

OP 685-10

UV Resistant Optoelectronic Epoxy

Description

OP685-10 is a water-white clear epoxy cured with anhydride hardeners specially designed for encapsulation of high performance devices like indicator lamps and PLCC. Possessing great resistance to UV and heat makes it suitable for RGB (tricolor) PLCC and lamps. It is also recommended to be used for bonding of electronics parts, most plastics, ceramics and metals. This system is formulated to be low-stress for maximum resistance to crack from thermal cycle operation, has great adhesion to most substrates, good resistance to humidity, minimal light output degradation and thermal yellowing. It provides good performance for outdoor application.

Properties

Property	Unit	Typical Value		
		Part A Resin	Part B Hardener	Mixed
Chemical type		Epoxy	Anhydride	
Appearance		Blue liquid	Yellow Liquid	
Mix ratio, by weight		1.0 ± 0.02	0.9 ± 0.02	
Shelf life, 25°C	Month	12	12	
Pot life, 25°C	Hour			2
Viscosity, CAP 2000+ Viscometer, 25°C	cP	900	450	820
Specific gravity, 25°C		1.10	1.20	1.15
Refractive index, 25°C		1.498	1.480	1.489
Hardness	Shore D			86
Tg, DSC	°C			125
Thermal expansion coefficient, alpha 1 (40-90)	ppm/K			67
Thermal expansion coefficient, alpha 2 (160-220)	ppm/K			171

Applications

1. Encapsulation of high performance LED lamps and PLCC devices.

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. However, warming and stirring of these individual parts at 70°C will ensure homogeneity.
2. Remove the air bubbles in the epoxy mix by vacuum degas at 0.001 mbar (0.1Pa) for 20 minutes.

3. For PLCC, preheat the PLCC lead frame at 150°C for 1 hour. Then dispense the epoxy into the PLCC lead frame.
4. Cure the epoxy at 120°C for 2 hours. Further cure the epoxy at 150°C for 2 hours.
5. Wear rubber gloves when handling epoxy resins and epoxy hardeners.
6. Wipe off any uncured epoxy spillage with tissue or dry cloth. Further cleaning may be achieved with tissue wetted with iso-propanol.

Recommended Cure

Schedule	Temp.	Cure Time
Pre cure	120°C	2 hr
Post cure	150°C	2 hr

Storage

Store both Part A resin and Part B hardener in a cool, dark place to prolong shelf life. 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

- 250 g plastic bottle
- 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 component.

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