

CRYSTIC[®] D3846 PA

Isophthalic Resin for Pipe Lining

Introduction

CRYSTIC D3846PA is a thixotropic, pre-accelerated, isophthalic unsaturated polyester resin with a low exotherm.

Application

CRYSTIC D3846PA has been specially designed for the production of liners to be used in the pipe relining industry. Fully cured liners offer high chemical resistance and mechanical properties, together with excellent long term property retention.

Features and benefits

Features	Benefits
High HDT	Excellent mechanical properties
High molecular weight	Excellent resistance to water ingress
High elongation	Excellent impact resistance
Low exotherm	Prevents distortion of heat sensitive plastic liner
Long term experience	Safety in use

Variant

The non pre-accelerated version of CRYSTIC D3846 PA is available under reference CRYSTIC D 3846.

Chemical resistance

CRYSTIC D3846PA chemical resistance can be checked in the "Safe Chemical Containment" brochure from Scott Bader, or advice can be obtained by contacting our technical department.

Formulation

The following formulation is recommended for hot curing process (80 – 85°C).

CRYSTIC D 3846 PA	100 parts	CRYSTIC D 3846	100 parts
Perkadox 16	0.5-1	Perkadox 16	0.5-1
Trigonox 42S or Trigonox C	0.5-1	Trigonox 42S or Trigonox C	0.5-1
		Accelerator NL 49 P	0.3-0.5

Perkadox 16, Trigonox42S and C catalysts and Accelerator NL 49 P are from Company AKZO.

Gel time

The ambient temperature, the quantity and the type of catalyst will control the gel time of the resin. Gel time of 100 parts of CRYSTIC D3846PA with 1 part of Perkadox 16 at 80°C is 3.5 to 4.0 minutes.

Additives

Since certain pigments, fillers or extra styrene may affect properties of CRYSTIC D3846PA their effect should be evaluated before addition to the formulation.

Typical properties

On liquid resin		
Viscosity at 25°C Rhéomat at 37.35 sec-1	dPas	10-14
Specific gravity at 25°C		1.10
Acid Index	Mg KOH/g	14-19
Solid content (1H at 150°C)	%	57-61
Aspect		Thixo
Stability in the dark at 20°C	Month	6
Reactivity SPI at 80°C for 100g of resin + 1g Perkadox 16	Minutes	3.5-4.0

On fully cured* resin		
Barcol hardness (GYZJ 934 – 1)	dPas	10-14
Heat deflection temperature under load (1.8 MPa)	°C	75
Water Absorption (24h à 23°C)	mg	16
Specific gravity at 20°C		1.16
Elongation at break	%	3.8
Tensile strength	MPa	75
Tensile modulus	MPa	3500
Flexural Strength	MPa	86
Flexurus Modulus	MPa	3600

Test according to BS 2782 :1980

1MPa = 1MN/m² = 1N/mm² = 10,2 kgf/cm²

* cured 24h at 20°C then 3h at 80°C except for the HDT where the schedule was 24h at 20°C then 5h at 80°C then 3h at 100°C.

Mechanical properties of impregnated felt, thickness of 3mm		Unfilled resin	Filled resin 25% ON310
Tensile strength	MPa	31	29
Tensile modulus	MPa	3750	4700
Flexural strength	MPa	64	54
Flexural modulus	MPa	2850	3700

Packaging

CRYSTIC D3846PA is supplied in 225 kg or 1100 kg containers. Bulk supplies can be delivered by road tanker.

Storage

CRYSTIC D3846PA should be stored under cover in the dark in the container in which it is supplied. Storage temperatures should not exceed 20°C.

Health and security

Please see Safety data sheet.

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SCOTT BADER COMPANY LIMITED

Wollaston, Wellingborough, Northamptonshire, NN29 7RL

Telephone: +44 (0) 1933 663100

Facsimile: +44 (0) 1933 666623

www.scottbader.com