

## Introduction

Crystic® U1131TPA 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.

## Applications

Crystic® U1131TPA 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

Crystic® U1131TPA has fire retardant properties making it suitable for applications where fire resistance is a consideration.

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

## Approvals

Laminates made with Crystic U1131 TPA can achieve the following standards.

Due to the high specific gravity of Crystic U 1131 TPA a resin to glass by weight ratio of 2,6 : 1 is recommended.

| Laminate structure        | Standard       | Can achieve |
|---------------------------|----------------|-------------|
| U1131TPA + Fireguard 72PA | NF P 92-507    | M2 F1       |
|                           | ASTM E162 E662 | pass        |
|                           | BSS7239        | pass        |
| U1131TPA + Crystic 967FR  | DIN 5510       | S4 SR2 ST2  |

## Additives

The addition of fillers or pigment pastes can adversely affect the properties of the cured laminate. Users should seek advice from our Technical Support Department before making any additions.

## Catalyst & Geltime

Crystic® U1131TPA should be allowed to attain workshop temperature (18°C - 20°C) before use.

It requires only the addition of a catalyst to start the curing reaction. The recommended catalyst is MEKP (50%)., which should be thoroughly incorporated into the resin, using a low shear mechanical stirrer where possible.

| Ambiant temperature | Catalyst type and concentration | Geltime   |
|---------------------|---------------------------------|-----------|
| 25°C                | MEKP – 2%                       | 13-17 min |

## Post curing

Satisfactory laminates for many applications can be made from Crystic® U1131TPA by curing at workshop temperature (20°C). For optimum properties, however, laminates should be post-cured before being put into service. The laminate should be allowed to cure for 24 hours at 20°C, and then be oven cured for 16 hours at 40°C or 3 hours at 80°C.

## Typical properties

| Property  | Unit   | Liquid Resin |
|---|--------|--------------|
| Appearance  | -      | Withish      |
| Viscosity (Brookfield Sp3 / SP5Rpm) 25°C  | dPa.s  | 25 - 40      |
| Specific Gravity  | -      | 1.6          |
| Volatile content  | %      | 20 – 23      |
| Stability from date of manufacture when stored in accordance with storage recommendations | Months | 3            |

| Property                             | Unit | Cured Resin |
|--------------------------------------|------|-------------|
| Barcol Hardness (Model GYZJ 934-1)   | -    | 45          |
| Heat Deflection Temperature (1.8MPa) | °C   | 94          |
| Tensile Strength                     | MPa  | 65          |
| Tensile Modulus                      | MPa  | 3850        |
| Elongation at Break                  | %    | 2.2         |

## Storage

Crystic® U1131TPA 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.

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## Packaging

Crystic® U1131TPA is supplied in 225kg & 1100kg containers.

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## Health and safety

Please see separate Safety Data Sheet.

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