

# CrysticROOF

## FR RESIN



### INTRODUCTION

CrysticROOF FR Resin is a low styrene emission, pre-accelerated, orthophthalic polyester resin, which rapidly wets out reinforcements. It is not suitable for boat construction, chemical resistance or mouldings in contact with food products.

### WORKING INSTRUCTIONS

CrysticROOF FR Resin can be used in the standard manner as CrysticROOF Standard resin and all of the guidance within the installation guide should be followed accordingly.

CrysticROOF FR Resin should be stirred well by hand, or with a low shear mixer to avoid aeration, and then allowed to stand to regain thixotropy. CrysticROOF FR Resin requires only the addition of catalyst to start the curing reaction. The recommended catalyst is Catalyst M (or Butanox M50), which should be added at 1% into the resin. The catalyst should be thoroughly incorporated into the resin with a low shear mechanical stirrer where possible.

NB: All CrysticROOF resins and topcoats generate heat when the catalyst is added, it is better to mix smaller amounts more often than a large amount in one go, mixing larger volumes potentially will reduce your working time significantly and therefore be wasteful.

### APPLICATIONS

CrysticROOF FR Resin is designed for hand laminating and would normally be used with chopped strand mat.

### ADDITIVES

The addition of filler or pigments can adversely affect the hardening of the resin. Users should evaluate the effect of any potential additives before use.

### POT LIFE

Temperature	Pot Life in minutes with 1% Catalyst M
15°C	42
20°C	22
25°C	17

Ideally the resin and ambient temperature should be at, or above, 15 °C before curing is carried out. Lower temperatures will lengthen the cure time considerably. The level of catalyst can be increased to 2% to assist the cure at reduced temperatures. The environmental conditions should be dry and with no imminent rain forecast. The substrate should also be dry before application begins in order to ensure a good bond.

### TYPICAL PROPERTIES - LIQUID RESIN

The following tables give the minimum expected properties of CrysticROOF FR Resin when tested in accordance with BS 2782.

Property	Unit	Typical Values
Appearance		Opaque
Viscosity at 25°C		Thixotropic
Specific Gravity at 25°C		1.12
Volatile Content	%	43
Geltime at 25°C using 1% Catalyst M (or Butanox M50)	Minutes	17

## STORAGE AND SHELF LIFE

CrysticROOF FR Resin should be stored between 5°C and 25°C in the original, unopened container in a dry, well ventilated place. Protect from freezing and direct sunlight. Avoid contact with oxidising agents. If stored outside of these recommendations, shelf life will be significantly reduced.

Stability from date of manufacture when stored in accordance with storage recommendations is 5 months.

## PACKAGING

CrysticROOF® FR Resin is supplied in 20kg containers.

## HEALTH AND SAFETY

Please see separate Material Safety Data Sheet.

## TYPICAL PROPERTIES - FULLY CURED RESIN

Property	Unit	Typical Values*
Barcol Hardness (Model GYZJ 934-1)		42
Deflection Temperature under load † (1.80 MPa)	°C	67
Water Absorption 24 hours at 23°C	Mg	15
Tensile Strength	MPa	50
Tensile Modulus	Mpa	3800
Elongation at Break	%	1.5

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

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

## TYPICAL PROPERTIES - CSM LAMINATE

Property	Unit	Typical Values**
Tensile Strength	MPa	98
Tensile Modulus	MPa	7600
Flexural Strength	MPa	190
Flexural Modulus	MPa	7400
Elongation at Break	%	1.7

\*\*Made with 4 layers 450g/m<sup>2</sup> PB CSM

Curing Schedule - 24 hrs @ 20°C, 16hrs @ 40°C.



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