

CRYSTIC® 785PA and CRYSTIC® 785PALR

DCPD Based Polyester Resin for Resin Transfer Moulding

Introduction

Crystic 785PA is a pre-accelerated, DCPD based, polyester resin designed for use in RTM.

Applications

Crystic 785PA was developed primarily as an RTM resin, but its properties make it suitable for use in other similar closed moulding techniques. Crystic 785PA is recommended for the manufacture of mouldings for land transport and general industrial applications. Where longer gel times are required, Crystic 785PALR should be used.

Features and Benefits

Crystic 785PA has a lower styrene content than conventional RTM resins. Its use can significantly reduce the occurrence of print through, to produce mouldings with an enhanced surface finish.

Formulation

Crystic 785PA must be thoroughly stirred and allowed to attain workshop temperature (18°C - 20°C) before use. It needs only the addition of a catalyst to start the curing reaction. The recommended catalyst is Trigonox 44B which should be added at 1% to 2% into the resin. For Crystic 785PA LR the recommended catalyst is Butanox M50. The approximate gel times of Crystic 785PA and Crystic 785PA LR can be determined from the table below.

Pot Life

Temperature	Pot Life in Minutes Using Trigonox 44B					
	Crystic 785PA			Crystic 785PALR		
	1.0% 44B	1.5% 44B	2.0% 44B	1.0% 44B	1.5% 44B	2.0% 44B
15°C	37	28	24	150	86	63
20°C	22	17	14	107	61	46
25°C	15	12	10	66	39	30

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

Additives

Crystic 785PA can be supplied in a range of colours. This eliminates the potential for mixing errors with small quantities of pigment paste. The addition of any pigment, extra fillers or other additives can adversely affect the resin transfer moulding process and the properties of the cured laminate. Users should consult Scott Bader's Technical Service Department before making any such additions.

Typical Properties

The following tables give typical properties of Crystic 785PA when tested in accordance with the appropriate SB, BS, BS EN or BS EN ISO test methods.

Property		Liquid Resin
Appearance		Mauvish, pink
Viscosity at 25°C	poise	2.2
Specific Gravity at 25°C		1.10
Volatile Content	%	34
Stability at 25°C	months	3
Geltime at 20°C using 2% Trigonox 44B	minutes	16.5
Property		Fully Cured* Resin (Filled Casting)
Barcol Hardness (Model GYZJ 934-1)		40
Deflection Temperature under load† (1.80MPa)	°C	56
Water Absorption 24hrs at 23°C	mg	23
Tensile Strength	MPa	49
Tensile Modulus	MPa	2900
Elongation at Break	%	1.82

* Curing Schedule—24hrs at 20°C, 3 hrs at 80°C

†Curing Schedule —24 hrs at 20°C, 5 hrs at 80°C, 3 hrs at 120°C

Property		Laminate**
Glass Content	%	23.1
Tensile Strength	MPa	72.5
Tensile Modulus	MPa	4600
Elongation at Break	%	1.9
Flexural Strength	MPa	231
Flexural Modulus	MPa	7100

** Made with 1 layer Rovicore 450 D3 450

Curing Schedule - 24 hrs at 20°C, 16 hrs at 40°C

Storage

Crystic 785PA and Crystic 785PALR 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 785PA and Crystic 785PALR are supplied in 225kg steel containers.

Health & Safety

Please see separate Material Safety Data Sheet.

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