

# CRYSTIC<sup>®</sup> 500PA

## General Purpose Unsaturated Polyester Resin

### Introduction

Crystic<sup>®</sup> 500PA is a pre-accelerated, orthophthalic polyester resin. It is a general purpose resin and has been specifically designed for non-critical and industrial applications. It has been formulated to reduce styrene emissions in the workshop compared to conventional polyesters. It is not suitable for boat construction, chemical resistance or mouldings in contact with food products. Crystic<sup>®</sup> 500SPA is a variant of Crystic<sup>®</sup> 500PA designed to give faster cure. Both variants are also available in white as Crystic<sup>®</sup> 500PA White 340 and Crystic<sup>®</sup> 500SPA White 340. This technical datasheet also applies to the white versions.

### Product Characteristics

#### Formulation

Crystic<sup>®</sup> 500PA 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, then allow to stand to regain thixotropy. Crystic<sup>®</sup> 500PA requires only the addition of catalyst to start the curing reaction. The recommended catalyst is Butanox M50 (or equivalent), which should be added at 1.5 % into the resin. (Please consult our Technical Service Department if other catalysts are to be used). The catalyst should be thoroughly incorporated into the resin with a low shear mechanical stirrer where possible.

#### Pot Life

Temperature	Pot life in minutes	
	Crystic <sup>®</sup> 500PA	Crystic <sup>®</sup> 500SPA
25°C	25	20

The resin, mould and workshop should be at, or above, 15°C before curing is carried out.

#### Application

Crystic<sup>®</sup> 500PA is designed for hand laminating and should be used with chopped strand mats or conventional woven rovings. Laminates left to cure or with delayed lamination need abrasion and cleaning before subsequent layers are to be added.

#### Additives

The addition of filler or pigments can affect the hardening rates of the resin. Users should evaluate the effect of any potential additives before use.

#### Post Curing

Satisfactory laminates for most non-critical applications can be made with Crystic<sup>®</sup> 500PA by curing at workshop temperature (20°C).

## Typical Properties

The following tables give the minimum expected properties of Crystic<sup>®</sup> 500PA when tested in accordance with BS 2782.

Property		Liquid resin	
		Crystic <sup>®</sup> 500PA	Crystic <sup>®</sup> 500SPA
Appearance		Pink bit free	Pink bit free
Viscosity at 25°C		Thixotropic	Thixotropic
Specific gravity at 25°C		1.12	1.12
Volatile content	%	40	40
Stability in the dark at 20°C	months	3	3
Geltime at 25°C using 1.5% Butanox M50 (or equivalent)	minutes	25	20

Property		Fully cured* resin (unfilled casting)
Barcol hardness (Model GYZJ 934-1)		46
Deflection temperature under load† (1.80 MPa)	°C	70
Tensile strength	MPa	65.7
Tensile modulus	MPa	3700
Elongation at break	%	2.4

\* Curing schedule – 24hrs at 20°C, 3 hrs at 80°C

† Curing schedule – 24hrs at 20 °C, 5 hrs at 80°C, 3hrs at 120°C

## Storage

Crystic<sup>®</sup> 500PA 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 containers are kept in a horizontal position to avoid the possible ingress of water.

## Packaging

Crystic<sup>®</sup> 500PA is supplied in 25 kg and 200 kg containers.

## Health and Safety

Please see separate Material Safety Data Sheet.

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## 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)