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PT 542
Optoelectronic Epoxy

Description

PT 542 is a clear, water-white epoxy system suitable for encapsulation of high performance optoelectronic devices like indicator lamps. This system is cured with anhydride hardeners. It is recommended for encapsulation of LED chips and components, bonding of electronic parts, most plastics, ceramics and metals. It is designed for excellent performances in temperature cycling, high temperature storage, high humidity storage, minimal light output degradation, and outdoor weathering. It is enhanced for maximum resistance to yellowing from oxidation, high temperature degradation and sunlight. It is specially improved to provide good crack resistance from thermo-mechanical stresses

Applications

1. Encapsulation of high performance LED lamp devices.

Properties

Property	Test Method	Unit	Typical Value		
			Part A Resin	Part B Hardener	Mixed
Chemical type			Epoxy	Anhydride	
Appearance	PEN 10		Blue liquid	Blue Liquid	
Mix ratio, by weight			1.0 (+/- 0.02)	1.0 (+/- 0.02)	
Shelf life, 25°C	PEN 26	Month	12	12	
Pot life, 25°C	PEN 57	Hour			8
Viscosity, CAP 2000+ Viscometer, Cap-01, 25°C	Pen 44	cps	1000-2000	100-250	300 - 800
Specific gravity, 25°C	ASTM D1475		1.16	1.20	
Refractive index, 25°C	PEN 28				1.5110
Hardness	ASTM D2240	Shore D			90
Tg, DSC	ASTM D3386	°C			145 (+/- 10 °C)
CTE, TMA alpha-1 (60-100°C) alpha-2 (180-220°C)	ASTM D3386	m/m/°C			 90×10^{-6} 240×10^{-6}
Volume resistivity	ASTM D257	Ohm-cm			2.9×10^{-6}
Dissipation factor/ dielectric constant	ASTM D150	25 °C, 1KHz			0.007/3.10

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 1.0 : 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 125°C for 60 minutes. Remove the hardened epoxy from the mold cups. Further cure the epoxy at 135°C for 2 hours.
6. Wear rubber gloves when handling epoxy resins and epoxy hardeners.

Recommended Cure

Schedule	Temp.	Cure Time
Pre cure	120-125 °C	60 min
Post cure	125-135 °C	120 min

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

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Revision 4.04-Jul-18.LPH