

CRYSTIC[®] Envirotec LS97PA

Low Styrene Content Gelcoat for Spray Application

Introduction

Crystic Envirotec LS97PA is a high performance gelcoat. It is pre-accelerated and formulated for spray application with excellent air release. 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 Envirotec LS97PA 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 and Benefits

Crystic Envirotec LS97PA has been developed to ensure excellent intrinsic weathering properties. The viscosity profile ensures even coverage with minimal drainage and low film porosity. Crystic Envirotec LS97PA 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 Envirotec LS97PA 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 Envirotec LS97PA requires the addition of a catalyst to start the curing reaction. Using Norox[®] KP9 catalyst at 1-2% v/w will initiate curing. 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.

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.

Spray Applications

Do

- Gently stir the gelcoat before use by hand or low shear mixer.
- Ensure the gelcoat has attained workshop temperature of 18°C-20°C before use. (Temperatures below 18°C will require higher pressure to achieve an acceptable spray pattern and this will encourage porosity).
- Spray at the minimum practical pressure whilst maintaining an acceptable spray pattern and full fan width.
- Apply a mist coat and then build up thickness in long, even passes of 0.125mm (0.005 inch) until the recommended wet film thickness of 0.5-0.625mm (0.020-0.025 inch) is reached. This will minimise porosity and colour defects.

Don't

- Stir the gelcoat with high shear mixers as this will temporarily break down the thixotropy leading to drainage.
- Exceed a wet film thickness of 0.625mm (0.025 inch) as thick films encourage air retention.
- Apply excessive thickness in corner areas as 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.

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 to cure for 24 hours at ambient temperature followed by 3 hours at 80°C.

Properties:

Typical Properties

The following tables give typical properties of Crystic Envirotec LS97PA when tested in accordance with Scott Bader test methods.

Table 1: Typical properties of liquid Crystic Envirotec LS97PA (white gelcoat).

Property	Units	Nominal value
Appearance		White/Natural/Coloured
Viscosity at 25°C, Brookfield RVT sp.5 @20 rpm	Centipoise	4000
Thixotropic index	Ratio	4.5
Specific Gravity at 25°C		1.1-1.3 depending on colour
Stability in the dark at 20°C	months	3
Gel time at 25°C using 2% Norox KP9 catalyst	minutes	10

Table 2: Typical properties of Crystic Envirotec LS97PA gelcoat base resin following a postcure of 24hrs @ 50°C and tested as specified in BS EN ISO12215-1:2000.

Property	Units	Nominal value
Barcol Hardness (Model GYZJ 934-1)		36
Water Absorption 4 weeks at 23°C	mg	90
Deflection Temperature under load (1.80 MPa)	°C	63
Elongation at Break	%	4.7
Tensile Strength	MPa	74
Flexural Strength	MPa	110
Flexural Modulus	GPa	2800

Storage

Crystic Envirotec LS97PA 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.

Packaging

Crystic Envirotec LS97PA is supplied in 25kg and 225kg containers.



Health and Safety

Please see separate Material Safety Data Sheet.

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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.

SCOTT BADER COMPANY LIMITED

Scott Bader (Pty) Ltd
Reg. No. 93/00466/07
1 Lubex Road,
Hammarisdale
P.O. Box 1539, Hillcrest,
3650. South Africa
Tel: +27 (0) 31 736 8500
Fax: +27 (0) 31 736 8511

Gauteng
Broadacres Business
Centre
Cnr Cedar Rd and 3rd
Ave
Broadacres, Sandton
Tel: (011) 064 5673

KwaZulu Natal
1 Lubex Road,
Hammarisdale
Tel: (031) 736 8500

Eastern Cape
Freightpak Building
Chevrolet St
Markman Industrial
Port Elizabeth
Tel: (041) 409 783

Western Cape
Unit 4B
Tyger Lake
Niagara Way
Tyger Valley
Cape Town
Tel: (021) 914 6011

