

CRYSTIC[®] 5046PA

Fire Retardant Polyester Resin, M1F2

Introduction

Crystic 5046PA is a filled, orthophthalic, pre - accelerated, unsaturated polyester resin used for fire retardant application.

Application

Crystic 5046PA has been designed for manufacturing composite parts by hand lay up / injection process. Due to its excellent fire resistance the product can be used in demanding applications such as building, public transport and railways. The resin has fire retardant fillers and must be stirred before use.

Features and Benefits

Features	Benefits
Low viscosity	Rapid impregnation Lower consumption Suitable for RTM processes
Low styrene content	Better comfort for the workers
Excellent Q rating (0,53)	Safety factor to achieve M1 laminates
Very stable	Low filler sedimentation

Approvals

Fully cured laminates produced with Crystic 5046PA and gelcoat Crystic Gelcoat 967 PA FR achieves M1F2 as per NFP 92 – 501 / NFF – 16 – 101.

Resin/Glass Ratio

Crystic 5046PA - resin to glass by weight ratio of 2.8 : 1 is recommended

Gel Time

The ambient temperature and the amount, and type, catalyst control gel time of resin formulations. At 25°C the gel time of Crystic 5046PA containing 2% of catalyst M and is about 16 minutes.

Additives

Since certain pigments, fillers or extra styrene may affect properties of Crystic 5046PA their effect should be evaluated before addition to the formulation.

Post Curing

Satisfactory laminates for many applications can be made from Crystic 5046PA by curing at workshop temperature (20°C). For optimum fire retardant 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		Liquid Resin
Aspect		White
Viscosity, Brookfield, SP3 / 60 at 25°C	cps	600 - 900
Stability at 25°C	months	3
Geltime at 25°C using 100 parts of Crystic 5046PA and 2 parts Butanox M50	minutes	15 - 20
Property		Fully Cured Resin
Barcol Hardness (Model GYZJ 934-1)		50
Water absorption (24 H at 23°C)	mg	15
Water absorption (7 days at 23°C)	mg	41
Heat Deflection Temperature (1.80 MPa)	°C	94
Specific Gravity		1.6
Tensile Strength	MPa	45
Tensile Modulus	MPa	4900
Volumic Shrinkage	%	5.8
Elongation at Break	%	1.25

Packaging

Crystic 5046PA is supplied in 225kg or 250kg drums.

Storage

Crystic 5046PA should be stored under cover in the dark in the container in which it is supplied. Storage temperature should not exceed 25°C.

Health and Safety

Please see separate Materials Safety Data Sheet.

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