

CRYSTIC[®] U 1131 TPA

Fire Resistant, Low Smoke Polyester Resin

Introduction

Crystic U 1131 TPA is a filled, orthophthalic, pre accelerated, low styrene content and thixotropic unsaturated polyester resin. It should be used when excellent low smoke and fire resistant laminates are required. Crystic U 1131 TPA is halogen free and does not contain heavy metals.

Application

Crystic U 1131 TPA has been designed to be used by spray application or by contact moulding. Its fire resistance and low smoke properties enable the product to be used in demanding applications such as building, public transport and railways.

Features and Benefits

Features	Benefits
Filled resin	Cost effective per kilo
Halogen free	Low toxicity fumes Excellent smoke rating
No heavy metals	In line with safety regulations and REACH recommendations
Low styrene content	Better environment for workers Reduced smell for the neighbourhood
Very stable rheology	No filler sedimentation

Approvals

Fully cured laminates produced with resin Crystic U 1131 TPA and gelcoat Crystic 72PA are classified M2 and F1 according to the French Standard. Laminates have also passed the ASTM E162 E662 and BSS 7239. With gelcoat Crystic 967 FR the laminates are classified S4 SR2 ST2 according to the German DIN 5510.

Resin/Glass Ratio

Due to the high specific gravity of Crystic U 1131 TPA a resin to glass by weight ratio of 2.6 : 1 is recommended.

Formulation

Crystic U 1131 TPA should be allowed to attain workshop temperature and being a filled resin should be thoroughly stirred before being formulated for use. The following cold curing formulation is recommended:

Crystic U 1131 TPA	100 parts
Butanox M50 (or equivalent)	1 to 2 parts

Gel Time

The ambient temperature and the amount, and type, of accelerator control gel time of resin formulations. At 25°C the gel time of Crystic U 1131 TPA containing 2% Butanox M50 (or equivalent) is around 15 minutes.

Parts of Butanox M50 (or equivalent) for 100 parts Crystic U 1131 TPA	2
Gel time at 25°C	13 – 17 minutes

Additives

Since certain pigments, fillers or extra styrene may affect the properties of Crystic U 1131 TPA their effect should be evaluated before addition to the formulation.

Post-Curing

Post curing is recommended in order to develop the heat deflection temperature, dimensional stability and optimum mechanical and fire retardant properties.

Typical Properties

Property		Liquid Resin
Viscosity at 25°C (Brookfield Sp3 / 5Rpm)	dPas	25 - 40
Specific Gravity		1,60
Volatile Content	%	20 - 23
Appearance		Whitish
Stability at 20°C	months	3
Gel time at 25°C with 100 parts of U 1131 TPA 2 parts Butanox M50 (or equivalent)	minutes	13 – 17
Property		Cured Base Resin
Barcol Hardness (Model GYZJ 934-1)		45
Heat Deflection Temperature (1.80 MPa)	°C	94
Tensile Strength	MPa	65
Tensile Modulus	MPa	3850
Elongation at Break	%	2.2

Packaging

Crystic U 1131 TPA is supplied in 250 kg drums.

Health and Safety

Please see the applicable Material Safety Data Sheets.

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SCOTT BADER COMPANY LIMITED

Wollaston, Wellingborough, Northamptonshire, NN29 7RL

Telephone: +44 (0) 1933 663100

Facsimile: +44 (0) 1933 666623

www.scottbader.com