

CRYSTIC GELCOAT 12PA

Resilient Tooling Gelcoat

Introduction

Crystic Gelcoat 12PA is a pre-accelerated gelcoat specially formulated from a neopentyl glycol /isophthalic base resin. It has been formulated for brush application and is available in a restricted range of colours. The information contained in this leaflet also applies to these pigmented versions.

Applications

Crystic Gelcoat 12PA is designed for use in the manufacture of FRP composite tooling.

Features and Benefits

Crystic Gelcoat 12PA is resilient and heat resistant and can be polished to a high gloss.

Formulation

Crystic Gelcoat 12PA should be allowed to attain workshop temperature (18° - 20°C) before use. Stir well by hand, or with a low shear mixer to avoid aeration, and then allow to stand to regain thixotropy. Crystic Gelcoat 12PA 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 2% into the gelcoat (please consult our Technical Service department if other catalysts are to be used). The catalyst should be thoroughly incorporated into the gelcoat, with a low shear mechanical stirrer where possible.

Pot Life

Temperature	Pot Life in Minutes
15°C	15
20°C	11
25°C	9

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

Application

Crystic Gelcoat 12PA is a tooling gelcoat and the application should be controlled at 0.5-0.6mm wet film thickness. As a guide, approximately 500-750g/m² of gelcoat mixture (depending on pigment) will give the required thickness when evenly applied. This will allow for any rubbing down which may be necessary during the life of the mould.

Additives

Crystic Gelcoat 12PA is supplied in a restricted range of colours. This eliminates the potential for mixing errors with small quantities of pigment paste. The addition of fillers or pigments can adversely affect the durability of the mould in use.

Typical Properties

The following tables give typical properties of Crystic Gelcoat 12PA when tested in accordance with SB, BS EN or BS EN ISO test methods.

Property		Liquid Gelcoat
Appearance		Mauvish, cloudy
Viscosity @ 25°C		thixotropic
Specific Gravity @ 25°C		1.1
Acid Value	mgKOH /g	16
Volatile Content	%	34
Stability in the dark @ 20°C	months	3
Gel time @ 25°C using 2% Catalyst M (Butanox M50)	minutes	9

Property		Fully cured *Gelcoat (unfilled casting)
Barcol Hardness (model GYZJ 934-1)		46
Water Absorption 24 hrs @ 23°C	mg	17
Deflection Temperature under load† (1.80 MPa)	°C	83
Elongation at Break	%	2.0
Tensile Strength	MPa	64
Tensile Modulus	MPa	3800

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

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

Post Curing

For optimum life, a mould constructed using Crystic Gelcoat 12PA should be fully cured before being put into use. This can be achieved by placing the mould in an oven at 40°C for 30 hours. If this is not practical, the mould should be left in warm conditions (20°C) for 2-3 weeks prior to use. Where a mould is likely to experience severe conditions (eg due to high exotherm from laminates), it should be post cured at elevated temperature. Contact our Technical Service department for advice.

Storage

Crystic Gelcoat 12PA 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 Gelcoat 12PA is supplied in 25 kg and 225 kg containers.

Health and Safety

Please see separate Material Safety Data Sheet

Technical Leaflet No: 101.1

August 2004