Crystic® Permabright (S)

Low Colour Change Polyester Gelcoat for Spray Application

Introduction
Crystic Permabright (S) is a high performance polyester spray gelcoat. It is a pre-accelerated and has been formulated to offer exceptionally low colour change and excellent water resistance. It is only available in white, off-white and light cream shades and the information contained in this technical datasheet also applies to pigmented versions.

Applications
Crystic Permabright (S) 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 Permabright (S) has been developed to ensure excellent intrinsic weathering properties. The viscosity profile ensures even coverage with minimal drainage and low film porosity. The robust formulation ensures the gelcoat is suitable for use in a wide range of application conditions.

Product Characteristics
The gelcoat, mould and workshop should all be at, or above, 15 ºC before curing is carried out.

Crystic Permabright (S) should be allowed to attain workshop temperature (18°C-20°C) before use. Stir well by hand or with a low shear stirrer to avoid aeration and then allow to stand to regain thixotropy. Crystic Permabright (S) requires only the addition of catalyst to start the curing reaction. The recommended catalyst is Butanox M50 (or other equivalent catalyst) which should be added at 2% 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.

Spray Application

Do
• Gently stir the gelcoat before use by hand or low shear stirrer.
• Ensure the gelcoat has attained workshop temperature of 18°C-25°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.

Typical Properties
The following tables give typical properties of Crystic Permabright (S) when tested in accordance with SB, BS, BS EN or BS EN ISO test methods.

Properties for Crystic Permabright (S) White 337	Method	Typical Result
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	-	1.2
Stability at 20°C	-	3 months
Geltime 25°C 2% Butanox M50 (or other equivalent catalyst)	5.25	6 – 10 minutes

Typical Properties
The following are typical mechanical properties obtained from the gelcoat base resin following a post cure of 16hrs at 40°C :

Mechanical properties	Method	Value
Barcol Hardness (Model 934-1)	EN59	48
Heat Deflection Temperature	BS EN ISO 75-2 (1996)	68°C
Water Absorption 24 hours at 23°C	BS EN ISO 62 part 6.2	6.3mg
Tensile Strength	BS EN ISO 527- 2	61 MPa
Elongation at Break	BS EN ISO 527- 2	2.7 %
Flexural Strength	BS EN ISO 178	97 MPa
Flexural Modulus	BS EN ISO 178	3490 MPa

Post-Curing
Satisfactory laminates for many applications can be made with Crystic Permabright (S) 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.

Storage
Crystic Permabright (S) should be stored in its original container and out of direct sunlight. 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 Permabright (S) is supplied in 25kg and 225kg containers.

Health and Safety
Please see separate Material Safety Data Sheet.

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