CRYSTIC® R 115 PA

General Purpose Unsaturated Polyester Resin

Introduction
CRYSTIC R 115 PA is a thixotropic, accelerated, orthophtalic unsaturated polyester resin.

Application
CRYSTIC R 115 PA can be used by hand lay up or by spray application for the production of most glass reinforced laminates.

Features and benefits

Features	Benefits
Low viscosity	High filler content
Rapid hardening	Fast mould turn-round
General purpose	Only one resin in the workshop for most applications

Approvals
CRYSTIC R 115 PA and its variants Crystic r 115 NT, r 115 PA 20, R 115, are approved by the Bureau Veritas and the Lloyd's Register of Shipping.

Variants
CRYSTIC R 115 PA PA 20 is a summer version with a longer gel time.

Formulation
The following cold curing formulation is recommended:

CRYSTIC R 115 PA	100 parts
Catalyseur M	1 to 2 parts

Catalyst M is a Méthyl Ethyl Kétone Peroxyde at 50% such as the Butanox M 50 from AKZO.

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 CRYSTIC R 115 PA	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 the affect properties of CRYSTIC R 115 PA 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 Rhéomat at 37,35 sec-1	115 PA / 115 PA 20	dPas	4-5
Specific gravity at 25°C	115 PA / 115 PA 20		1.10
Acid index	115 PA / 115 PA 20	mg KOH/g	16-22
Volatile content	115 PA / 115 PA 20	%	40-43
Aspect	115 PA / 115 PA 20		Thixo pinkish
Stability in the dark at 20°C	115 PA / 115 PA 20	Month	3
Gel time at 25°C for 100g of resin +2g cata. M	115 PA / 115 PA 20	Minutes	9-11 20-25

On fully cured resin		*
Barcol hardness (GYZJ 934-1)		50
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 PA may be used in contact with foodstuff. Mouldings which are to be used with foodstuffs should be cured with catalyst type Butanox M50. 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 clan hot water.

These precautions are essential to avoid the tainting of foodstuffs.

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

Storage
CRYSTIC R 115 PA 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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