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AE 6017

Anisotropic Electrically Conductive Adhesive

Typical Properties			
Property	**Unit**	**Value**	**Test Method**
Color / Component		Brown	Visual
Particle and Surface		Ag-Cu	EDX
Particle size (um)	Micron	~ 6	SEM
Viscosity at 25°C	cP.s	25,000	ASTM D2196
Thixtropic Index		3.0	ASTM D2196
Density	Gram /cc	1.3	ASTM D792
Weight loss in cure	Weight %	< 0.5 %	TGA
Property as Cured			
Color		Brown	Visual
Hardness (25 °C)	Shore D	85	ASTM D2240
Contact Resistivity (z direction, 24°C)	Ohm/mm^2	< 0.1	ASTM D257
Volume Resistivity (x, y direction, 24°C)	Ohm-cm	> 10E+12	ASTM D257
Coefficient of Thermal Expansion	ppm/C	< 160 (above Tg) < 55 (below Tg)	IPC-TM-650
Adhesion (Al/Al lap shear)	Psi	> 800	ASTM D1002
Tg	°C	125	DMA
Thermal Stability	°C	– 40 to 180	TGA
Cure Profile			
Cure at 150 °C	Second	30	DSC
Cure at 180 °C	Second	4 to 6	DSC
Pot / Work Life at 25°C	Day	> 4	Viscosity double
Shelf Life	Month	6 @ -15°C	ITM

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

Characteristics

AE 6017 is a one component, anisotropic, electrically conductive epoxy adhesive designed for electronic applications. After a rapid snap-cure at elevated temperatures in seconds with thermo-compression, it forms a structural bonding adhesive with conductivity only in z-direction while remaining insulators in the x,y-plane. This is achieved by a delicate formulation of electrically conductive filler in the adhesive matrix. AE 6017 is designed for flexible circuit applications, flip chip attachment, and fine pitch assembly. AE 6017 is dispensable and printable.

Special Features and Benefits

- Anisotropic electrical conductivity (z-direction)
- Extremely rapid cure at elevated temperature
- Long pot life in room temperature
- Strong bonding strength
- High temperature stability
- Low bleeding, low volatile

Typical Applications

- Flip Chip Interconnection (COB, COG, smart card, etc.)
- TAB interconnections
- Lead terminations and connections
- Fine pitch assemblies for electronics
- Flat panel displays, camera modules, mobile phones, and direct access sensors
- Semiconductor packages and RFID tags
- Micro-electronics
- Automotive electronics

Processing Instruction

The z-direction electrical conductivity is based on the contact of the conductive filler with substrate and bump. Heat and pressure are used to trap the conductive particles between bumps and pads of the substrates.

We recommend running preliminary tests to optimize the conditions of heating temperature and compressing pressure for the particular application. Comprehensive processing instructions can be obtained by contacting directly to United Adhesives Inc.

Storage

AE 6017 has a shelf life of at least 6 months when stored below -15°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

Comprehensive instructions are given in the corresponding Material Safety Data Sheets. They are available on request from United Adhesives, Inc.