

# DA 669

## Clear Underfill Epoxy

### Description

DA 669 is a clear, water-white epoxy system suitable for Underfill for IC Chip and Die Attach of high performance optoelectronic components like indicator lamps. This is a one part heat curable system. It is recommended for bonding of electronic parts, most plastics, ceramics and metals. It has been designed for excellent performances in temperature cycling, high temperature storage, humidity storage, light output degradation, and outdoor weathering performances and good UV resistance.

### Properties

Property	Test Method	Unit	Typical Value
Chemical type			Epoxy
Appearance	Pen 10		Clear liquid
Mix ratio, by weight			One component
Shelf life, -20°C	Pen 26	Month	6
Pot life, 25°C	Pen 26	Week	1
Viscosity, Brookfield RVT, 25°C	ASTM D2393	cP	1000
Hardness, cured 150°C/1hour	Pen 29	Shore D	91
Tensile strength	Pen	kgcm <sup>-2</sup>	562
Flexural strength	Pen	kgcm <sup>-2</sup>	773
Peel strength	Pen	kgcm <sup>-2</sup>	0.36
Volume resistivity, 25°C	ASTM D257	ohm.cm	5.0 x 10 <sup>15</sup>
Tg, DSC, cured 150°C for 1 hr	Pen 19	°C	145
Coefficient of thermal expansion ,alpha-1 ,alpha-2	Pen	mm <sup>-1</sup> °C <sup>-1</sup> mm <sup>-1</sup> °C <sup>-1</sup>	6.9 x 10 <sup>-5</sup> 2.0 x 10 <sup>-4</sup>

### Applications

1. Epoxy adhesive for electronic underfill applications
2. Low viscosity, good seepage adhesive for electronic protection
3. Die Attach for high performance LED indicators / applications.

### Guidelines for Use

1. Thaw the epoxy to room temperature (25°C) before use.
2. Dispense the epoxy by using a syringe.
3. Wipe off any excess uncured adhesive with a piece of dry cloth or tissue. Further cleaning may be achieved with tissue dabbed with isopropanol.alcohol (IPA).
4. Cure the epoxy by heating at 150°C for 1 hour.

### Recommended Cure

T(°C)	Gel time	Cure time
120°C	13 min	2 hr
150°C	2 min	1 hr

### Storage

Tightly close original container of unused product. Store below -20°C. Storing at lower temperatures down to -40°C may prolong shelf life beyond 6 months. However it may take longer time to thaw the product.

### Packaging

- 5 ml EFD syringe
- 10ml EFD syringe
- 30 ml EFD syringe

### 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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