CRYSTIC® 990PA

ABS Bonding Resin

Introduction
Crystic 990PA is a pre-accelerated, low viscosity, polyester resin containing styrene and methyl methacrylate.

Applications
Crystic 990PA has been developed for use as a filled system in reinforcing ABS acrylic lined baths and is designed for spray laminating.

Features and Benefits
The viscosity properties of Crystic 990PA enable it to accept high filler loadings whilst maintaining excellent spray characteristics. It forms a tenacious bond with ABS acrylic.

Formulation
Crystic 990PA should be allowed to attain workshop temperature (18°-20°C) before use. Calcium carbonate (or similar) filler should be added to the un-catalysed resin, at a level of 50% by weight, and thoroughly dispersed. The mix requires only the addition of a catalyst to start the curing reaction and the recommended catalyst is Catalyst M (or Butanox M50). The catalyst should be added at a level of 1%, based on the weight of resin in the filled mix, and thoroughly dispersed. A low shear mechanical mixer should be used, where possible.

Pot Life

Temperature	Pot Life with 1% Catalyst M
15ºC	10 minutes
20ºC	8 minutes
25ºC	6 minutes

The resin, mould and workshop should be at, or above, 15°C before curing is carried out.

Catalyst levels and temperature are critical in this application, as prolonged exposure to uncured resin will result in solvent attack on the ABS surface.

Additives
We do not recommend the addition of pigment paste to Crystic 990PA, due to the difficulty in obtaining specific colours in a filled mix. The addition of any pigment or other additives may affect the properties of the resin

Application
Filled Crystic 990PA and chopped glass should be spray applied to the ABS face of the moulded bath to a thickness of approximately 3mm. The resin should begin to gel within 10 to 15 minutes, to avoid solvent attack on the ABS surface.

Typical Properties
The following tables give typical properties of Crystic 990PA when tested in accordance with the appropriate EN, BS EN or ISO test methods.

Property		**Liquid Resin**
Appearance		Bluish, bit free
Viscosity at 25ºC, 92.5 sec^{-1}	poise	<0.8
Specific Gravity at 25ºC		1.1
Volatile Content	%	45
Stability at 20ºC	months	3
Geltime at25ºC using 1% Catalyst M	minutes	6
Property		**Fully cured* Resin (unfilled casting)**
Barcol Hardness (GYZJ 934-1)		39
Deflection Temperature under load † (1.80 MPa)	°C	49
Water Absorption 24hrs at 23ºC	mg	18
Tensile Strength	MPa	42
Tensile Modulus	MPa	2990
Elongation at Break	%	1.9

*Curing schedule - 24hrs at 20ºC, 3hrs at 80ºC
†Curing schedule - 24hrs at 20ºC, 5hrs at 80ºC, 3hrs at 120ºC

Post Curing
Satisfactory laminates for many applications can be made with Crystic 990PA by curing at workshop temperature (20°C). For optimum properties and long term performance, however, laminates should be post cured before being put into service. Mouldings should be allowed to cure for 24 hours at 20°C, and then be oven cured for 16 hours at 40°C.

Storage
Crystic 990PA should be stored in the dark in suitable closed containers. It is recommended that the storage temperature should be less than 20ºC where practical, but should not exceed 30ºC. Ideally, containers should be opened only immediately prior to use.

Packaging
Crystic 990PA is supplied in 25kg and 200kg containers. Bulk supplies can be delivered in 1 tonne containers.

Health & Safety
Please see separate Material Safety Data Sheet.

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