United Adhesives

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ET1655

High Thermally Conductive Epoxy Adhesive

Typical Properties

Property	Unit	Value	Test Method
Color / Component		Off White	Visual
Filler Type		Alumina	
Density	Gram /cc	2.5	ASTM D792
Viscosity at 25°C @ 5 rpm	cP.s	14,000	ASTM D2196
Property as Cured			
Color		Off White	Visual
Hardness	Shore D	76	ASTM D2240
Thermal Conductivity	W/m-K	2.0	ASTM D5470
Heat Capacity at 25°C	J/g-K	1.0	ASTM D1269
Dielectric Strength	Volt/mil AC	> 550	ASTM D149
Volume Resistivity	Ohm-cm	> 10E+13	ASTM D257
Coefficient of Thermal Expansion	ppm/C	79 (@ > Tg) 24 (@ < Tg)	IPC-TM-650
Adhesion (Al/Al lap shear)	Psi	> 1200	ASTM D1002
Tg	°C	150	DMA
Temperature Usage	°C	-80 to 180	TGA
Cure & Storage			
Cure at 125°C	Min	90	DSC
Cure at 175°C	Min	20	DSC
Pot Life at 25°C	hr	32	Viscosity double
Shelf Life at – 40°C	Month	12	ITM
Shelf Life at – 15°C	Month	3	ITM

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

Characteristics

ET1655 is an epoxy-based high thermally conductive structural bonding adhesive for electronic applications. It is a one-component, flowable, heat-curing system that cures 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. ET1655 is dispensable.

Special Features and Benefits

- High thermal conductivity
- High temperature stability
- Low CTE for stress compliance
- Low bleeding, low volatile
- Low ionic content
- ET1655 can have pre-added 7 mil glass beads for thickness control if required

Typical Applications

- Aerospace electronics
- Automotive electronics
- Semiconductor and Telecommunications
- Between high heat power device and heat sink
- Thermally conductive structural bonding
- Thermally conductive vibration

Processing Instruction

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.

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

ET1655 has a shelf life of at least 12 months when stored at -40 °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.