

## CRYSTIC 125 PA

### General Purpose Polyester Resin

#### Introduction

**CRYSTIC 125 PA** is a quality orthophthalic based unsaturated polyester resin developed specifically for the manufacture of GRP mouldings.

**CRYSTIC 125 PA** is a polyester resin of medium viscosity which meets the requirements of BS3532 : 1990, as a Type "A" resin. It can also be used for flat surface laminations.

Laminates made with **Crystic 125 PA** have good mechanical strength, high rigidity and impact resistance, and excellent dimensional stability. Its curing properties make it especially suitable for fast production processes when used with the recommended curing system.

#### FORMULATION

**CRYSTIC 125 PA** may be used in the following cold curing formulations:

Parts by Weight	Formulation
	No.1
Crystic 125 PA	100
Butanox M 50	1 – 2

#### Curing

**CRYSTIC 125 PA** requires only the addition of catalyst to start the curing reaction. It should be thoroughly dispersed in the resin. The accelerated resin without catalyst will usually remain usable at ambient temperature (25°C) for approximately three (3) months. Shortly before use, the correct amount of catalyst should be added and stirred thoroughly into the mixture. When catalyst is added to resin which has been accelerated for several days, the pot life may be shorter than that of freshly accelerated resin.

## Typical Properties of Liquid Resin

Parameters	CRYSTIC 125 PA
Viscosity at 25°C CPS (Brookfield LVF SP3, 60 RPM)	500
Specific Gravity at 25°C	1.10
Acid Value Mg KOH/g	21
Solid Content %	59
Appearance	Cloudy Pinkish
Aspect	Thixotropic
Stability (months) in the dark at 25°C	3
Gel time at 25°C Mins Using: Crystic 125 PA    100 gms Butanox M50        2 ml	17

## Typical Properties of Fully Cured Resins (Unfilled Casting)

Parameters	Unit	Crystic 125 PA
Barcol hardness (Model GYZJ 934 -1)		40
Water absorption 24 h at 23°C	mg	24
Deflection temperature under Load (1.80 MPa)	°C	69
Elongation at break at 20°C	%	2.0  similar to Glass reinforcement
Tensile strength	MPa	65
Tensile modulus	MPa	3500
Flexural strength	MPa	95

Flexural Modulus	Mpa	3800
Test methods as in BS 2782 : 1980		

## Typical Properties of a Crystic 125 PA Chopped Strand Mat Laminate

Cure			24 hrs at 20°C and 16 hrs at 40°C
Glass content	%	32	After 2 hrs boil in water (tested wet)
Tensile strength	MPa	122	117
Tensile modulus	MPa	8500	8400
Flexural strength	MPa	183	174
Flexural modulus	MPa	6300	5700
Elongation @ break	%	2.0	2.0
Made with 4 layer 450g/m <sup>2</sup> mat			
Test methods as in BS 2782 : 1980			

### Storage

It is recommended that storage temperatures should not exceed 25°C, and that containers should be stored away from direct sunlight and not be opened until they are required for use. The shelf life of the resin under these conditions is three (3) months.

### Packaging

**CRYSTIC 125 PA** is supplied in 225 kg steel containers. For the purpose of shipping, **CRYSTIC 125 PA** is class 3.0 in the IMCO Code (Page 3153)

### HEALTH & SAFETY NOTES

#### Unsaturated polyester resins and resin systems.

The most important protective measure are:

Correct storage

Stock rotation

Adequate workplace ventilation

Fume extraction in work areas where vapour concentrations may be excessive.

Use of fresh air masks in confined spaces or spray applications outside of spray booths

Work place monitoring of vapour concentrations

Good housekeeping

Systematic work routines

Competent personnel

Supervision, training and instruction

Fire precautions

Correct disposal

### **Points of Precaution**

Above certain levels monomer and solvent vapors can be hazardous to health and safety. The safety risks are associated mainly with fire and possible explosions. The risks to health come essentially from the build up of vapors in the workplace in excess of certain limits and the limits applicable to the users' country should be determined. In the UK these are known as Occupational Exposure Standard (O.E.S.) and reference should be made to the Guidance Note EH40 from the Health and safety Executive, currently in force and available from HMSO.

### **The Symptoms**

The symptoms of the more common vapors are similar, i.e. dry irritating throat, coughing, drowsiness and headache. Both liquids and vapors may cause skin irritation and dermatitis to susceptible personnel.

### **What to do**

Correct storage, stock rotation and handling will reduce safety risks. Sensible workshop lay out and systems of work and good general and local ventilation sufficient to control the concentration of vapor below the O.E.S.'s will severely limit or remove the health risks. Both health and safety risks can be substantially reduced by good housekeeping.

Proper procedures and equipment are important regarding respiratory matters especially when spraying is involved. Reference should be made to BS 4275 1974 and BS 4667.

Part 3 1974 for guidance in the selection of suitable respiratory protection or to standards appropriate to the user's country.

Contact with the skin must be avoided. Solvent resistant gloves and suitable protective clothing should be worn when handling resin solutions; the solvents have a defatting action that leaves the skin prone to irritation and dermatitis.

**General Comment**

The products in this leaflet have been used safely for many years where the products have been handled correctly by taking adequate notice of the limiting factors which, are presented in more detail in the current edition of our material safety data sheet.

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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