



# DA-101R

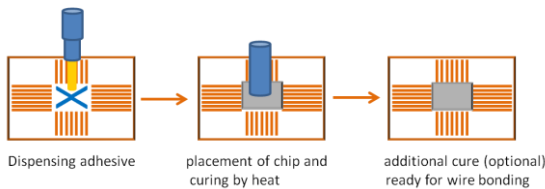
## Non conductive die-attach epoxy adhesive (TDS updated Jan-16-2017)

### PRODUCT DESCRIPTION:

- Base chemistry: epoxy
- One component adhesive ready for use, solvent-free, heat curing, thixotropic, red
- Non-conductive die attach epoxy adhesive

### PRODUCT USE:

Die attach process



### FEATURES:

- Epoxy, non-conductive, single component, working life of 48 hrs, fast thermal snap cure, low stress, very low chip warpage.

### GENERAL USAGE INFORMATION:

**Shipment:** adhesive is shipped in cold pack

**Storage:** After receipt, cold storage at 3 to 5 °C, or -20 °C or -40 °C in the original container is required

**Before use:** The cold adhesive needs to reach RT (23-25°C) before use. The container needs to sit at RT, adding heat is not allowed. Room temperature equilibration time is dependent on container size, but a 10-30 gram syringe equilibration time is approximately 30-60 minutes. Condensed water on the container must be removed prior to use

### SAFETY AND HANDLING

The uncured adhesive can be cleaned from apparatus with isopropyl alcohol (IPA), methyl ethyl ketone (MEK), or commercial alcohol based cleaning solution. Avoid direct skin and eye contact. Use only in well ventilated areas. Use protective clothing, **gloves and safety goggles**. Read [Material Safety Data Sheet](#) before handling.

### SHELF LIFE:

**-40 to -20°C:** 6 months

**3 to 5°C:** 3 months

**POT LIFE OR WORKING LIFE (20 - 25°C):** 48 hrs

### HEAT CURE SCHEDULES:

#### Snap cure schedules:

- 150 °C 30 to 60 sec
- or 130 °C 60 to 90 sec
- or 120 °C 90 to 180 sec
- or 110 °C 3 to 5 minutes

#### Low temperature cure schedules

- 85 °C 30 to 60 minutes
- 80 °C 60 to 90 minutes

Lower temperature cure can minimize warping.

The above cure schedules are guidelines. The actual heat cure time is dependent on the heating time of the bonded components. The heat time of the components must be added to the total cure time of the adhesive for the process

Process note: DA-101R is expected to be processed as a heat cure adhesive. However, UV light can be used to UV-fix DA-101R with LED-365 nm at 1,000 mW/cm<sup>2</sup> intensity for 5 to 10 sec.

### TYPICAL PROPERTIES

#### Uncured resin

Viscosity at 25 °C, mPa.s or cps (shear rate: 10/s)	20,000 to 24,000
Thixotropic index (shear rate: 1/s over 10/s)	5
Viscosity at 25 °C, mPa.s or cps (shear rate: 20/s) (Brookfield CP51, 5 rpm)	11,000 to 15,000
Thixotropic index (shear rate: 2/s over 20/s) (Brookfield CP51, 0.5/5 rpm)	4.2
Appearance of cured adhesive	Red
Density (g/mL)	1.2

#### Cured film

Outgas, weight % (per Telcordia GR-1221)	0.04
Outgas, weight % (per MIL-STD 883/5011)	0.08
Water permeability (g/m 24 hrs, 50 °C/95% RH, 75 µm film)	3 x 10 <sup>-4</sup>
Shrinkage (linear, %)	< 0.3
Hardness – Shore D	85-90
Glass transition temperature (DMA, °C)	165
Coefficient of thermal expansion (DMA)	
below Tg (x10 <sup>-6</sup> ), °C <sup>-1</sup>	40
above Tg (x10 <sup>-6</sup> ), °C <sup>-1</sup>	80

#### Physical properties tested at 25°C, 50% RH (ASTM D638)

Tensile strength, MPa	500
Elongation (%)	3
Young's Modulus, MPa	3,200
Operating temperature, °C	-60 to 200

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