CRYSTIC LS 97PA

Low Styrene Content Isophthalic Gelcoat for Spray Application

Introduction

Crystic LS 97PA is a high performance isophthalic gelcoat. It is filled, pre-accelerated and formulated for spray application. This product is available in a wide range of colours and the information contained in this datasheet also applies to pigmented versions.

The Scott Bader Technical Service department is able to provide information and advice relating to the use of gelcoats in a wide range of markets and applications.

Applications

Crystic LS 97PA is recommended for use in marine (only use white gelcoat below the waterline), land transport and building applications. It is also suitable for general moulding requirements.

Features & Benefits

Crystic LS 97PA has been developed to ensure excellent intrinsic weathering properties. The viscosity profile ensures even coverage with minimal drainage and low film porosity. Crystic LS 97PA typically contains 27% - 29% styrene when formulated as a pigmented gelcoat, helping to minimise styrene emissions in the workplace. The robust formulation ensures the gelcoat is suitable for use in a wide range of application conditions.

Approvals

Crystic LS 97PA is approved by Lloyd's Register of Shipping for construction of craft under their survey. The gelcoat base has also been tested in accordance with BS EN ISO 12215-1:2000.

Product Characteristics

The product should be conditioned at workshop temperature (18°C – 25°C) and mixed before use. Crystic LS 97PA requires the addition of an 'initiator' to start the curing reaction. Use Scott Bader Butanox M50 (or other equivalent catalyst) and incorporate this into the gelcoat at 1–2% v/w. Unsaturated polyester products release heat when they cure in bulk. If manually adding catalyst to the product prior to spraying, do not prepare more material than is required to complete the job and spray within 3 minutes. Ensure that all equipment is thoroughly cleaned after use.

Do

- Gently stir the gelcoat before use, by hand or with a low shear mixer.
- Ensure workshop temperature is between 18 and 25°C.
- Spray at the minimum pressure to achieve an acceptable spray pattern.
- Apply the gelcoat in thin even passes, building up the film thickness to 0.5- 0.6 mm wet.
- Ensure adequate mould ventilation.

Don't

- Exceed a wet film thickness exceeding 0.8 mm or drainage may occur.
- Allow vapour to be retained in deep mould sections, this can slow cure.
- Apply excessive gelcoat in corners. This can cause pre-release.

Additives

The addition of pigment pastes, or other additives, may adversely affect the spraying properties or weathering resistance of the cured gelcoat. It is recommended that the gelcoat is ordered from Scott Bader in the colour required.

Recommended Testing
It is recommended that customers test all pigmented gelcoats before use under their own conditions of application to ensure the required surface finish is achieved.

Post Curing
Laminates take time to cure fully and develop mechanical properties at room temperature. This process can be accelerated by post-curing at elevated temperature. Please seek advice for your specific needs. Optimum properties can normally be obtained by allowing curing for 24 hours at ambient temperature followed by 3 hours at 80°C.

Typical Properties
The following table gives typical liquid properties of Crystic LS 97PA when tested in accordance with Scott Bader test methods.

Properties for 'White 337' Gelcoat	**Method**	**Typical Value**
Viscosity, 25°C $0.6s^{-1}$	3.41	250 poise
Viscosity, 25°C $4500s^{-1}$	3.6	2.4 poise
Specific Gravity at 25°C (white gelcoat)	8.01	1.2
Stability at 20°C	-	3 months
Geltime at 25°C, 2% Butanox M50 (or other equivalent catalyst)	5.25	7 minutes

Typical Properties
The following are typical mechanical properties obtained from the gelcoat base resin following a post cure of 24hrs at 50°C and tested as specified in BS EN ISO12215-1: 2000.

Mechanical properties	**Method**	**Value (2s.f.)**
Barcol Hardness (Model 934-1)	EN59	36
Heat Deflection Temperature	BS EN ISO 75-2 (1996)	63°C
Water Absorption 24 hours at 23°C	BS EN ISO 62 part 6.2	17 mg
Tensile Strength	BS EN ISO 527- 2	74 MPa
Elongation at Break	BS EN ISO 527- 2	4.7 %
Flexural Strength	BS EN ISO 178	110 MPa
Flexural Modulus	BS EN ISO 178	2800 MPa

Storage
Crystic LS 97PA should be stored in its original container and out of direct sunlight. These must be kept closed and airtight. 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

Packaging
Crystic LS 97PA is supplied in 25kg and 225kg containers.

Health & Safety
Please refer to Material Safety Data Sheet.