

PUR™

PolyUrethane Resin



Building
&
Transportation



Oil, Gas
&
Industrial



Offshore
&
Onshore



Water
&
Wastewater



PRODUCT DESCRIPTION

CTech-LLC® PolyUrethane Resin PUR™ is a semi-rigid, optically clear polyurethane resin. It has been specifically developed for applications utilizing Light Emitting Diodes (LED's), which require protection from harsh environmental conditions without any loss of clarity or performance. This unique system is used in applications ranging from automotive lights to underwater lighting as well as many other decorative and protective applications. The material is not suitable for thick sections above 50mm as the exotherm build up during cure will create voids.

ADVANTAGES

- Water white transparency.
- Low refractive index.
- Very low mixed system viscosity allowing intricate components to be potted.
- Excellent resistance to yellowing when exposed to UV light.
- High resistance to weather, acids and alkalis, water and mould growth.
- Fast cure.
- Extremely durable.
- Can be cut and shaped by hand or machined.
- High density results in sturdy, durable patterns (which can be walked on).
- Dimensionally stable (will not expand or contract).
- Compatible with epoxy, polyester and vinylester resin systems.
- Can be finished to a high standard with a range of surface coats.

TYPICAL USES

As well as use as a pattern making foam block this Polyurethane Foam Block is also intended for use (and approved for use) as a structural core material. Core materials can be used in GRP structures to increase stiffness for load bearing purposes, reducing weight, cost and laminating time. Our Polyurethane Foam Block carries Lloyds approval as a rigid core material for marine use making it also ideally suited for use as a composites core material in applications like boat decks and bulkheads where lightness, low resin uptake and cost are important factors.

INSTALLATION PROCEDURE

PREPARATION OF SUBSTRATE

CTech-LLC® PolyUrethane Resin PUR™ has been formulated to give little or no sedimentation if stored correctly (i.e. between 15 - 20°C). If sedimentation does occur then the material should be rolled or the sediment remixed with the use of a spatula or similar instrument. On no account should any material be removed if sedimentation has occurred and not been remixed. In Resin pack form sedimentation offers no problem since the sediment is re-mixed when the pack is mixed.

MIXING

It is important not to remove the aluminum outer wrapping until immediately before use. To open, cut the aluminum outer being very careful not to damage the inner pack. When in Resin pack form, the resin and hardener are mixed by removing the clip and moving the contents around inside the pack until thoroughly mixed. To remove the clip, remove both end caps, grip each end of the pack and pull apart gently. By using the removed clip, take special care to push unmixed material from the corners of the pack. Mixing normally takes from two to four minutes depending on the skill of the operator and the size of the pack. Both the resin and hardener are evacuated prior to packing so the system is ready for use immediately after mixing. The corner may be cut from the pack so that it may be used as a simple dispenser. When mixing, care must be taken to

avoid the introduction of excessive amounts of air. Automatic mixing equipment is available which will not only mix both the resin and hardener accurately in the correct ratio but do this without introducing air. Containers of Part A (Resin) and Part B (Hardener) should be kept sealed at all times when not in use to prevent the ingress of moisture. Bulk material must be thoroughly mixed before use. Incomplete mixing will result in erratic or partial curing.

TECHNICAL DATA

	Unit	PUR™
Density Part A	g/ml	1.01
Density Part B	g/ml	1.06
Viscosity Part A*	mPa s	1700
Viscosity Part B*	mPa s	50
Mixed System Viscosity*	mPa s	300
Usable Life **	min	17
Gel Time	min	22
Cure Time	hours	24
Storage Conditions	°C	Dry Conditions: Above 15°C, Below 35°C
Shrinkage	%	< 1%

* temperature at 23°C

** temperature at 20°C

CURED SYSTEM

	Unit	PUR™
Thermal Conductivity	(W/mK)	0.20
Cured Density	g/ml	1.02
Temperature Range	°C	-40 to +120
Max Temperature	°C	130
Dielectric Strength	kV/mm	11
Volume Resistivity	ohm-cm	1014
Shore Hardness	-	D46

APPLICATION

CTech-LLC® PolyUrethane Resin PUR™ is recommended for wall coating on the following to protect:

- against aggressive atmosphere.
- Concrete

- Rendering
- Stone
- Asbestos cement
- Steel
- Iron, etc.

STORAGE & SHELF LIFE

When storing under very cold conditions, the hardener may crystallize. If this occurs, simply warm (40°C) the container gently until all crystals have re-melted. Always refer to the Health & Safety data sheet before use.

CAUTION

The main hazard of the resin system is associated with the Part B (isocyanate hardener). This is based on isophorone diisocyanate (IPDI), which is categorized as toxic due to the effect on lung absorption when sprayed. Under normal circumstances however the danger is rather less because of the comparatively low vapor pressure of the isophorone diisocyanate at 20 - 25°C and the consequent comparatively low concentrations of the isocyanate vapor.

However, the regulations and codes of practice existing for isocyanates must be strictly adhered to in the handling of this hardener. These include the use of gloves, overalls and safety glasses or goggles, to avoid skin and eye contact. Wash away any skin contact with the hardener immediately using warm soapy water. DO NOT HEAT THE ISOCYANATE (Part B) or do anything likely to introduce a large number of fine droplets in the atmosphere.

CTech-LLC®

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IMPORTANT NOTE:

Before using any CTech-LLC® product, the user must review the most recent version of the product's technical data sheet, material safety data sheet and other applicable documents, available at www.ctech-llc.com.

WARRANTY:

CTech-LLC® warrants its products to be free from manufacturing defects. Buyer determines suitability of product for use and assumes all risks. Buyer's sole remedy shall be limited to replacement of product. Any claim for breach of this warranty must be brought within one month of the date of purchase. CTech-LLC® shall not be liable for any consequential or special damages of any kind, resulting from any claim or breach of warranty, breach of contract, negligence or any legal theory. The Buyer, by accepting the products described herein, agrees to be responsible for thoroughly testing any application to determine its suitability before utilizing.