

CRYSTIC PD9551 MP

Low profile Polyester Resin for tooling application

Introduction

CRYSTIC PD 9551 MP is a low profile polyester resin, designed to be used by Infusion. It is a hybrid formulation made of an unsaturated polyester resin and a low profile additive, creating separation of phase during the curing reaction. The dissimilar thermal expansion/contraction rates of the two components produce micro voids, which compensate for the bulk shrinkage of the unsaturated polyester resin.

Applications

CRYSTIC PD 9551 MP was developed for use in close mould process like VI, and it is particularly suitable for the manufacture of moulds by infusion.

Features & Benefits

The reduced shrinkage characteristics of **CRYSTIC PD 9551 MP** enable the manufacture of components with a high quality surface finish and good dimensional stability.

Formulation

CRYSTIC PD 9551 MP should be allowed to attain workshop temperature (18°C – 20°C) before use. It requires the addition of a catalyst and an accelerator to start the curing reaction.

N.B. Catalyst and accelerator should not be mixed directly together since they can react with explosive violence.

The recommended accelerator is Accelerator NL49P and the catalyst is Butanox M50 (MEKP) from AKZO Comapny

In order to achieve optimum surface quality using **CRYSTIC PD 9551 MP**, it is necessary to induce a significant in-mould exotherm. This will maximise the degree of cure, and minimise the late cure and subsequent shrinkage following de-mould. An exotherm temperature of at least 60°C should be reached during the curing of the resin. To reach this temperature thick laminate should be infused using the catalytic system shown in the table below. The geltime of **CRYSTIC PD 9551 MP** will be determined by the levels of accelerator, Inhibitor and catalyst used.

Gel Time 25°C (min)	Accelerator NL49P (%)	Inhibitor NLC10 (%)	Catalyst M50 (%)
40	2,5	-	2,5
60	2,5	0,1	2,5
100	2,5	0,2	2,5

Post-Curing

Before going into service the users must ensure that their mould is fully cured and stabilized, mainly if used in long run fast cycle production.

Tooling gelcoat and Skin coat

For the production of high quality tooling, we recommend the use of a Vinylester tooling gelcoat like **Crystic Gelcoat 15PA** in brush or spray version. The surface aspect will be even better by using a skin coat like **Crystic VE679PA** just behind the **Crystic Gelcoat 15PA**. **Crystic VE679PA** is an hybrid Vinylester resin. For more information about products properties and handling, please refer to the Technical data sheet of each product.

Reinforcements

The surface finish of components produced using **CRYSTIC PD 9551 MP** can be affected by the type of reinforcement used. Stitched materials such as Rovicore or Metycore tend to produce a better surface finish than continuous filament mat. The use of a surface veil or fleece material is recommended to further enhance the surface finish.

Typical properties

The following tables give typical properties of **CRYSTIC PD 9551 MP** when tested in accordance with the appropriate BS or BS EN ISO test method.

Liquid Properties

Property	Unit	Typical Results
Appearance	-	Hazy, Yellow
Viscosity C&P at 25°C	dPa.s	2,8
Specific Gravity at 25°C	-	1,1
Stability in the dark at 20°C	month	3

Fully cured resin Casting *

Property	Unit	Typical Results
Barcol Hardness (Model GYZJ 934-1)	-	27
HDT (1,8MPa) †	°C	94
Tensile Strength	MPa	28
Tensile Modulus	MPa	2300
Elongation at Break	%	1,6

* 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 PD 9551 MP should be stored under cover, in the dark, in the container in which it is supplied. Storage temperatures should stand between 10 - 25°C, and should never exceed 28°C. Storing the resin at above 28°C will modify the properties and will reduce the shelf life of the product. Ideally, containers should be opened only immediately prior to use.

Packaging

CRYSTIC PD 9551 MP is available in 25kg, 200kg and 1tonne containers.

Health & Safety

Please see separate Material Safety Data Sheet.

Eng - PD9551 MP - June 2016

All information on this data sheet is based on laboratory testing and is not intended for design purposes. Scott Bader makes no representations or warranties of any kind concerning this data. Due to variance of storage, handling and application of these materials, Scott Bader cannot accept liability for results obtained. The manufacture of materials is the subject of granted patents and patent applications; freedom to operate patented processes is not implied by this publication.

Scott Bader SA
65 rue Sully, 80044 Amiens Cedex 1 - France
Telephone: +33 (0)322 662 766 Fax: +33 (0)322 662 780
E-mail: composites@scottbader.fr

