

Product Data Sheet

Product

MCT SD0802-31DA



Extremely Low MSL *No Bleed Conductive Die Attach Adhesive

This extremely low moisture absorption adhesive, MCT SD0802-31DA has passed >1 year at 30°C/85%RH and should be able to be used in MSL1 packaging. This material also contains anti-bleed resin technology to prevent loss of resin system adhesion that is critical to wirebond and packaging performance. . ****MCT SD0802-31DA conductive adhesive will give you <75um epoxy ring sitting uncured for 2 hours and <125um when cured for 1 hour at 150C.*** A Military and Medical Microelectronic die attach adhesive, MicroCoat SD0802-31DA is a 100% solids one part conductive thermosetting conductive 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 posses’ 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:	87% Silver
Viscosity: Thixotropic	20-35 Kcps @ 10 RPM Brookfield HBT CP51 cone and plate.
Thixo Ratio at above viscosity parameters	~1.89 – 2.30
Average Particle Size:	.70 – 1.25 microns

Typical Cured Properties

Volume Resistivity:	.00015 - .00008 mohms
Thermal Conductivity	7.1-7.9 W/m-K
CTE Alpha 1 ppm/°C	50
CTE Alpha 2 ppm/°C	200
Tg°C	117
Die Shear psi	>9500
Shore “D” Hardness	75 - 80
Post Cure Ionics 883/5011.3.8.7	Cl=<6ppm, Na+=<3.3ppm, K+=<1.1ppm
Teflon Flask 5 gm sample using 20-40 mesh, 50 gm DI H ₂ O, 100°C for 24 hours	
Modulus:	
@65C = 5595 MPa, @25C = 5510 MPa, @150C = 925 MPa, @250C = 310 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 printing or syringe dispense

Curing: Cure at 150°C for 45 minutes. Optimum conditions will vary depending upon application and will need to be determined experimentally. Cure for fine lines and dots <100um is 80C for 30 min; 120C for 30 min; 150C for 60 min. See chart below for best adhesion cure schedule

Storage MicroCoat SD0802-31DA should be stored in sealed containers away from heat or flames. It has a shelf life of 5-6 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, 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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