

# CRYSTIC<sup>®</sup> 782PA

## Heat and Chemical Resistant Polyester Resin for Resin Transfer Moulding

### Introduction

Crystic 782PA is an orthophthalic polyester resin, designed for use in RTM. A non-accelerated version of this resin is available, as Crystic 782.

### Applications

Crystic 782PA was developed primarily as an RTM resin, but its properties make it suitable for use in other, similar techniques. It is recommended for use in applications throughout the chemical processing industry.

### Features and Benefits

Crystic 782PA is a versatile resin, ideally suited to environments where heat and chemical resistance are both required.

### Formulation

Crystic 782PA should be allowed to attain workshop temperature (18°C - 20°C) before use. It requires only the addition of a catalyst to start the curing reaction. The recommended catalyst is Trigonox 44B (acetyl acetone peroxide). Trigonox 524, an acetyl acetone peroxide/tert-butyl peroxybenzoate mixture developed specifically to obtain more efficient cure in RTM, can also be used. The amount of catalyst needed will depend on the required geltime, and the temperature of the workshop and mould, and be approximately determined from the table below.

### Pot Life

Temperature (°C)	Pot Life in Minutes Using Trigonox 44B		
	1.0	1.5	2.0
20	-	-	19
25	-	-	12
40	5	4	3
50	-	-	2

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

### Additives

The addition of pigment pastes, fillers or other additives can adversely affect the resin transfer moulding process and properties of the cured laminate. Users should consult Scott Bader's Technical Service Department before making any such additions.

### Post Curing

For optimum properties, laminates made using Crystic 782PA should be post cured before being put into service. The laminate should be allowed to cure for 24 hours at 20°C, and then be oven cured for a minimum of 3 hours at 80°C

## Typical Properties

The following tables give typical properties of Crystic 782PA when tested in accordance with the appropriate BS or BS EN ISO test method.

Property		Liquid Resin
Appearance		Hazy yellow/green
Viscosity at 25°C	Poise	3.0
Specific Gravity at 25°C		1.10
Volatile content	%	41
Stability at 20°C	Months	3
Geltime at 25°C using 2% Trigonox 44B	Minutes	12

  

Property		Fully Cured* Resin (Unfilled Casting)
Barcol hardness (Model GYZJ 934-1)		45
Deflection temperature under load† (1.80MPa)	°C	125
Water absorption 24hrs at 23°C	mg	32
Tensile strength	MPa†	50
Tensile modulus	MPa†	3584
Elongation at break	%	1.5
Specific Gravity at 20°C		1.20

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

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

Property		Laminate**
Glass content	%	26
Tensile strength	MPa	67
Tensile modulus	MPa	6540
Elongation at break	%	1.8
Flexural strength	MPa	194
Flexural modulus	MPa	7050

\*\* Made with 1 layer Rovicore 600 D3 600  
Curing schedule – 24hrs at 20°C, 16hrs at 40°C

## Storage

Crystic 782PA 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.

## Packaging

Crystic 782PA is available in 25kg, 200kg and 1 tonne containers. Bulk supplies can be delivered by road tanker.

## Health and Safety

Please see separate Material Safety Data Sheet.

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