

CRYSTIC® 784PA

Polyester Resin for Vac Flow

Introduction

Crystic 784PA is a pre-accelerated, filled, orthophthalic polyester resin designed for use in the vac flow process.

Applications

Crystic 784PA was developed primarily as a vac flow resin, but its properties make it suitable for use in other similar techniques, particularly RTM light.

Features and Benefits

Crystic 784PA is a versatile resin with good mechanical properties. Its viscosity characteristics have been designed to facilitate flow through the mould, whilst minimising filler settlement during storage.

Formulation

Crystic 784PA must be thoroughly stirred and allowed to attain workshop temperature (18°C - 20°C) before use. It needs only the addition of a catalyst to start the curing reaction. The recommended catalyst is Trigonox 44B which should be added at 2% into the resin. Trigonox 61, a methyl ethyl ketone peroxide / acetyl acetone mixture also can be used where a more gradual cure is required. The gellimes of Crystic 784PA can be approximately determined from the table below.

Pot Life

| Temperature | Pot Life in minutes using Trigonox 44B | | |
|-------------|--|------|------|
| | 1.0% | 1.5% | 2.0% |
| 15°C | 40.4 | 29.0 | 22.9 |
| 20°C | 25.2 | 17.8 | 12.2 |
| 25°C | 14.3 | 10.1 | 6.5 |

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

Additives

Crystic 784PA can be supplied in a restricted range of colours. The addition of pigment paste to Crystic 784PA is not recommended due to the difficulty in obtaining specific colours. The addition of any pigment, extra fillers or other additives can adversely affect the Vacflo Moulding process and the properties of the cured laminate. Users should consult Scott Bader's Technical Service Department before making any such additions.

Post Curing

For optimum properties, laminates made using Crystic 784PA should be post cured before being put into service. The laminate should be allowed to cured for 24 hours at 20°C, and then be oven cured for a minimum of 3 hours at 80°C.

Typical Properties

The following tables give typical properties of Crystic 784PA when tested in accordance with the appropriate SB, BS, BS EN or BS EN ISO test methods.

| Property | | Liquid Resin |
|--|---------|--|
| Appearance | | Cream, bit free |
| Viscosity at 25°C | poise | 2.3 |
| Specific Gravity at 25°C | | 1.28 |
| Volatile Content | % | 31 |
| Stability at 20°C | months | 3 |
| Geltime at 25°C using 2% Trigonox 44B | minutes | 6.5 |
| Property | | Fully Cured* Resin (Filled Casting) |
| Barcol Hardness (Model GYZJ 934-1) | | 45 |
| Deflection Temperature under load† (1.80MPa) | °C | 78 |
| Water Absorption 24hrs at 23°C | mg | 17 |
| Tensile Strength | MPa | 47 |
| Tensile Modulus | MPa | 3900 |
| Elongation at Break | % | 1.6 |
| Specific Gravity at 20°C | | 1.44 |

* Curing Schedule—24hrs 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 | | Laminate** |
|---------------------|-----|------------|
| Glass Content | % | 19.1 |
| Tensile Strength | MPa | 73 |
| Tensile Modulus | MPa | 6800 |
| Elongation at Break | % | 1.9 |
| Flexural Strength | MPa | 70 |
| Flexural Modulus | MPa | 6400 |

** Made with 1 layer Rovicore 600 D3 600
Curing Schedule - 24 hrs at 20°C, 16 hrs at 40°C

Storage

Crystic 784PA 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.

Packaging

Crystic 784PA is supplied in 25kg, 225kg and 1 tonne containers. Bulk supplies can be delivered by road tanker.

Health & Safety

Please see separate Material Safety Data Sheet.

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