

# CRYSTIC 4044T V01

## Isophthalic NPG resin for pipe relining

### Introduction

CRYSTIC 4044T V01 is a thixotropic, non accelerated, isophthalic neopentylglycol unsaturated polyester resin with a low exotherm.

### Application

CRYSTIC 4044T V01 has been specially developed for the production of liners to be used in the pipe relining industry. Fully cured laminates offer high chemical resistance and mechanical properties, together with excellent long term property retention.

### Features and Benefits

<i>Features</i>	<i>Benefits</i>
High HDT.....	Excellent mechanical properties
High molecular weight.....	Excellent resistance to water ingress
High elongation.....	Excellent impact resistance
Long term experience .....	Safety in use

### Chemical resistance

CRYSTIC 4044T V01 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 (80 – 85°C)

CRYSTIC 4044T V01	:	100 parts
Perkadox 16	:	0.5 - 1 %
Trigonox C	:	1 – 1.5 %

Perkadox 16 and Trigonox C are products from AKZO.

## Approval

**CRYSTIC 4044T V01** is type 1140 according to the German standard DIN 16946 Teil 2 and group 3 according to DIN 18820 Teil 1.

## Reactivity

The ambient temperature, the quantity and the type of catalyst will control the reactivity of the resin.

The time to pic of **CRYSTIC 4044T V01** with 0.8% Perkadox 16 and 1% Trigonox C at 80°C is 7 to 8 minutes.

## Additives

Since certain pigments, fillers or extra styrene may affect properties of **CRYSTIC 4044T V01** their effect should be evaluated before addition to the formulation.

## Typical properties

### *On liquid resin*

Viscosity at 25°C Brookfield RVT Sp n <sup>o</sup> 4, 5 rpm Thixotropic index 5 rpm / 50 rpm	dPas	45 – 50 2.5 – 2.9
Specific gravity at 25°C		1,10
Acid index	mg KOH/g	12 - 16
Volatile content	%	37 - 41
Aspect		Thixo
Stability in the dark at 20°C	month	6
Reactivity at 80°C with 0.8% Perkadox 16 + 1% Trigonox C Time to pic Pic temperature	min ° C	7 – 8 250
Stability at 20 °C with 1% Perkadox 16	hours	> 20

### *On fully cured resin*

Barcol hardness	*	45
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(GYZJ 934-1)

Water absorption (24h at 23°C)	mg	16
Heat Deflection Temperature under load (1,8 MPa)	°C	100
Specific gravity at 20°C		1,16
Elongation at break	%	2.5
Tensile strength	MPa	65
Tensile modulus	MPa	3700
Flexural strength	MPa	130
Flexural modulus	MPa	3700

Test according to Iso 75A, ISO EN 178 & EN 527

1MPa = 1MN/m<sup>2</sup> = 1N/mm<sup>2</sup> = 10,2 kgf/cm<sup>2</sup>

\* 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 100°C.

## Packaging

**CRYSTIC 4044T V01** is supplied in 225 kg or 1100 kg containers. Bulk supplies can be delivered by road tanker.

## Storage

**CRYSTIC 4044T V01** should be stored under cover in the dark in the container in which it is supplied. Storage temperatures should not exceed 20°C.

Moreover, **CRYSTIC 4044T V01** should be periodically stirred to avoid sedimentation during the storage period

## **Health and security**

The most important protective measures to be taken with unsaturated resins and resin systems are:

- Correct storage
- Stock rotation
- Adequate workplace ventilation
- Local extraction where vapour
- Concentrations may build up or are high
- Use of fresh air masks in confined spaces or spray applications outside of spray booths
- Work place monitoring of vapour concentrations
- Good housekeeping
- Systematic work routines
- Competent personnel
- Supervision, training and instruction
- Fire precautions
- Correct disposals

## **Points of Caution**

Monomer and solvent vapour concentrations above certain levels can be hazardous to health and safety. The safety risks are associated essentially with the fire and possible explosions. The risks to health come mainly from the build up of vapours in the workplace in excess of certain limits and the limits applicable to the user's country should be determined.

The symptoms of the more common vapours are similar, i.e. dry irritating throat, coughing, drowsiness, headaches. Both liquids and vapours may cause skin irritation and dermatitis to susceptible personnel.

*All information is given in good faith but without warranty. We cannot accept responsibility or liability for any damage, loss or patent infringement resulting from the use of this information.*

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