

CRYSTIC[®] 5008 ST

Orthophthalic Resin for Resin Transfer Moulding

Introduction

CRYSTIC 5008 ST is a non accelerated orthophthalic resin designed for use by RTM technics, with excellent mechanical properties. Its rheology makes it suitable to be processed also by vacuum injection or wet press.

Application

CRYSTIC 5008 ST is recommended for the manufacture of mouldings for land transport and industrial applications.

Features & benefits

Properties	Benefits
Fast curing	Fast mould rotation, cost reduction
Wetting agents	Improved wet out of the reinforcement
High HDT	Good mechanical properties
Low exotherm reaction	Adapted for thick mouldings

Formulation

The following formulation is recommended in the case of curing at workshop temperature:

CRYSTIC 5008 ST	:	100 parts
Trigonox 44 B	:	1 to 2 parts
Accelerator NL 49P	:	1 to 3 parts

Trigonox 44 B is an Acetyl acetone peroxide from AKZO. Accelerator NL 49P is an accelerator with 1% of Cobalt also from AKZO.

Variant

CRYSTIC 5008 ST is also available in a shorter gel time version under reference CRYSTIC 5008 LGT.

Geltime

CRYSTIC 5008 ST should be allowed to attain workshop temperature (15°C - 20°C) before use. It only requires the addition of catalyst to start the curing reaction. The recommended catalyst system is Accelerator NL49P and Trigonox 44 B. Geltime at 40°C for 100 parts of resin catalysed with 2 ml of NL49 P and 1.5 ml of Trigonox 44 B is of 5.5 – 7.5 min.

Additives

The addition of fillers or pigments can adversely affect the vacuum infusion process and also the properties of the cured laminate. Please contact Scott Bader's Technical Service Department before using additives.

Post-cuisson

Satisfactory laminates for many applications can be made with CRYSTIC 5008 ST by curing at workshop temperature (20°C). However, for optimum properties, laminates must be post-cured before being put into service. The moulding should be allowed to mature for 24 hours at 20°C and then be post-cured for 3 hours at 80°C.

Typical properties

Property		Liquid resin
Appearance		
Viscosity @ 25°C Rhéomat at 37.35 sec -1	dPas	2-3.5
Specific Gravity @ 25°C		1.1
Geltime @ 40°C for 100g of resin + Trigonox 44B 1.5ml + NL 49 P 2 ml	Minutes	5.5-7.5
Volatile Content	%	39-43
Stability in the dark @ 20°C	Months	6

Property		Fully cured* resin (unfilled casting)
Barcol hardness (Model GYZJ 934 - 1)		45
Deflection temperature under load † (1.80 MPa)	°C	81
Water Absorption 24hrs @ 23°C	mg	20.5
Tensile strength	MPa	47.6
Tensile modulus	MPa	3884
Elongation at break	%	1.37
Specific gravity @ 25°C		1.2

Test according to ISO 527 and ISO 75 1MPa = 1MN/m² = 1N/mm² approximately 10.2 kgf/cm²

* Curing schedule - 24 h at 20°C , then 16h at 40°C.** Curing of 24h at 20°C then 3h at 80°C

▣ Curing schedule - 24h at 20°C, then 5h at 80°C, then 3h at 120°C

Packaging

CRYSTIC 5008 ST is available 225 kg drums, 1100 kg containers. Bulk supplies can be delivered by road tanker.

Storage

CRYSTIC 5008 ST 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.

Health and safety

Please see separate Material Safety Data Sheet.

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