CRESTAMOULD®
Matched Tooling Systems

Crestamould® 474PA

Heat and chemical resistant polyester resin

Product Overview

Introduction

Crestamould® 474PA is a thixotropic, pre-accelerated orthopthalic polyester resin with good heat and chemical resistant properties. A non-thixotropic, non-accelerated version of this resin is available as Crystic® 198.

Applications

Crestamould® 474PA was developed for use in a wide range of applications throughout the chemical industry, and is suitable for the construction of tanks, pipes and fumestacks to operate in environments where heat and chemical resistance are both required. It is ideally suited to the fabrication of heat resistant, dimensionally stable moulds for cold and heat assisted contact moulding and hot press moulding processes. Crestamould® 474PA is a versatile resin suitable for use in contact moulding and automated processes such as pultrusion.

Features and Benefits

Crestamould® 474PA can be used in conjunction with glass fibre backed polypropylene (Celmar), and suitably treated uPVC, to produce dimensionally stable composites with high heat and chemical resistance.

Approvals

Crestamould® 474PA meets the requirements of BS 3532:1990, for a Type C (heat resistant) polyester resin.

Product Characteristics

Formulation

Crestamould® 474PA should be 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 Catalyst M (or Butanox M50). The catalyst should be added at 2% into the resin shortly before use, and thoroughly dispersed. The geltime of the resin can be approximately determined from the table below.

Pot Life

Part of Catalyst M to 100 parts of Resin	2.0
Pot life in minutes at 15	40
Pot life in minutes at 20	22
Pot life in minutes at 25	12

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

Additives

Crestamould® 474PA can be pigmented by the addition of up to 5% of Crystic Pigment Paste. However, fillers and pigments can adversely affect the heat and chemical resistance of Crestamould® 474PA, and customers should satisfy themselves that the required properties will be obtained before any large scale use.

When reduced fire hazard laminates are required, up to 20% by weight of Crestamould® 474PA can be replaced by Crystic Prefil F.

Chemical Resistance

Performance figures for Crestamould® 474PA laminates in over 200 chemical environments are contained in the current edition of Technical leaflet 145.3 – Safe Chemical Containment.

Post Curing

In order to develop optimum heat and chemical resistance, Crestamould® 474PA laminates must be post cured before being put into service. Mouldings should be allowed to cure for 24 hours at 20°C - and then be oven cured for 3 hours at 80°C.

Where laminates are to withstand higher service temperatures than 80°C, a further period of post cure at the operating temperature should be given.

Typical Properties

The following tables give typical properties of Crestamould® 474PA when tested in accordance with BS 2782.

Property	Unit	Liquid Resin
Appearance		Cloudy, mauvish
Viscosity at 25°C 37.35sec^{-1}	Poise	5.3
Viscosity at 25°C 4500sec^{-1}	Poise	3.4
Specific Gravity @ 25°C	gcm^{-3}	1.10
Volatile Content	%	38
Acid Value	mg KOH/g	23
Stability in the dark at 20°C	Months	6
Geltime at 25°C using 2% Catalyst M	Minutes	12

Property	Unit	Fully Cured Resin (unfilled casting)
Barcol Hardness (GYZJ 934 - 1)		48
Deflection Temperature under load (1.80 MPa)	°C	112
Water Absorption 24hrs @23°C	mg	28
Tensile Strength	MPa	57
Tensile Modulus	MPa	3700
Elongation at Break at 20°C	%	1.8
Specific Gravity @ 25°C		1.22
Volumetric Shrinkage	%	8.2

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

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

Additional Information

Storage

Crestamould® 474PA 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

Crestamould® 474PA is supplier in 25kg and 200kg containers. Bulk supplies can be delivered by road tanker.

Health & Safety

Please see separate Materials Safety Data Sheet.

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