

# CRYSTIC<sup>®</sup> 5513 NA

## Tough, Resilient Isophthalic Polyester Resin

### Introduction

Crystic<sup>®</sup> 5513 NA is a flexible, isophthalic unsaturated polyester resin. It is recommended for use in high performance applications where a resin is needed as a primer between metal surfaces and GRP. It can also be used to make moulding where flexibility is a requirement.

### Formulation

Crystic<sup>®</sup> 5513 NA should be allowed to attain workshop temperature (18°C- 25°C) before use. It requires the addition of a catalyst and an accelerator to start the curing reaction. Prior to adding any of the catalyst, accelerator E must be added. The recommended catalyst is Norox<sup>®</sup> KP9. The catalyst should be added at 2% into the resin, and thoroughly dispersed. The correct additions of accelerator and catalyst are listed in table 1:

Table 1: Recommended formulations for Crystic<sup>®</sup> 5513 NA :

Component	Parts by weight
Crystic <sup>®</sup> 5513 NA	100
Crystic <sup>®</sup> Accelerator E	2.0
Norox <sup>®</sup> KP9	1.0 – 3.0

### Application

This resin is designed to be used as a primer between a metal surface and a GRP laminate. It has a high elongation at break. This makes it suitable for applications such as primer for metal surfaces to be overlaminated with GRP. Its flexibility allows it to absorb stresses caused by differential coefficients of expansion, reducing the risk of delamination. It is also recommended where a flexible, tough resin is required.

### Typical Properties

The following tables give typical properties of Crystic<sup>®</sup> 5513 NA:

Table 2: Typical properties of Crystic<sup>®</sup> 5513 NA liquid resin when tested in accordance with BS2782:

Property	Units	Nominal value
Appearance		Clear, yellowish liquid
Brookfield viscosity @ 25°C, sp 3 @ 50 rpm	centipoise	960
Volatile Content	%	42
Acid Value	mg KOH/g	20
Stability in the dark @ 20°C	months	6
Geltime @ 25°C using 2% Andonox <sup>®</sup> KP9 and 2% Crystic <sup>®</sup> Accelerator E	minutes	9

Table 3: Typical properties of Crystic<sup>®</sup> 5513 NA fully Cured\* Resin (unfilled casting)

Property	Units	Nominal value
Barcol Hardness (Model GYZJ 934-1)		38
Deflection Temperature under load (1.80 MPa) †	°C	52
Water Absorption 1 day at 23°C	mg	20
Tensile Strength	MPa	68
Tensile Modulus	MPa	3000
Specific gravity		1.23
Elongation at Break	%	7

\* Curing Schedule - 24 hrs at 20°C, 3 hrs at 80°C

† Curing schedule - 24hrs @ 20°C, 5hrs @ 80°C, 3hrs @120°C

#### STORAGE

Crystic<sup>®</sup> 5513 NA 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 drums be kept in a horizontal position to avoid the possible ingress of water. Wherever possible, containers should be stored under cover.

#### PACKAGING

Crystic<sup>®</sup> 5513 NA is supplied in 25kg kegs, 225kg drums, and 1125kg intermediate bulk containers. Bulk supplies can be delivered by road tanker.

#### HEALTH AND SAFETY

Please see the applicable Material Safety Data Sheets, depending on the curing system used.

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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.

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