

Product Description and Approvals

Crystic® Gelcoat LS 31PA is a pre-accelerated Iso-NPG gelcoat formulated for brush application.

Crystic® Gelcoat LS 31PA has been developed to have exceptional water and weather resistance. The viscosity profile ensures even coverage with minimal drainage and low film porosity.

Crystic® Gelcoat LS 31PA is recommended for use in the marine, building and transport industries. It is also suitable for general moulding requirements. Crystic® Gelcoat LS 31PA is approved by Lloyd's Register of Shipping.

Features and Benefits

Features	Benefits
Iso-NPG base resin	Exceptional water and weathering resistance.
Easy to apply	Excellent surface finish
Low styrene content	Less exposure to the environment and operators

Brush Application

Do	Don't
Ensure the gelcoat has attained workshop temperature of 15°C - 25°C before use.	Stir the gelcoat with high shear mixers as this will temporarily break down the thixotropy leading to drainage.
Add 2% MEKP (50%) catalyst.	Exceed a wet film thickness of 600 microns as thick films encourage air retention.
Gently stir the gelcoat by hand or low shear stirrer.	Apply excessive thickness in corner areas as this can cause pre-release.
Use long brush strokes and even pressure to apply the gelcoat in an even film across the mould surface	Apply backing laminate before the gelcoat has reached an appropriate degree of cure.
Brush through the gelcoat until the recommended wet film thickness of 500-600 microns is reached.	Catalyse more gelcoat than can be applied before it starts to gel as this will lead to wastage and possible exothermic reaction.
Apply the first layer of laminate within 24 hours of the gelcoat.	Allow vapour to be retained in deep mould sections as this can cause slow curing.

Additives and Variants

The information contained in this technical data sheet applies to all pigmented versions.

A topcoat version of this material is available called LS 31PAX. The topcoat can be formulated by addition of 2% Crystic® Solution MW into the gelcoat.

Incorporation of additional material may affect the working, weathering or cured properties of the gelcoat. Please check with Scott Bader's Technical Service department before using the gelcoat outside of specified parameters.

Post-Curing

Satisfactory laminates for many applications can be made with Crystic® Gelcoat LS 31PA by curing at workshop temperature (15°C - 25°C). However, for optimum properties, laminates must be post-cured before being put into service. The moulding should be allowed to cure for 24 hours at workshop temperature and then oven-cured for 16 hours at 40°C.

Recommended Testing

It is recommended that customers test all gelcoats before use under their own conditions of application to ensure that the product meets requirements.

Typical Properties – Uncured

Property	Typical Value
Viscosity, 25°C 0.6s ⁻¹	400 poise
Viscosity, 25°C 4500s ⁻¹	15 poise
Specific Gravity at 25°C	1.2
Styrene Content	25%

Typical Properties – Cured

Property	Test Method	Typical Value
Barcol Hardness (Model GYZJ 934-1)*	EN59	41
Water Absorption 24 hrs at 23°C*	BS EN ISO 62 part 6.2	10 mg
Heat Deflection Temperature [†] (1.8MPa)	BS EN ISO 75-2 (1996)	65°C
Elongation at Break*	BS EN ISO 527-2	2.1%
Tensile Strength*	BS EN ISO 527-2	57 MPa

* Curing Schedule - 24hrs at 20°C, 3hrs at 80°C.

† Curing Schedule - 24hrs at 20°C, 5hrs at 80°C, 3hrs at 120°C.

Gel time & Backup time

Catalyst level and temperature will influence the gel time. The product only requires the addition of catalyst to start curing. We recommend the use of a 50% MEKP which should be added at 2% in the gelcoat.

Temperature	Gel time, 2% MEKP (50%)**	Backup time, 2% MEKP (50%)**
15°C	15 minutes	110 minutes
20°C	11 minutes	50 minutes
25°C	8 minutes	38 minutes
30°C	6 minutes	30 minutes

**Measured under laboratory conditions. Information should be used as a guide only.

Packaging and Storage

Crystic® Gelcoat LS 31PA is available in 25kg and 225kg containers.

Crystic® Gelcoat LS 31PA should be stored in its original container, under cover, and out of direct sunlight. These must be kept closed and airtight. It is recommended that the storage temperature should be less than 25°C and the product should not be frozen. Storing the product outside of these conditions may affect the properties of the product and reduce its shelf life. Ideally, containers should be opened only immediately prior to use. Material should be used within 5 months from the date of production.

Health and Safety

Read and understand separate Material Safety Data Sheet before using this product. Unsaturated polyester products release heat when they cure in bulk.

Eng - LS 31PA - Nov 2021

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