CRYSTIC® 232

Technical Data Sheet

Introduction

Crystic® 232 is a non-accelerated, non-thixotropic terephthalic resin. It is recommended for use in high performance applications, where superior thermal and/or chemical resistance properties are required. Crystic® 232 has been developed for application via filament winding, centrifugal casting and pultrusion.

Crystic® 232 is **UL1316 3rd edition approved** for the manufacture of underground fuel tanks.

Features and Benefits

Crystic® 232 has a very high HDT, making it suitable for applications where high heat resistance is required.

Faster line speeds can be achieved due to the high reactivity of Crystic® 232.

Formulation – Cold Curing

Crystic® 232 should be allowed to attain workshop temperature (18 - 25°C) before use. Crystic® 232 requires the addition of an accelerator and a catalyst to start the curing reaction. The recommended accelerator is Crystic® Accelerator G (1% cobalt solution in styrene) which should be added at 1 - 2% into the resin. The recommended catalyst is Butanox M50 (or equivalent medium reactivity MEKP catalyst), which should also be added at 1 - 2% into the pre-accelerated resin. The accelerator and catalyst should be added one at a time, thoroughly incorporating into the resin using a low shear mechanical stirrer where possible. (Please consult our Technical Support Department if other catalysts are to be used).

N.B. Catalyst and accelerator must not be mixed directly together since they can react with explosive violence.

Formulation – Hot Curing

The recommended cure system is Trigonox C + Perkadox 16 (or equivalent) which should each be added at 1% into the resin. The catalysts must be thoroughly dispersed into the resin using a low shear mechanical stirrer. Curing will take place in the temperature range of 80°C - 150°C. For many applications a curing temperature of 120°C is satisfactory. (Please consult our Technical Support Department if other catalysts are to be used).

Physical Data – Uncured

The following tables give typical properties of Crystic® 232 when tested in accordance with SB, BS EN or BS EN ISO test methods.

Property	Unit	Liquid Resin
Appearance	-	Pale
Viscosity, ICI Cone & Plate, 25°C	dPa.s	2
Viscosity, Brookfield Spindle 3 at 60rpm, 25°C	mPa.s	350
Geltime at 25°C using: 1.5% Crystic Accelerator G + 1.5% Butanox M50	Mins	17
Stability at 20ºC	Months	9

CRYSTIC®

Physical Data – Cured

Property	Unit	Fully cured* resin
Barcol Hardness (Model GYZJ 934- -1)	-	42
Water Absorption 24 hrs at 23ºC	mg	18
Deflection Temperature under load† (1.80 MPa)	ºC	115
Elongation at Break	%	3.1
Tensile Strength	MPa	75
Tensile Modulus	GPa	3.3

*Curing Schedule - 24 hours at 20°C + 3 hours at 80°C.
†Curing Schedule - 24 hours at 20°C + 5 hours at 80°C + 3 hours at 120°C.

Post Curing

Satisfactory laminates for many applications can be made with Crystic® 232 by curing at workshop temperature (25°C). However, for optimum chemical, water and heat resistant properties, laminates should be post cured before being put into service. Parts should be allowed to cure for 24 hours at 25°C and then be oven cured for 3 hours at 80°C or 16 hours at 40°C.

Recommended testing

It is recommended that customers test Crystic® 232 before use under their own conditions of application to ensure the required performance is achieved.

Storage

Crystic® 232 should be stored in its original container and out of direct sunlight. It is recommended that the storage temperature be less than 20°C where practical, but should not exceed 30°C. Ideally, containers should be opened only immediately prior to use.

Packaging

Crystic® 232 is supplied in 25kg metallic pails, 225Kg metallic drums or 1000kg IBC's. Bulk supplies can be set up.

Health and Safety

Please see separate Material Safety Data Sheet.

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