

## CB 651 SMT Epoxy

### Description

CB 651 is a one-part red adhesive based on epoxy resins. It has excellent adhesion to most printed circuit boards and electronic components. It cures fast at high temperatures. It may be cured at 80°C or faster at 150°C. It has a long pot life and long shelf life even at room temperature of 25°C. It is loaded with glass beads as a spacer to give specific thickness for the bond line. The thixotropy has been adjusted to prevent sagging.

### Applications

1. SMT epoxy adhesive for bonding electronic components onto printed circuit boards.
2. General bonding for many plastics, ceramics and metals.

### Guidelines for Use

1. Thaw the epoxy to room temperature (25°C) before use.
2. Dispense the epoxy by using a syringe.
3. Cure the epoxy by heating at 150°C for 5min. Cure it at lower temperature will require a longer time.
4. Wipe off any excess uncured adhesive with a piece of dry cloth or tissue. Further cleaning may be achieved with tissue wetted with isopropanol.

### Properties

Property	Test Method	Unit	Typical Value
Chemical type	-	-	Epoxy
Appearance	Pen 10	-	Red paste
Mix ratio, by weight	-	-	One component
Glass bead, size	-	mil	2-3
Shelf life, -20°C	Pen 26	Month	12
Pot life, 25°C	Pen 26	Day	3
Viscosity(Brookfield CAP 2000)	Pen 44	cP	63000
Viscosity, Brookfield RVT, 25°C	Pen 11	cP	6,000,000
Thixotropy Index	Pen 44	cP	2.2
Density	Pen 61	g/cm <sup>3</sup>	1.224
Hardness	Pen 29	Shore D	85
CTE before Tg	Pen 64	ppm/K	57
CTE after Tg	Pen 64	ppm/K	172
Glass Transition Temperature	Pen 19	°C	103
Moisture Absorption(168 hours)	Pen 35	%	1.14
Water Absorption	Pen 52	%	0.43
Dielectric Breakdown	Pen 60	Volt/mm (μA)	3452(0.07)
Specific gravity, 25°C	Pen 14	-	1.22
Tensile strength	Pen 41	kgfcm <sup>-2</sup>	483
Shear strength	Pen 36	kgfcm <sup>-2</sup>	105
Water boil, wt gain, 1 hr	Pen 21	%	0.43
Tg, DSC, cured 150°C for 1 hr	Pen 19	-	124
Volume resistivity, 25°C	ASTM D257	ohm.cm	6.6 x 10 <sup>16</sup>
Dot profile	Pen 25	-	Peak

\* The values above are tested based on batch to batch basis. These values are not use as a basis for preparing specifications.

### Recommended Cure

Schedule	Temp.	Cure Time
A	150 °C	5 min
B	120 °C	20 min
C	100 °C	30 min

### Storage

Tightly close original container of unused product and store it below -20°C.

### Packaging

- 30 ml EFD syringe
- 30 ml IEI (Iwashita) syringe
- 300 ml Semco cartridge

### 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 6.3-Jan-18.TC