

CRYSTIC FR1166 PAK

Halogen Free Fire Retardent resin

Introduction

CRYSTIC FR1166 PAK is a filled, orthophtalic, pre accelerated, low styrene content and thixotropic unsaturated polyester resin. It has to be used when excellent low smoke and fire resistant laminates are required. **CRYSTIC PD1166 PAK** is halogen free and does not contain heavy metals.

Application

CRYSTIC FR1166 PAK has been designed to be used by spray application or by contact moulding. Its fire resistance and low smoke properties enable the product to be used in demanding applications such as building, public transport and railways

Features and Benefits

Features

Halogen free
No heavy metals
Low styrene content
Special Additives

Benefits

Low toxicity of the fumes, excellent smoke rating
In line with safety regulation and REACH recommendations
Better comfort for the workers, lower smell for the neighbourhood.
Fast and easy impregnation of the reinforcements.

Formulation

CRYSTIC FR1166 PAK should be allowed to attain workshop temperature. The following cold curing formulation is recommended:

Crystic FR1166 PAK	100 parts
Catalyst M	1 to 2 parts

Catalyst M is a Methyl Ethyl Ketone Peroxyde at 50% such as the Butanox M50 from AKZO, or equivalent.

Approvals

Fully cured laminates produced with resin **CRYSTIC FR1166 PAK** and gelcoat **CRYSTIC 72 PA** can achieve M2 and F1 according to the French Standard (NF P92-501 and NF F16-101).

Responsability

It's the responsibility of the moulder to ensure that the mouldings are passing pass the requested fire classification.

Gel Time

The ambient temperature and the amount, and type, of accelerator control gel time of resin formulations. At 25°C the gel time of **CRYSTIC FR1166 PAK** containing 2,0 % of catalyst M is about 14 minutes.

Additives

Since certain pigments, fillers or extra styrene may affect the properties of **CRYSTIC FR1166 PAK** their effect should be evaluated before addition to the formulation.

Post-Curing

Post curing is recommended in order to develop the heat deflection temperature, dimensional stability and optimum mechanical and fire retardant properties.

Trial before use

It is recommended to try the product on a small scale production before the resin is used for long runs.

Packaging

CRYSTIC FR1166 PAK is supplied in 250 kg top opened drums, 1100 kg IBC.

Typical Properties

On liquid resin

Viscosity at 25°C (Brookfield Sp3 / 50Rpm)	dPa.s	7,0 – 10,0
Specific gravity at 25°C		1,50
Acid index	mg KOH/g	20 – 24
Volatile content	%	23 – 28
Aspect	-	Filled
Stability under recommended storage conditions	month	3
Geltime at 25°C for 100 g of resin + 2 ml cata.M	min	12 - 16

Cured base Resin

Barcol hardness (GYZJ 934-1)		40
Heat Deflection Temperature (ISO 75-2/A) under load (1,8 MPa)	°C	70
Water Absorption (ISO 62) (24h at 23°C)	mg	18
Specific gravity at 20°C	-	1,59
Elongation at break	%	2
Tensile strength	MPa	58
Tensile modulus	MPa	4100

Test according to BS 2782 :1980 $1\text{MPa} = 1\text{MN/m}^2 = 1\text{N/mm}^2 = 10,2\text{ kgf/cm}^2$

* cured 24 h at 20°C then 3 h à 80°C except for the HDT where the schedule was 24 h at 20°C then 5 h at 80°C then 3h at 120°C.

Storage

CRYSTIC FR1166 PAK should be stored under cover in the dark in the container in which it is supplied.

Recommended storage temperature is 10-25°C, and should not exceed 28°C. Storing the resin above 28°C will modify the properties of the product and will shorten the shelf life. If stored outside, keep horizontal to avoid water ingress. The product must be gently remixed before use, with mechanical device.

Health and safety

Please refer to the specific MSDS of the product.

FR1166 PAK - C30147 - Eng - June 2016

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