

# EP 1642

## High Thermally Conductive Epoxy Potting Adhesive

Typical Properties			
Property	Unit	Value	Test Method
Color / Component A		Grey	Visual
Color / Component B		Amber	Visual
Mixing Ratio	By weight	1:1	
Density (as mixed)	Gram /cc	2.6	ASTM D792
Viscosity as Mixed at 25°C	Pa.s	160	ASTM D2196
Property as Cured			
Color		Light Grey	Visual
Young's modulus	GPa	6.2	DMA
Thermal Conductivity	W/m-K	1.5	ASTM D5470
Heat Capacity at 25°C	J/g-K	1.0	ASTM D1269
Dielectric Strength	Volt/mil AC	> 500	ASTM D149
Volume Resistivity	Ohm-cm	> 10E+12	ASTM D257
Coefficient of Thermal Expansion	ppm/C	90 (@ > Tg) 22 (@ < Tg)	IPC-TM-650
Adhesion (Al/Al lap shear)	Psi	> 1800	ASTM D1002
Tg	°C	85	DMA
Temperature Usage	°C	-80 to 200	TGA
Cure Profile			
Cure at 85°C	Min	120	DSC
Cure at 125°C	Min	30	DSC
Pot / Work Life at 25°C	Min	30	Viscosity double

These figures are only intended as a guide and should not be used in preparing specifications.

### Processing Instruction

**Important!** Only components A and B with the same lot number may be processed together! For the package in a container (not in a cartridge), to ensure homogeneity of the material, the components must be stirred thoroughly before they are removed or processed in order to uniformly disperse any fillers that might have settled during storage. For long-term storage, it is recommended to store the material in -40°C freezer to prevent filler from settling.

We recommend running preliminary tests to optimize conditions for the particular application. Comprehensive processing instructions can be obtained by contacting directly to United Adhesives, Inc.

### Storage

EP 1642 has a shelf life of at least 6 months when stored below 35°C in the originally sealed container. The 'Best use before end' date of each batch appears on the product label. Storage beyond the date specified on the label does not necessarily mean that the product is no longer usable. In this case however, the properties required for the intended use must be checked for quality assurance reasons.

### Safety information

General hygiene regulations should be observed. Comprehensive instructions are given in the corresponding Material Safety Data Sheets. They are available on request from United Adhesives, Inc.

### Characteristics

EP 1642 is an epoxy-based high thermally conductive structural bonding adhesive for electronic applications. It is a two-component, flowable, addition-curing system that cures at room temperature or elevated temperature to provide strong bonding to metals such as aluminum, copper, and FR4 based printed circuit board with excellent thermal conductivity. The cured material also has very low CTE for better thermal cycle performances. EP 1642 is dispensable.

### Special Features and Benefits

- High thermal conductivity & ambient curable
- High temperature stability
- Low CTE for stress compliance
- Low bleeding, low volatile
- Low ionic content

### Typical Applications

- Aerospace electronics
- Automotive electronics
- Semiconductor and Telecommunications
- Thermally conductive potting
- Bonding of power devices to heat sinks
- Thermally conductive structural bonding
- Thermally conductive vibration

EP 1642 has a shelf life of at least 6 months when stored below 35°C in the originally sealed container. For non-slump version, please select United Adhesives' product EP1643. For soft version, please select United Adhesives' Thermobond adhesives.