

CRYSTIC[®] 195

Introduction

Crystic195 is a light stabilised polyester resin, containing styrene and methyl methacrylate. It is recommended for use in the manufacture of maximum clarity, hand made GRP sheeting. Fully cured laminates made with Crystic 195 and a sheeting grade of powder bonded 'E' glass chopped strand mat can have a light transmission of more than 80%. They exhibit excellent weather resistance and a stable appearance even after prolonged exposure.

Formulation

Crystic195 should be allowed to attain workshop temperature (18°C - 20°C) before use. It requires the addition of a catalyst and an accelerator to start the curing reaction. The recommended catalyst is Catalyst M (or Butanox M50) which should be added at 2% into the resin. The catalyst must be thoroughly dispersed in the resin, and this mix will remain usable for approximately 24 hours at workshop temperature (18°C - 20°C). Shortly before use, the correct amount of Accelerator E should be stirred into the catalysed resin.

N.B Catalyst and accelerator must not be mixed together, directly, as they can react with explosive violence.

Pot Life

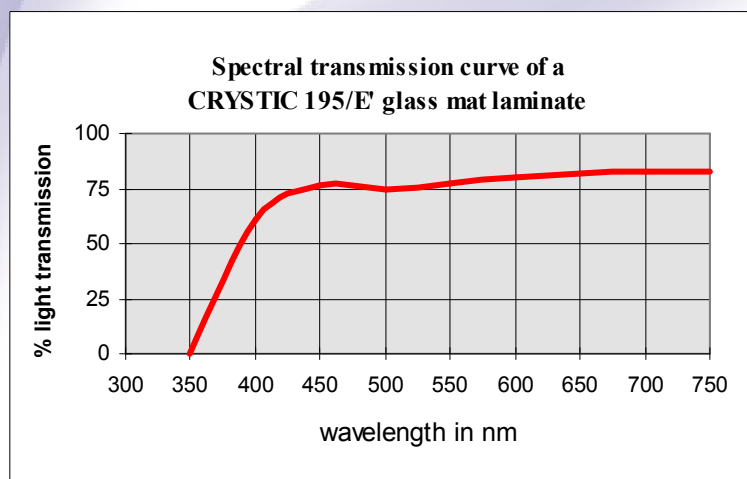
The amount of Accelerator E can be approximately determined from the table below.

Parts of Accelerator E to 100 Parts of Catalysed Resin	1.0	2.0	3.0	4.0
Pot life in Minutes at 15°C	120	80	58	45
Pot life in Minutes at 20°C	80	55	40	30
Pot life in Minutes at 25°C	60	42	30	25

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

Weather Resistance and Light Transmission

To ensure maximum light transmission, laminates made with Crystic 195 should have a resin to glass ratio of at least 3:1. The spectral transmission curve shown below is that of a typical, fully cured, Crystic 195 laminate.



For optimum weather resistance and durability, laminates must be fully cured. After moulding, laminates should be allowed to mature at 20°C for at least three weeks before being put into service. Post curing at elevated temperatures is not recommended.

Additives

Crystic195 may be coloured by the addition of small quantities of light stable translucent tints. Tests should be made by the user, to ensure even colour distribution.

TYPICAL PROPERTIES

The following tables give typical properties of Crystic 195 when tested in accordance with BS 2782.

Property		Liquid Resin
Appearance		Water white to pale blue
Viscosity at 25°C 92.4 sec ⁻¹	poise	1.7
Specific Gravity at 25°C		1.12
Volatile Content	%	40
Acid Value	mg KOH/g	31
Stability at 20°C	months	6
Geltime at 25°C using 2% Catalyst M 4% Accelerator E	minutes	25
Property		Fully Cured* Resin (unfilled casting)
Barcol Hardness (Model GYZJ 934-1)		48
Deflection Temperature under load † (1.80 MPa)	°C	68
Water Absorption 24 hours at 23°C	mg	20
Tensile Strength	MPa	47
Tensile Modulus	MPa	4600
Elongation at Break	%	1.2
Specific Gravity at 25°C		1.24
Volumetric Shrinkage	%	9.7
Refractive Index N 25/d		1.548

* Curing Schedule - 24 hrs 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		C.S.M** Laminate
Glass Content	%	27
Tensile Strength	MPa	98
Tensile Modulus	MPa	7062
Elongation at Break	%	1.8
Flexural Strength	MPa	170
Flexural Modulus	MPa	5480

** Made with 4 layers 450g/m² PB CSM
Curing schedule - 24hrs at 20°C, 16hrs at 40°C

Storage

Crystic195 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 they are kept in a horizontal position to avoid the possible ingress of water.

Packaging

Crystic195 is supplied in 25kg and 200kg containers. Bulk supplies can be delivered by road tanker.

Health and Safety

Please see separate Material Safety Data Sheet.

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