CRYSTIC® 123PA and CRYSTIC® 124PA

General Purpose Polyester Resins

Introduction
Crystic 123 PA is a medium thixotropic tropicalised pre-accelerated, waxed unsaturated polyester resin.

Crystic 124 PA is a non-thixotropic tropicalised pre-accelerated, waxed unsaturated polyester resin. These resins can also be supplied un-waxed.

These resins have been specially formulated to give rapid wetting and impregnation of the reinforcement and are ideally suited for the building of boats, water tanks, bath tubs, shower trays and other products where water resistance is an important factor.

Formulation
The following formulations are recommended for laminating.

Parts by Weight	Formulation
Crystic 123PA Crystic 124PA	100
Catalyst M or MEKP M-50	1 – 2.5

Curing should not be carried out at temperature below 150C and the resin must be allowed to attain workshop temperature before being formulated for use.

These resins require the addition of catalyst only to start the curing reaction. The catalyst must be thoroughly stirred in the resin.

Gel Time
The amount of catalyst and the ambient temperature control the gel time of the resin formulation. The following table shows the gel time of 100 pbw Crystic 123 or 124 containing various levels of Catalyst M.

Parts of Catalyst to 100 parts of catalysed resins	1.0	1.5	2.0
Gel time in minutes at 25°C	37.5	23.25	16.5
Gel time in minutes at 30°C	29	18	12.5

Typical Properties
Typical properties of the liquid resins.

Property		Crystic 123PA	Crystic 124PA
Appearance		Cloudy	Clear
Viscosity at 25°C CPS (Brookfield LVF viscometer spindle 3 at 60 RPM)		500	400
Specific Gravity at 25°C		1.12	1.11
Acid value	mg KOH/g	24	24
Volatile Content	%	37	38

Typical properties of fully cured resins (unfilled casting) using test methods as in BS 2782 : 1980.

Property		Typical Value
Barcol Hardness (Model GYZJ 934 -1)		45
Water Absorption 24 h at 23°C	mg	18
Deflection Temperature under Load (1.80 MPa)	°C	69
Specific Gravity at 25°C		1.21
Elongation at Break at 20°C	%	2.1
Tensile Strength	MPa	65
Tensile Modulus	MPa	3800

Typical properties of a Crystic 123PA *CSM Laminate using test methods as in BS 2782 : 1980.

Property		Cure 1	Cure 2
Glass Content	%	32	32
Tensile Strength	MPa	122	117
Tensile Modulus	MPa	8500	8400
Elongation at Break	%	2.0	2.0
Flexural Strength	MPa	183	174
Flexural Modulus	MPa	6300	5700

* Made with 4 layers of 450g/m^2 mat
Cure 1 – 24 hours at 20°C, 16 hours at 40°C
Cure 2 – As Cure 1, then after 2 hours boil in water (tested wet)

Storage
Crystic 123PA and Crystic 124PA should be stored in the dark in suitable closed containers. It is recommended that the storage temperature should be less than 20ºC where practical, but should not exceed 30ºC. Ideally, containers should be opened only immediately prior to use.

Packaging
Crystic 123PA and Crystic 124PA are supplied in 225kg steel containers. For shipping purposes they are Class 3.3 in the IMCO Code (page 3379).

Health & Safety
Please see separate Material Safety Data Sheet.

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