

471 PA

Low viscosity fast curing resin for quick production cycles

Introduction

471PA is a pre-accelerated, low viscosity polyester resin with rapid hardening characteristics. It combines rapid impregnation of reinforcements and fillers with a very short mould release time, and is suitable for hand-lay or spray applications. Crystic 471PALV is recommended for automotive, marine and resin concrete applications.

Approvals

471PA is approved by Lloyd's Register of Shipping for use in the construction of craft under their survey. It also meets the requirements of BS 3532:1990, Type A.

Product Characteristics

Formulation

471PA

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 catalysts are Catalyst M (or Butanox M50) or, where ambient temperatures are high, Catalyst O (or Interlox LA3). Either catalyst should be added at 1% or 2% into the resin and thoroughly dispersed. The geltime of the resin can be approximately determined from the table below.

Pot Life

Parts of Catalyst M to 100 Parts Resin	2.0
Pot life in Minutes at 15°C	18
Pot life in Minutes at 20°C	12
Pot life in Minutes at 25°C	8

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

Additives 471PA

may be pigmented by the addition of up to 10% of Pigment Paste. The addition of fillers may change the hardening rate of the resin, and should be evaluated before large scale use.

Post Curing

Satisfactory laminates for many applications can be made with 471PA by curing at workshop temperature (20°C). For optimum properties and long term performance, however, laminates should 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 or 16 hours at 40°C.

Typical Properties

The following tables give typical properties of 471PA when tested in accordance with BS 2782.

On liquid resin		
Appearance		Cloudy, mauvish
Viscosity @ 25°C 37.35 sec-1	poise	3.8
Viscosity @ 25°C 4500 sec-1	poise	2.4
Specific Gravity @ 25°C		1.11
Volatile Content	%	42
Acid Value	mg KOH/g	18
Stability in the dark @ 20°C	months	3
Geltime @ 25°C using 2% Catalyst M	minutes	8

On fully cured* resin (unfilled casting)		
Barcol Hardness (Model GYZJ 934-1)		47
Deflection Temperature under load † (1.80 MPa)	°C	78
Water Absorption 24 hours at 23°C	mg	18
Tensile Strength	MPa	68
Tensile Modulus	MPa	3700
Elongation at Break	%	2.5
Specific Gravity at 25°C		1.22

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

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

On C.S.M** Laminate			
		PB	EB
Glass Content	%	27.5	28.8
Tensile Strength	MPa	99	96
Tensile Modulus	MPa	6100	6700
Elongation at Break	%	2.0	1.6
Flexural Strength	MPa	218	176
Flexural Modulus	MPa	6300	6200

** Made with 4 layers 450g/m² CSM

Curing schedule - 24hrs @ 20°C, 16hrs @ 40°C

Storage 471PA

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. Where they have to be stored outside, it is recommended that they are kept in a horizontal position to avoid the possible ingress of water.

Packaging 471PA

is supplied 1 litre - 225 kg containers.

Health & Safety

Please see separate Material Safety Data Sheet.

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