

COATING RESINS

TECHNICAL DATA

CRAYVALLAC PA4 X 20

SALES SPECIFICATION

Non-volatile content, % @ 150°C (302°F) 20 ± 1 (CR011)

OTHER PROPERTIES

Volatile	Xylene and Alcohol
Density at 25°C (77°F), g/cm ³ (CR006)	0.88
Appearance	Off white paste

PRODUCT INFORMATION

CRAYVALLAC PA4 X 20 is a pre-activated amide wax dispersed in a mixture of xylene and alcohols. It is a rheology modifier in paste form for post-addition to solvent-based industrial coatings and industrial wood finishes. The use of **CRAYVALLAC PA4 X 20** provides a very simple and direct means of introducing shear-thinning rheology with thixotropic viscosity recovery to coating formulations.

Solvent-based industrial coatings:

CRAYVALLAC PA4 X 20 is particularly recommended for clear varnishes and topcoats where a high gloss is important. The performance benefits of this product are:

- Suitable for post-addition
- Easy to incorporate
- Little effect on gloss
- Imparts shear-thinning rheology with thixotropic viscosity recovery
- Good sag resistance
- Good anti-settle properties
- Good recoatability

Industrial wood finishes:

CRAYVALLAC PA4 X 20 can be used in a variety of industrial wood finishes e.g. polyurethane (alkyd or acrylic based), nitrocellulose and acid curing. It is particularly suited to applications where a high degree of transparency is required e.g. clear varnishes and topcoats. The performance benefits of this product in industrial wood finishes are:

- Post-addition rheology modifier
- Minimal effect on gloss and transparency
- No pre-gel preparation required
- Imparts shear-thinning rheology with thixotropic viscosity recovery
- Excellent pigment and filler suspension during storage
- Coating formulations that are easy to apply yet exhibit good sag resistance combined with good flow and levelling

- Prevention of excessive substrate penetration with clear sealers and consequently improvement of filling power and coverage

In addition to these excellent performance benefits, **CRAYVALLAC PA4 X 20** is also a very cost efficient alternative to organoclays.

RECOMMENDED AMOUNTS

Anti-Settling	0.5 - 2.0%
Sag Resistance	2.0 - 5.0%
Substrate penetration control	3.0 – 6.0%

INCORPORATION METHODS AND PROCESSING INSTRUCTIONS

Crayvallac PA4X20 is a pre-activated amide paste and exists in the form of crystalline fibres. In a coating system, these fibres form an interacting network. It is this fibrous 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.

In order to obtain maximum efficiency from **CRAYVALLAC PA4 X 20**, it is necessary to disperse this product without destroying the crystalline fibres. It is therefore preferable to incorporate **CRAYVALLAC PA4 X 20** under low to medium shear conditions over as short a time period as possible.

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CRAYVALLAC PA4 X 20 can be incorporated either by post-addition or by a masterbatch method.

Post addition:

When using a high-speed disperser, CRAYVALLAC PA4 X 20 is added during the final stages of production, when the coating has been partially thinned to a viscosity of 600-800mPas (ICI cone and plate at 10000s⁻¹) and the peripheral speed reduced to approximately 4ms⁻¹. Too high a speed will result in destruction of the active fibres and reduced performance, whereas, too low a speed will result in extended incorporation times. In general, the time required for incorporation should be kept to a minimum in order to minimise damage due to overshear.

Master batch preparation:

A master batch can be prepared by dispersing CRAYVALLAC PA4 X 20 in a resin and/or solvent using low to medium shear rates. This dispersion can then be added to the finished coating.

Due to the multitude of formulations, processing methods and application conditions used in the field, we strongly recommend that all products containing CRAYVALLAC PA4 X 20 be tested thoroughly to ensure suitability for their intended end use. In particular, the suitability of this product for application by hot-spray, or curing in poorly ventilated areas may require additional validation. We do not recommend CRAYVALLAC PA4 X 20 for forced cure and stoving applications.

PRECAUTIONS FOR STORAGE

CRAYVALLAC PA4 X 20 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.