

# Crystic Ecogel® S3 PA

Low Styrene Content Iso-NPG Gelcoat for Marine and Demanding Applications



## Product Description

Crystic Ecogel® S3PA is a high performance isophthalic neopentyl glycol gelcoat. This gelcoat is pre-accelerated and formulated for spray application.

Crystic Ecogel® S3PA is a low VOC product.

Crystic Ecogel® S3PA has been specially designed for the production of high quality parts in the marine industry. This formulation offers an excellent hydrolysis resistance combined with a high gloss and gloss retention.

## Features and Benefits

Features	Benefits
Isophthalic neopentyl base resin	Excellent water / blistering resistance
High elongation	Good impact resistance
Special monomers	Only 24 % styrene, 28 % VOC
Easy to apply	Excellent surface finish
Low styrene content	Less exposure to the environment and workers

## Spray set up

Application temperature	15 - 25°C
Catalyst	2% Butanox® M-50 or equivalent catalyst.
Nozzle airless gun	423 - 535
Pressure	3 to 4.5 bars
Distance to mould	50 cm minimum
Wet Film Thickness	600 - 800 microns

## Spray 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% Butanox® M-50 or equivalent catalyst.	Exceed a wet film thickness of 800 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.
Spray at the minimum practical pressure whilst maintaining an acceptable spray pattern and full fan width.	Apply backing laminate before the gelcoat has reached an appropriate degree of cure.
Apply a mist coat and then build up thickness in long, even passes of 100 - 150 microns until the recommended wet film thickness of 600 – 800 microns is reached.	Catalyse more gelcoat than can be applied before it starts to gel.
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.

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 Ecogel® S3PA 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 at 23°C, Brookfield Sp5, 2.5 Rpm	350 – 450 dPa.s
Thixotropic index 2.5 Rpm / 20 Rpm	5.80 – 6.50
Specific Gravity at 25°C	1.3
Styrene Content	24%

#### Typical Properties – Cured

Property	Test Method	Typical Value
Barcol Hardness (Model GYZJ 934-1)*	EN59	40
Water Absorption 24 hrs at 23°C*	BS EN ISO 62 part 6.2	18 mg
Heat Deflection Temperature <sup>†</sup> (1.8MPa)	BS EN ISO 75-2 (1996)	56°C
Elongation at Break*	BS EN ISO 527-2	2-4%
Tensile Strength*	BS EN ISO 527-2	68 MPa
Tensile Modulus*	BS EN ISO 527-2	3100 MPa
Flexural Strength*	BS EN ISO 178	120 MPa
Flexural Modulus*	BS EN ISO 178	3400 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 (type Butanox® M-50) which should be added at 2% in the gelcoat.

Temperature	Gel time (2% MEKP 50%)**	Backup time (2% MEKP 50%)**
20°C	13 minutes	60 minutes
23°C	10 minutes	50 minutes
30°C	8 minutes	40 minutes

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

Crystic Ecogel uses innovative monomers. When the back up time is reached, the glass reinforcement can be laid down even if the gelcoat seems still tacky. This tackiness is part of the chemical formulation of the gelcoat.

#### Packaging and Storage

Crystic Ecogel® S3PA is available in 25kg and 225kg containers.

Crystic Ecogel® S3PA 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 - S3 PA - May 2023**

All information on this data sheet is based on laboratory testing and is not intended for design purposes. Scott Bader makes no representations or warranties of any kind concerning this data. Due to variance of storage, handling and application of these materials, Scott Bader cannot accept liability for results obtained. The manufacture of materials is the subject of granted patents and patent applications; freedom to operate patented processes is not implied by this publication.

#### SCOTT BADER COMPANY LIMITED

Wollaston, Wellingborough, Northamptonshire, NN29 7RL

Telephone: +44 (0) 1933 663100

Facsimile: +44 (0) 1933 666623

[www.scottbader.com](http://www.scottbader.com)