

Product Data Sheet

Product

MCT 2-0404-3315



Conductive Die Attach Adhesive

A Military and Medical Microelectronic Devices die attach adhesive, MicroCoat **2-0404/33-HTC**, a 100% solids one part conductive thermosetting conductive epoxy designed primarily for die attaching large or very small die with mismatched thermal expansions in Military, Medical, “down-the-hole” hybrids, optoelectronics, automotive sensors, etc. A “Sister” formulation to MCT’s 2-0404/33 this material is a thixotropic paste which may be applied by stencil printing or syringe. 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, Kapton and Mylar. 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:	85% Silver
Viscosity:	25-35 K 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:	<0.00055 Ω-cm
Thermal (Interfacial) Conductivity	2.67 W/mK
T _g °C	190
CTE Below T _g ppm°C	62
Above T _g ppm°C	160
Die Shear Kg (150C 1 hour cure)	>19.7 @ RT
Die Shear Kg (150C 1 hour cure)	>14.46 after 200C assembly operation
Die Shear Kg (150C 1 hour cure)	>13.86 after 280C assembly operation (Eutectic component attach)
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 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 2-0404 should be stored in sealed containers away from heat or flames. It has a shelf life of 7-9 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.

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 or Asia.

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