

# CRYSTIC<sup>®</sup> 911PASA

## Polyester resin for Casting

### Introduction

Crystic 911PASA is a pre-accelerated, orthophthalic unsaturated polyester resin with a low viscosity to accept the maximum level of filler particles.

### Applications

Crystic 911PASA has been developed specifically for the casting of small detailed castings, including collectables and figurines.

### Features and Benefits

- Suitable for both mechanical and hand mixing processes.
- Exhibits excellent wetting of filler particles to achieve the required filler loadings.
- Suitable to cast fine detailed small castings, which will have excellent dimensional stability.
- Finished castings have excellent painting and staining properties.

### Formulation

Crystic 911PASA should be allowed to attain workshop temperature (18°C - 25°C) before use. Crystic 911PASA is formulated for room temperature curing applications. It requires only addition of the correct amount of catalyst - Norox<sup>®</sup> KP9 catalyst or Norox<sup>®</sup> MEKP-925H to start the curing reaction. The recommended formulation is given below:

Products made with Crystic 911PASA are generally filled with different grades of powdered filler (e.g. calcium carbonate), typically 50% by weight. Higher amounts may be added but this may require the mould to be vibrated.

Pigment pastes can be mixed with Crystic 911PASA, when a specific colour is required.

**Table 1:** Formulation for room temperature curing of Crystic 911PASA.

<b>Component</b>	<b>Parts by weight</b>
Crystic 911PASA	100
Norox KP9 or Norox MEKP-925H	1.0-3.0
Powdered filler	100-200

The catalyst must be stirred thoroughly into the resin shortly before use. Curing should not be carried out at temperatures below 15°C. The resin, mould and workshop should be at, or above, 15°C before curing is carried out. Scott Bader (Pty) Ltd. will not be liable for problems caused by use at lower temperatures than recommended.

N.B. Peroxide catalysts are highly reactive and may decompose with explosive violence, or cause fires, if they come into contact with flammable materials, metals or accelerators. For this reason they must never be stored in metal containers or be mixed directly with accelerators.

### Pot Life

The temperature and the amount of catalyst control the gel time of the resin formulation and can be approximately determined from table 2.

**Table 2:** Geltimes in minutes for Crystic 911PASA at 25°C:

Temp	Norox KP9			Norox MEKP-925H		
	1 %	2 %	3 %	1 %	2 %	3 %
15° C		16	13			
25° C	15	10		17	10	8
35° C	9	5		10	5	4

Crystic 911PASA is formulated for use between 15°C and 30°C. It is recommended that workshop temperatures be maintained within this range. At temperatures above 30°C, the gel time even at 1% Norox KP9 can be so short that there is insufficient working time to fill the mould. Also, this can cause excessive exotherm which may cause mouldings to crack. In such cases, do not use less than 1% catalyst as this can cause undercure. Rather use Norox MEKP-925H .

At temperatures below 15°C, the curing reaction can be so slow that there is a high probability of undercure of the resin, even with over 3.0% Norox KP9. Do not use more than 3% catalyst as that will not speed up the geltime appreciably or result in a faster cure; in fact it can further retard the cure. Rather warm up the resin and working area so that it is above 15°C.

**Product Characteristics  
Typical Properties**

The following tables give typical properties of Crystic 911PASA.

**Table 3:** liquid Crystic 911PASA.

Property	Units	Nominal value
Colour / Appearance		Pinkish Mauve / Clear
Acid Value	mgKOH/g	21
Non Volatiles	%	58
Viscosity @ 25°C using Brookfield RVT @ 100rpm	cPs	300
Stability in the dark at 25°C	Months	3
Gelttime using 1% Norox KP9 @ 25° C	minutes	16

**Table 4:** Crystic 911PASA (unfilled) casting\*.

Property	Units	Nominal value
Barcol Hardness (Model GYZ 934-1)		14
Water Absorption 24 hours at 23°C	mg	33.5
Deflection Temperature under load† (1.80 MPa)	°C	40.4
Elongation at Break at 20°C	%	14.0
Tensile Strength	MPa	26.5
Tensile Modulus	MPa	1085
Flexural Strength	MPa	41.3
Flexural Modulus	MPa	1060
Impact-Charpy	KJ/m <sup>2</sup>	12.12

\* Curing Schedule. 24 hrs @ 20°C, 3 hrs @ 80°C

† Curing Schedule. 24 hrs @ 20°C, 5 hrs @ 80°C, 3 hrs @ 120°C



**Storage**

Crystic 911PASA 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.

**Packaging**

Crystic 911PASA is supplied in 25kg, 225kg and 1125kg intermediate bulk containers.

**Health and Safety**

Please see separate Material Safety Data sheet(s)

Technical Leaflet No 102.22SA  
August 2013

Before you use this information, kindly verify that this data sheet is the latest version.

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.

**SCOTT BADER COMPANY LIMITED**

Scott Bader (Pty) Ltd  
Reg. No. 93/00466/07  
1 Lubex Road,  
Hammarisdale  
P.O. Box 1539, Hillcrest,  
3650. South Africa  
Tel: +27 (0) 31 736 8500  
Fax: +27 (0) 31 736 8511

Gauteng  
Broadacres Business  
Centre  
Cnr Cedar Rd and 3<sup>rd</sup>  
Ave  
Broadacres, Sandton  
Tel: (011) 064 5673

KwaZulu Natal  
1 Lubex Road,  
Hammarisdale  
Tel: (031) 736 8500

Eastern Cape  
Freightpak Building  
Chevrolet St  
Markman Industrial  
Port Elizabeth  
Tel: (041) 409 783

Western Cape  
Unit 4B  
Tyger Lake  
Niagara Way  
Tyger Valley  
Cape Town  
Tel: (021) 914 6011

