

# CRYSTIC<sup>®</sup> RTR 4000PA

## RAPID TOOLING RESIN

### Introduction

Crystic RTR 4000PA is a new, improved rapid tooling resin which incorporates better handling properties, lower viscosity, improved shrinkage control and is catalysed with standard MEKP catalyst. Crystic RTR 4000PA is a thixotropic, filled, low profile resin for hand-lay mould making applications.

Crystic RTR 4000PA helps to achieve faster mould making and eliminate surface distortion, forming part of Scott Bader's new mould making system, which also comprises Crystic GC14PA and Crystic VE679PA skincoat.

### Applications

Crystic RTR 4000PA is designed for hand-lay applications and must be allowed to attain a minimum workshop temperature of 18°C before use (20°C to 24°C is recommended). It should be mixed thoroughly prior to use and requires only the addition of MEKP catalyst to start the curing reaction. The recommended catalyst is Catalyst M (or Butanox® M50), which should be added at 1% into the resin and thoroughly dispersed. The recommended resin-to-glass ratio for chopped strand mat glass reinforcement is at least 2.5-to-1 by weight.

The design, complexity and size of the mould will determine optimum reinforcement levels and thickness. At least 3 layers of 450gsm chopped strand glass mat, or equivalent, is required and should be applied in a single operation to achieve sufficient cure and low shrink performance. The material will undergo a distinct colour change from light brown to cream as the curing reaction takes place.

### Typical Properties

The following tables give typical properties of Crystic RTR 4000PA.

Properties		Liquid Resin
Appearance		Light brown
Viscosity at 25°C (ICI Cone and Plate)	Poise	4.5 - 6
Specific Gravity at 25°C		1.35
Volatile Content	%	25 – 30%
Geltime at 25°C (1% Catalyst M) **	Minutes	35-45
Stability (at less than 20°C in original container)	Months	3
Mechanical Properties		Laminate Properties
HDT***	°C	63
Tensile Strength*	MPa	114
Tensile Modulus*	MPa	8075
Elongation at Break*	%	2.0

\* Glass content 28%, laminate made with 3 layers of 450gsm CSM; 16hrs at 40°C post cure

\*\* Catalyst Butanox M50 can be used

\*\*\* Property of the cast resin; 16hrs at 40°C post cure

### Post Curing

Satisfactory laminates for many applications can be made from RTR 4000PA by curing at workshop temperature (20°C). However, for optimum properties and long term performance, moulds made with RTR 4000PA should be post cured before being put into service. The laminate should be allowed to cure for 24 hours at 20°C and then oven cured for 16 hours at 40°C.

**Additives**

Crystic RTR 4000PA is supplied ready to use. The addition of pigments or other materials can adversely affect the degree of cure and mechanical properties of the cured resin.

**Storage**

Crystic RTR 4000PA should be stored internally in its original container. It is recommended that the storage temperature should be between 15 – 20°C. Ideally, containers should be opened only immediately prior to use.

**Packaging**

Crystic RTR 4000PA is supplied in 25kg and 225kg containers.

**Health and Safety**

See separate Material Safety Data Sheet.

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