl Glycol Ether 4:1
Acrylic 2K NISO	Xylene/Butyl Acetate/ Isobutanol/Ethyl 3-ethoxy propionate 4:4:1:1

CRAYVALLAC LA-100 should be added to the coating as a slow stream under low to medium shear conditions to ensure efficient dispersion. Although efficient stirring is required to ensure homogeneity, elevated temperatures are not required for activation. Addition to very polar and non-polar systems may result in incompatibility. This will reflect itself in poor anti-settle and sag resistance performance or seeding due to the

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crystals clumping together. Therefore it is essential to check compatibility, and if necessary optimise the Solvent-balance.

Due to the multitude of formulations, processing methods and application conditions used in the field, we strongly recommend that all products containing **CRAYVALLAC LA-100** 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.

PRECAUTIONS FOR STORAGE

CRAYVALLAC LA-100 is sensitive to moisture due to the hygroscopic nature of N-methylpyrrolidone. Therefore **CRAYVALLAC LA-100** containers must be tightly resealed after use to exclude moisture. The absorption of moisture will result in the premature crystallisation of the modified urea.

CRAYVALLAC LA-100 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 24 months from production date.

PRECAUTIONS FOR USE

Please refer to the corresponding Safety Data Sheet.