

CRYSTIC[®] Gelcoat 65PA

Isophthalic Polyester Gelcoat for General Purpose Use

Introduction

Crystic Gelcoat 65PA is a pre-accelerated gelcoat with excellent water and weather resistance. It has been formulated for brush application, but spray versions are available. It is available unpigmented, or in a wide range of colours and the information contained in this leaflet also applies to these pigmented versions. A non-accelerated material, Crystic Gelcoat 65, can also be supplied.

Applications

Crystic Gelcoat 65PA is designed for use in the marine and building industries. It is also suitable for all general moulding requirements.

Approvals

Crystic Gelcoat 65PA is approved by Lloyd's Register of Shipping for use in the construction of craft under their survey.


Formulation




Crystic Gelcoat 65PA should be allowed to attain workshop temperature (18°C-20°C) before use. Stir well by hand, or with a low shear mixer to avoid aeration, and then allow to stand to regain thixotropy. Crystic Gelcoat 65PA requires only the addition of catalyst to start the curing reaction. The recommended catalyst is Norox[®] KP9, and this should be added at 1-3% into the gelcoat. (Please consult our Technical Service Department if other catalysts are to be used). The catalyst should be thoroughly incorporated into the gelcoat, with a low shear mechanical stirrer where possible.

Pot Life

The temperature, and the amount of Catalyst M affect the geltime, and hence the pot life of Crystic Gelcoat 65PA. Table 1 shows this relationship.

Table 1: Geltime in minutes of Crystic Gelcoat 65PA at varying temperatures, with 2% Catalyst M.

 = Combination not recommended.

Catalyst type		Norox KP9		
		1%	2%	3%
Catalyst addition		Geltime in minutes		
Temperature	15°C		15	11
	25°C	26	10	
	35°C	12	5	

The gelcoat, mould and workshop should all be at or above, 15°C before curing is carried out. Scott Bader (Pty) Ltd. will not be liable for problems caused by use at lower temperatures than recommended.

N.B. Peroxide catalysts are highly reactive and may decompose with explosive violence, or cause fires, if they come into contact with flammable materials, metals or accelerators. For this reason they must never be stored in metal containers or be mixed directly with accelerators.

Application

For normal moulding, the application of Crystic Gelcoat 65PA should be controlled to 0.4-0.5 mm (0.015-0.020 inch) wet film thickness. As a guide, approximately 450-600 g/m² of gelcoat mixture (depending on pigment) will give the required thickness when evenly applied.

Do

- Use clean brushes and containers.
- Ensure that the gelcoat is well stirred in its container before measuring quantities for use.
- Measure catalyst carefully and thoroughly stir it into the gelcoat.
- Ensure that the mould temperature is close to that of the gelcoat. Even if the gelcoat is kept warm in its container, applying it to a cold mould will absorb all the heat and cause it to cure slowly. Applying cold gelcoat with an appropriate catalyst level to a warm mould will result in too fast a film geltime and possibly cause pinholes.
- Brush the gelcoat onto the mould using even, long, vigorous strokes, dipping the brush into the gelcoat often.
- Ensure that the gelcoat is well sheared by the brush when applying it. The bristles must touch the mould surface.
- Touch up thin patches by adding extra gelcoat, not by brushing over from the gelcoat nearby.

Don't

- Use brushes contaminated with cleaning solvents or moisture.
- Brush the gelcoat out too far – it is designed to be applied at 0.5mm thickness with the proper brush technique.
- Apply too thick a layer – this can cause pre-release, and runs can cause colour streaking.
- Mix fillers into gelcoat.
- Thin with styrene, acetone or thinners.
- Allow puddles and blobs of gelcoat to accumulate on the mould, or pour it onto the mould and use this as a reservoir for brushing. This may cause pinholes and colour streaking.
- Begin laminating too soon. The back-up time will vary with temperature, but a good test is to touch the back of the gelcoat with a thumb. It will feel tacky but none should transfer to the skin.

Additives

Crystic Gelcoat 65PA is supplied in a wide range of colours. This eliminates the potential for mixing errors with small quantities of pigment paste. However, it is also supplied in natural form, and pigment pastes may be added to create the desired colour. Note: The addition of fillers or pigments may adversely affect the water and weather resistance of the cured gelcoat. Also, pigment pastes not supplied by Scott Bader (Pty) Ltd may react unpredictably with the gelcoat, leading to pigment separation and flooding problems, or insufficient pigment strength development. Crystic Gelcoat 65PA can be used as a topcoat provided that 2% Crystic Solution W010 is added to overcome the normal tackiness.

Post Curing

Satisfactory laminates for many applications can be made with Crystic Gelcoat 65PA by curing at workshop temperature (20°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 20°C, and then be oven-cured for 3 hours at 80°C.

Typical Properties

The following tables give typical properties of Crystic Gelcoat 65PA when tested in accordance with BS2782.

Table 2: Typical properties of liquid Crystic Gelcoat 65PA.

Property	Units	Nominal value
Appearance		mauvish, cloudy
Viscosity @ 25°C	Cps	5600
Specific Gravity @ 25° C		1.09
Volatile Content	%	35
Geltime at 25°C using 2% Norox KP9	minutes	10
Stability in the dark @ 20°C	months	3

Table 3: Typical properties of Crystic Gelcoat 65PA Fully cured* gelcoat (unfilled casting)

Property	Units	Nominal value
Barcol Hardness (Model GYZJ 934-1)		42
Water Absorption 24hrs @23° C	mg	18
Deflection Temperature under load(1.80MPa)†	°C	75
Elongation at Break	%	3.0
Tensile Strength	MPa	75
Tensile Modulus	MPa	3500

* Curing schedule - 24 hrs @ 20°C, 3 hrs @ 80°C

† Curing schedule - 24 hrs @ 20°C, 5 hrs @ 80° C, 3 hrs @ 120° C

Storage

Crystic Gelcoat 65PA should be stored in the dark in suitable, closed containers. It is recommended that the storage temperature should be less than 20°C where practical, but should not exceed 30°C. Ideally, containers should be opened only immediately prior to use. Where they have to be stored outside, it is recommended that drums be kept in a horizontal position to avoid the possible ingress of water. Wherever possible, containers should be stored under cover.

Packing

Crystic Gelcoat 65PA is supplied in 25kg and 225kg containers.

Health and Safety

Please see the applicable Material Safety Data Sheets, depending on the curing system used.

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Before you use this information, kindly verify that this data sheet is the latest version.

All information is given in good faith but without warranty. We cannot accept responsibility or liability for any damage, loss or patent infringement resulting from the use of this information.

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