

ZTERIAL 615

Technical Data Sheet For Reference Only

ZTERIAL 615 is a single-component, electrically conductive, thixotropic silver-filled epoxy adhesive designed for die attach and SMD attach in hybrid microelectronic packages. It features a smooth, flowing consistency suitable for conventional processing techniques such as dispensing and screen printing.

TYPICAL PROPERTIES OF UNCURED ADHESIVE

Technology	Epoxy
Appearance	Silver
Application	Die attach
Filler Type	Silver
Number of Components	Single
Viscosity @25°C, cPs, Speed 10 rpm	20000
Thixotropic Index	4
Work Life @ 25°C, days	14
Storage Life @-40°C, days	365

TYPICAL CURING PERFORMANCE

Cure Schedule	1 hour @150°C
Minimum Alternate Cure	2 hours @125°C



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TYPICAL PROPERTIES OF CURED ADHESIVE

Glass Transition Temperature (Tg), °C	> 100
Degradation Temperature, °C	425
Weight Loss @ 200°C, %	0.1
@ 300°C, %	0.3
Coefficient of Thermal Expansion	
Below Tg, ppm/°C	35
Above Tg, ppm/°C	135
Extractable Ionic Content, ppm:	
Chloride (Cl-)	<15
Sodium (Na+)	<5
Potassium (K+)	<5
Die Shear Strength :	
2 x 2 mm Si die	
on Ag/Cu LF @ 25 °C, Kg	>20
Lap Shear Strength @ 25°C, psi	>1500
Electrical Properties	
Volume Resistivity, ohms-cm	<0.00006
Thermal Conductivity, W/(m-K)	2.8

SUGGESTED APPLICATIONS

Semiconductor IC Packaging

- Designed for die attachment to leadframes; compatible with both silicon (Si) and MEMS chips. It supports 260°C lead-free reflow processes and meets JEDEC Level I packaging standards.
- Excellent die attach performance for small chips such as GaAs, LEDs, and diodes.
- Resistant to 260°C green reflow processes and capable of withstanding hermetic lid-seal processes near 300°C.

- Stable under organic burn-in conditions up to 150°C for 1000 hours.
- Compatible with JEDEC Level II die-attach packaging for die-paddles and lead-frames.
- A widely adopted solution in opto-packaging, hybrid circuits, and bonding to diverse substrates such as kovar, ceramics, and BT materials.
- Lower stress and lower temperature cure.
- Compliant formulation designed to reduce cracking when bonding large components or substrates.
- Provides excellent adhesion to ceramic, Si, Au, kovar, Au/kovar, and AgPd.
- Adaptable to both automatic dispensing and screen printing.

GENERAL INFORMATION

Thawing Instructions

1. Allow container to reach room temperature before use.
2. Do not open the container until the contents have fully reached ambient temperature. Remove any moisture that has formed on the thawed container prior to opening.

Storage

Store the product in its unopened container in a dry environment. Optimal storage temperature: -40 °C.

Application Notes

1. Dispensing: Compatible with pressure/time systems, auger screws, fluid jetting, and G27 needles for single-component dispensing.
2. Screen Printing: Optimized for use with metal mesh screens >200 mesh, and polymer squeegee blades rated at 80D hardness.
3. Stamping: Capable of producing small dots as small as 6 mil in diameter.
4. Curing Methods: Supports various curing techniques including box ovens, SMT-style tunnel ovens, heat guns, hot plates, IR, convection, and induction coils.
5. Customization: Product modifications available to enhance viscosity, appearance, flexibility, and thermal conductivity.

Disclaimer Notes:

The Technical Data Sheet provided herein is intended for reference only. The information and recommendations regarding the use and application of this product are based on our knowledge and experience. Due to the wide range of potential applications and varying processing conditions beyond our control, ZTERIAL makes no guarantees regarding the product's suitability for your specific manufacturing processes, conditions, or intended results. We strongly recommend that you carry out your own independent tests to verify the product's suitability for your particular use. It is the user's sole responsibility to assess whether any production methods or practices mentioned are appropriate for their purposes and to take all necessary precautions to ensure the safety of personnel and property when handling and using the product.