

CRYSTIC[®] 1143PA

Orthophthalic Polyester Resins for Closed Mould Use

Introduction

Crystic 1143PA is based on a tough, durable orthophthalic unsaturated polyester resin. It is designed for use in Resin Transfer Moulding (RTM) and may be used in other resin injection or vacuum assisted techniques.

Formulation

Crystic 1143PA should be cured using AAP (acetylacetone peroxide – Andonox[®] PD40). MEKP catalysts may be used, and will give similar gelltimes, but the resin will take appreciably longer times to cure.

Geltime

The geltime of the resin will be determined by the level of catalyst used, and the temperature of the workshop and mould (if heated). Table 1 shows examples of typical gelltimes for Crystic 1143PA. These were carried out on 100g samples. Geltime will be longer for thin laminates and shorter for large volumes of resin, and users are urged to make their own tests before proceeding.

Table 1: Typical gelltimes in minutes for Crystic 1143PA.

Temperature	1 % Andonox [®] PD40	1.5 % Andonox [®] PD40	2 % Andonox [®] PD40
20 °C	40	36	32
25 °C	31	28	25
30 °C	14	12	7

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.

Curing of the resin should not be carried out at temperatures below 15°C. 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.

Exotherm

The exotherm produced during the cure of the resin will depend on the amount of catalyst used. An increase in the temperature of the mould or the liquid resin will result in a higher peak exotherm. This will also be affected by other factors, such as the use of fillers, component thickness and the material from which the mould is constructed. For further recommendations please consult Scott Bader Technical Service Department.

Additives

Crystic 1143PA may be coloured using up to 5% of Crystic Pigment Paste. If other additives are to be used, please contact Scott Bader Technical Service Department before proceeding.

Typical Properties

The following table gives typical properties of Crystic 1143PA when tested in accordance with SABS713-1999.

Table 2: Typical properties of liquid Crystic 1143PA.

Property	Units	Liquid Resin
Appearance		Light Amber
Viscosity at 25°C	centipoise	250
Geltime at 25°C with 2% Andonox [®] PD40	mins	25
Stability at 25°C	months	3

Storage

Crystic 1143PA 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. Wherever possible they should be stored under cover.

Packaging

Crystic 1143PA 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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