

CRYSTIC[®] 1355PA

Low Cost Class 1 Flame Retardant Polyester Resin

Introduction

Crystic 1355PA is a pre-accelerated, filled, fire retardant unsaturated polyester resin which has been designed for contact moulding applications. It has been formulated as an inexpensive resin and wets out the reinforcement rapidly. Crystic 1355PA can be supplied in a restricted range of colours and the information contained in this leaflet also applies to these pigmented versions.

Approvals

Crystic 1355PA can achieve a Class 1 rating to BS476 part 7:1987.

Formulation

Crystic 1355PA 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, and then allow to stand to regain thixotropy. Crystic 1355PA requires only the addition of a catalyst to start the curing reaction. The recommended catalyst Norox[®] KP9, which should be added at 1% into the resin. Norox[®] MEKP-925H will increase the pot life. The catalyst should be thoroughly incorporated into the resin, with a low shear mechanical stirrer where possible.

Crystic 1355PA is formulated for room temperature curing applications. It requires only addition of the correct amount of catalyst to start the curing reaction. The recommended formulation is given in Table 1 below:

Table 1

Component	Parts by weight
Crystic 1355PA	100
Norox KP9 or Norox MEKP-925H	1.0-3.0

The temperature and the amount of Norox KP9 or Norox MEKP-925H catalysts control the gel time of the resin formulation and can be approximately determined from Table 2.

Table 2: Gelttime in minutes for Crystic 1355PA.

■ = combination not recommended.

Catalyst type	Norox KP9				Norox MEKP-925H			
	Catalyst addition	2.5%	2.0%	1.5%	1.0%	2.0%	1.5%	1.0%
Temperature	40°C	■	■	■	■	■	7	10
	35°C	■	■	■	■	8	11	15
	30°C	■	■	8	10	11	15	■
	25°C	■	9	11	18	17	■	■
	20°C	12	14	17	26	■	■	■
	15°C	17	23	32	■	■	■	■

The resin, mould and workshop should all be at, or above, 15°C before curing is carried out. Scott Bader (Pty) Ltd. will not be liable for problems caused by use at lower temperatures than recommended.

N.B. Peroxide catalysts are highly reactive and may decompose with explosive violence, or cause fires, if they come into contact with flammable materials, metals or accelerators. For this reason they must never be stored in metal containers or be mixed directly with accelerators.

Additives

Crystic 1355PA can be supplied in a restricted range of colours. This eliminates the potential for mixing errors with small quantities of pigment pastes. We do not recommend the addition of pigment paste to Crystic 1355PA, due to the difficulty in obtaining specific colours. The addition of any pigment or other additives may affect the properties of the resin.

Typical Properties

The following tables give typical properties of Crystic 1355PA when tested in accordance with BS2782.

Table 3: Typical properties of liquid Crystic® 1355PA.

Property	Units	Nominal value
Appearance		White to pinkish
Viscosity @ 25°C 37.35 sec ⁻¹	centipoise	450
Viscosity @ 25°C 4500 sec ⁻¹	centipoise	340
Specific gravity @ 25°C		1.4
Volatile Content	%	30
Stability in the dark at 20°C	months	3
Geltime @ 25°C using 1% Norox KP9	minutes	18

Table 4: Typical properties of Crystic 1355PA fully cured* resin (unfilled casting).

Property	Units	Nominal value
Barcol Hardness (GYZJ 934-1)		57
Deflection Temperature under load † (1.80 MPa)	°C	80
Water Absorption 24hrs @ 23°C	mg	14
Tensile Strength	MPa	50
Tensile Modulus	MPa	6400
Elongation at Break	%	1.1

*Curing schedule - 24hrs @ 20°C, 3hrs @ 80°C

†Curing schedule - 24hrs @ 20°C, 5hrs @ 80°C, 3hrs @ 120°C

Storage

Crystic 1355PA 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 drums be kept in a horizontal position to avoid the possible ingress of water.

Packaging

Crystic 1355PA is supplied in 25kg kegs, 225kg drums, and 1125kg intermediate bulk containers. Bulk supplies can be delivered by road tanker.

Health and Safety

Please see the applicable Material Safety Data Sheets, depending on the curing system used.



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Before you use this information, kindly verify that this data sheet is the latest version.

All information is given in good faith but without warranty. We cannot accept responsibility or liability for any damage, loss or patent infringement resulting from the use of this information.

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