

Product Data Sheet

Product

MCT 3715-2SE-HA



Extremely Low MSL High Adhesion Conductive Die Attach Adhesive

This extremely low moisture absorption adhesive, MCT 3715-2SE-HA has passed >1 year at 30°C/85%RH and should be able to be used in MSL1 packaging. A Military and Medical Microelectronic die attach adhesive, MicroCoat 3715-2SE-HA is a 100% solids one part conductive thermosetting adhesive designed primarily for die attaching from large or very small die with mismatched thermal expansions in Military, Medical, “down-the-hole” hybrids, optoelectronics, automotive sensors, etc. A much improved higher temperature resistant material than its “Sister” formulations (MCT 2-0404 Series) this material is a thixotropic paste with a 5-6 day shelf life at 25°C that may be applied by stencil printing or syringe dispense. It is 100% solids, and possesses good handling and storage properties. This silver-filled conductive die attach adhesive is designed to bond ICs and components to advanced substrates such as ceramic, PBGAs, CSPs, LCP, and array packages with *virtually no bleed*. Hydrophobic and stable at high temperatures, the adhesive produces a void-free bond line with excellent interfacial adhesion strength to a wide variety of organic and metal surfaces including solder mask, BT, FR4, LCP, polyimide, gold plate over Ni or Pd, Kapton and Mylar. From high temp testing, high temp aging, and thermal shock from -75C to +175C this adhesive is by far the best the industry has ever seen. Low resistivity, TC of >8W/mK standard without sacrificing adhesion and very low outgassing per ASTM E595. This material is formulated to provide high cohesive energy, adhesive strength, *stress absorbing for large die*, and elongation at break. Short term at >300°C (2-3 minutes for Pb free reflow) if cured at 150°C for 60 minutes

Composition Properties

Filler Contents:	83%-85% Silver
Viscosity:	24K cps @ 10 RPM Brookfield HBT CP51 cone and plate.
Thixo Ratio at above viscosity parameters	3.80
Average Particle Size:	<.70 – 1.25 microns

Typical Cured Properties² at Minimum Bond Line of 32 Microns

Volume Resistivity:	<0.00068 Ω-cm
Thermal (Interfacial) Conductivity	7.5 – 8.1 W/mK
T _g °C	150
CTE below T _g in/in/°C	24X10 ⁻⁶
Above T _g in/in/°C	44X10 ⁻⁶
Die Shear Kg (150C 1 hour cure)	>25.6 @ RT
Die Shear Kg (150C 1 hour cure)	>20.46 after 200C assembly operation
Die Shear Kg (150C 1 hour cure)	>18.94 after 280C assembly operation (Eutectic component attach)
Shore “D” Hardness	75 – 80
Post Cure Ionics 883/5011.3.8.7	Cl=<15ppm, Na+=<4.8ppm, K+=<1.9ppm
Modulus:	
@65C =	8720 MPa;
@25C =	7460 MPa;
@150C =	1170 MPa;
@250C =	745 MPa

Processing Procedures: Mixing: The material should be lightly stirred prior to use if used from a jar. Not required if in a syringe.

Application: The material may be applied by screen or stencil printing or syringe dispense. **Curing:** Cure at 150°C for 60 minutes. Optimum conditions will vary depending upon application and will need to be determined experimentally. Alternate cure schedule is 2-3 hours at 80°C - 125°C depending on substrate.

Storage MicroCoat 3715-2SE-HA should be stored in sealed containers away from heat or flames. It has a shelf life of 8-10 days at a storage temperature of 25°C, 4-6 months at -10°C or 9-12 months at -40°C.

DO NOT STORE AT TEMPERATURES BELOW -40°C. Material may be returned to refrigerator/freezer after using partial syringes or jars if within the shelf life of the material.

Packaging: 3cc, 5cc, and 10cc syringes. **Shipping:** Product is shipped FedEx overnight only in Styrofoam Freezer Packs - Monday – Thursday only in the US and Monday only to Europe, So. America or Asia.

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