

CRYSTIC[®] 115 NT

General Purpose Unsaturated Polyester Resin

Introduction

Crystic 115 NT is a non thixotropic, non accelerated, orthophthalic unsaturated polyester resin.

Application

CRYSTIC 115 NT can be used for the production of filled castings or for reinforced laminates on flat moulds.

Features and benefits

Features	Benefits
Low viscosity	High filler content
Rapid hardening	Fast mould turn-round
Non accelerated	Total control of the gel time in the workshop

Approvals

Crystic 115 NT and its variants Crystic 115PA, 115 PA20, 115, are approved by the Bureau Veritas and the Lloyd's Register of Shipping.

Variants

CRYSTIC 115 is a thixotropic and non accelerated version. Variants are available with a minimum quantity order by contacting our technical department.

Formulation

The following cold curing formulation is recommended:

CRYSTIC 115 NT	100 parts
Catalyst M	1 to 2 parts
Accelerator E	1 to 4 parts

Catalyst M is a Méthyl Ethyl Kétone Peroxyde at 50% such as the Butanox M 50 from AKZO. Accelerator E is a cobalt octoate with 0.4% active cobalt. Catalyst and accelerator should not be mixed directly together as they will react with explosive violence.

Gel time

The ambient temperature, the quantity and the type of catalyst will control the gel time of the resin.

Parts of catalyst M for 100 parts of resin accelerated with 4% acc. E	1	2
Gel time at 15°C in min.	74	28
Gel time at 20°C in min.	48	19
Gel time at 25°C in min.	30	10

Curing should not be carried out at temperature below 15°C.

Additives

Since certain pigments, fillers or extra styrene may affect the properties of CRYSTIC 115 NT their effect should be evaluated before addition to the formulation.

Post curing

For most applications satisfactory result will be obtained by curing at room temperature (20°C). Some improvement in properties may be obtained by post-curing 16 hours at 40°C after release from the mould.

Typical properties

On liquid resin			
Viscosity at 25°C	115	dPas	4-5
Rhéomat at 37,35 sec-1	115 NT		3.3-3.9
Specific gravity at 25°C	115 / 115 NT		1.10
Acid index	115 / 115 NT	mg KOH/g	16-22
Volatile content	115 115 NT	%	40-43 38-42
Aspect	115 115 NT		Thixo clear
Stability in the dark at 20°C	115 / 115 NT	Month	6
Gel time at 25°C for 100g of resin +2g cata. M + 4g acc. E	115 / 115 NT	Minutes	9-11

On fully cured resin		
Barcol hardness (GYZJ 934-1)		*
Water absorption (24h at 23°C)	mg	14
Heat deflection temperature under load (1.8 MPa)	°C	65
Specific gravity at 20°C		1.2
Elongation at break	%	2
Tensile strength	MPa	62
Tensile modulus	MPa	3800

Test according to BS 2782:1980

1MPa = 1MN/m² = 1N/mm² = 10,2 kgf/cm²

* cured 24h at 20°C then 3h at 80°C except for the HDT where the schedule was 24h at 20°C then 5h at 80°C then 3h at 120°C.

Food contact

The results of the global and specific migration tests being below the maximum value set by the European Regulation (CEE n° 85/572, 90/128, 93/8) CRYSTIC ®115 NT may be used in contact with foodstuff. Mouldings which are to be used with foodstuffs should be cured with catalyst O or butanox LA. After release from the mould, laminates should be allowed to mature for 24 hours at workshop temperature (20°C). They should then be post cured for a minimum of 3 hours at 85°C.

The mouldings must be thoroughly wet steam cleaned for at least one hour before being put into service. If wet steam cleaning is not practical, and if the moulding is a vessel, it should be filled with hot water (60-80°C) containing a non perfumed detergent and left to stand for two hours. It should then be emptied thoroughly washed in several batches of clean hot water.

These precautions are essential to avoid the tainting of foodstuffs.

Packaging

CRYSTIC ®115 NT is supplied in 225 kg or 1100 kg containers. Bulk supplies can be delivered by road tanker.

Storage

CRYSTIC 115 NT should be stored under cover in the dark in the container in which it is supplied. Storage temperatures should not exceed 20°C.

Health and security

Please see Safety data sheet.

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