

## PT 1002 A/B

### Description

PT 1002 is a two component, unfilled, clear, rigid system designed for surface mount encapsulation of LED chips in OPTO devices. PT 1002 provides excellent environmental protection and when casted becomes the lens portion of the device and displays excellent clarity and light transmissivity. PT 1002 is available in several transparent or diffused colors in addition to the standard clear. Excellent material for high temperature casting of discretes.

### Applications

1. Full cure in 8 hours – excellent for low mass tooling.
2. High purity system to minimize potential of corrosion to die and lead frame surfaces.
3. Low mixed viscosity for easy degassing and minimum bubble entrapment.
4. UV blocked.

### Properties

Property	Test Method	Unit	Typical Value		
			Part A Resin	Part B Hardener	Mixed
Chemical type			Epoxy	Anhydride	
Appearance	Visual		Blue liquid	Blue liquid	
Mix ratio, by weight			1.2 (+/- 0.02)	1.0 (+/- 0.02)	
Shelf life, 25°C	PEN 26	Month	18	18	
Pot life, 25°C	PEN 57	Hour			8
Viscosity, CAP 2000+ Viscometer, Cap-01, 25°C	ASTM D1824	cps	700-1600	250-500	360 - 815
Specific gravity, 25°C	ASTM D1475		1.18	1.21	
Refractive index, 25°C	Sodium D Line		1.5285	1.4860	1.518
Hardness	ASTM D2240	Shore D			89
Tg, DSC	ASTM D3386	°C			130 (+/- 20 °C)
CTE, TMA alpha-1 (60-100°C) alpha-2 (180-220°C)	ASTM D3386	in/in/°C			90 x 10 <sup>-6</sup> 240 x 10 <sup>-6</sup>
Volume resistivity	ASTM D257	Ohm-cm			5.0 x 10 <sup>15</sup>
Dissipation factor/ dielectric constant	ASTM D150	25 °C, 1KHz			0.010/3.1

### Guidelines for Use

1. Agitate the Part A resin and Part B hardener in their original bottles before use. Either of these parts may crystallize on storage at low temperatures. If crystallization occurs, then warm and stir the individual parts at 70°C to ensure homogeneity. Note: Warming not required if no crystallization occurs.
2. Mix Part A resin and Part B hardener in the ratio of 1.2: 1.0 by weight.
3. Remove the air bubbles in the epoxy mix by vacuum degas at 0.001 mbar (0.1 Pa) for 20 minutes.
4. The mixed epoxy can be dispensed with a syringe into mold cups.
5. Cure the epoxy at 135°C for 2 hours. Remove the hardened epoxy from the mold cups. Further cure the epoxy at 150-160°C for 8 hours.
6. Wear rubber gloves when handling epoxy resins and epoxy hardeners.

### Recommended Cure

Schedule	Temp.	Cure Time
Pre cure	135 °C	2 hours
Post cure	150-160 °C	8 hours

## Storage

Store both Part A resin and Part B hardener in a room temperature. They must be kept away from sunlight and bright room lights.

Part B is moisture sensitive. Close the seal and cap of the bottle tightly immediately after use.

## Packaging

- 1 kg plastic bottle
- 5 kg plastic bottle

## Environment, Health & Safety

This product is RoHS compliant. It does not contain any known carcinogenic, mutagenic or teratogenic components.

## Contact Information

Penchem Technologies Sdn Bhd  
(767120-A), 1015, Jalan  
Perindustrian Bukit Minyak 7,  
14100 Penang, Malaysia  
T: +604-501 5976, 77, 78, 79  
E: [enquiry@penchem.com](mailto:enquiry@penchem.com)  
W: [www.penchem.com](http://www.penchem.com)

*Revision 2. 13-Jul-18.FM*