

# Product Data Sheet



RoHS/WEEE  
and Halogen Free



## Product

### MCT 1107-2DA

## Non-Conductive \*No Bleed Die Attach Adhesive

### A High Performance Single Component, Non Frozen Non-Conductive Epoxy for Die Attach

MCT 1107-2DA is a non-frozen die attach adhesive with a working life of 6 months at 25C. A large shipping cost saving and an equipment downtime saver that is an exceptional savings

MicroCoat 1107-2DA features a unique balance of high performance properties including both high shear and peel strengths along with convenient handling and high/low temp properties. This is a single component system formulated to cure at elevated temperatures. **\*MCT 1107-2 non-conductive adhesive will give you <75um epoxy ring sitting uncured for 2 hours and <125um when cured for 1 hour at 150C.** This is a one part thermosetting non-conductive epoxy designed primarily for die attaching semiconductors and surface mount devices in military, "down-the-hole" hybrids, optoelectronics, automotive sensors, transducers, etc. The material is a thixotropic paste which may be applied by screen printing or syringe. It is 100% solids, and possesses good handling and storage properties. This Al<sub>2</sub>O<sub>3</sub> filled non-conductive die attach adhesive is designed to bond ICs and components to advanced substrates such as ceramic, PBGAs, CSPs, plated lead frames, and array packages with <120um epoxy bleed-out. 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, FR, polyimide, gold, Kapton and Mylar. This material is formulated to provide high cohesive energy, adhesive strength, and elongation at break.

Solids content, %.	100%
Filler;	Alumina
Typical filler particle size of Al <sub>2</sub> O <sub>3</sub>	9.5um
Viscosity @ 25°C, cps	~60,000
Color;	off white/yellow
Tensile shear, aluminum to aluminum, 25°C, psi	936
Tensile strength, 25°C, psi	6178
Flexural strength, 25°C, psi	265
Compressive strength, 25°C, psi	16320
Elongation	0.81%
Shore hardness (Shore D)	85D
Tensile modulus at Break , 25°C, psi	930
Maximum total mass loss (TML)	NA
Maximum collected volatile condensable material (CVCM) deposition	NA
Tg Cured at 125C 30 mins:	130°C,
CTE	
CTE below the Tg	35 ppm
CTE above Tg	170 ppm
Thermal Conductivity	.32 w/mK
Maximum cure temperature –	150C
Max time at cure temperature	30-60 min at adhesive line
Service temperature range	NA
Short Term High Temp	NA
Shrinkage	<0.04%
Service Temp oC	-50°C to 150°C
Shelf life unopened containers @ 25°C	6 months from DOM
Available in	3cc, 10cc, 30cc Syringes

Die Shear (psi) 25 mil<sup>2</sup> Si Die @RT >6000  
25 mil<sup>2</sup> Si Die @150C >4000

Moisture Absorption (Passes MSL1)

1. Moisture Absorption, 85/85 168 hrs, 0.082% by weight
2. Water vapor transmission, 40C, 95% humidity, grams/foot<sup>2</sup>/.250" thick 0.015 grams

Outgassing per Mil-Std-883/5011 ASTM E595 Passes  
Post Cure Ionics Mil-Std-883/5011.3.8.7 Cl=<6ppm, Na+<3.3ppm, K+<1.1ppm

**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 stencil printing or syringe dispense

**Curing:** Cure @ 150C for 30-60 minutes. Optimum conditions will vary depending upon application and substrate material and will need to be determined experimentally. This material will fully cure using most Pb free cure schedules of 250C -260C.

**Storage** MCT 1107-2DA should be stored in sealed containers away from heat or flames. It has a **shelf life (pot life) of 6 months at a storage temperature of 25°C**; up to 12 months if stored at -20C. Material **may** be returned to freezer after using partial syringes or jars.

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