

ABLEBOND® 84-1LMIT
HIGH THERMAL CONDUCTIVITY CHIP
ATTACHADHESIVE
Mil Std 883; Method 5011 Certified

TYPICAL PROPERTIES	TEST METHOD	DESCRIPTION
Viscosity @ 25°C: 50,000 cps	PT-42	Ablebond® 84-1LMIT electrically conductive epoxy adhesive exhibits a thermal conductivity three times higher than other silver filled epoxies.
Filler: Silver		
Work Life @ 25°C: 2 weeks	PT-54	This high purity, low out-gassing adhesive meets the supplier requirements of Method 5011 when cured 2 hours at 150°C. See reverse side for results to Method 5011.
Cure Condition: 1 hour @ 150°C		
Cure Option: 2 hours @ 125°C		Ablebond 84-1LMIT adhesive is solvent-free, making it suitable for application by syringe dispensing or screen printing (200-mesh). For applications using a finer mesh screen, please refer to Ablebond 84-1LMIT1 adhesive.
Die Shear Strength (80 mil ² IC)	MT-4	
Au to Au @ 25°C: 6,000 psi		
Volume Resistivity: 0.00007 ohm-cm	PT-46	
Ionic Data	CT-13	
Chloride: 30 ppm		
Sodium: 10 ppm		
Potassium: 2 ppm		
Water Extract		
Conductivity: 10 µmhos/cm	CT-6	
pH: 5.5		
Glass Transition Temperature (Tg): 103°C	MT-9	
Coefficient of Thermal Expansion		
Below Tg: 52 x 10 ⁻⁶ in/in/°C	MT-9	
Above Tg: 20 x 10 ⁻⁵ in/in/°C		
Weight Loss @ 300°C: 0.19%	PT-20	
Thermal Conductivity @ 121°C: 2.5 BTU ft ⁻¹ hr ⁻¹ F ⁻¹	PT-40	
Storage Life @ -40°C: 1 year	PT-13	

The figures shown above are typical values only.

*Our service engineers are available to help purchasers obtain best results from our products, and recommendations are based on tests and information believed to be reliable. However, we have no control over the conditions under which our products are transported to, stored, handled, or used by purchasers and, in any event, all recommendations and sales are made on condition that we will not be held liable for any damages resulting from their use. No representative of ours has any authority to waive or change this provision. We also expect purchasers to use our products in accordance with the guiding principles of the Chemical Manufacturers Association's Responsible Care® program.

PROPERTIES	TEST RESULTS	MIL-STD-883C, METHOD 5011 SUPPLIER REQUIREMENTS
PotLife:	2weeks	1 hour (minimum)
ShelfLife:	1 year @ -40°C	For 1 component systems, 1 year @ -40°C
TGA Weight Loss @ 300°C:	0.19%	1.0%
Ionic Impurities		
Conductivity of Water Extract:	10 µmhos/cm	45 µmhos/cm
pH:	5.5	4.0 - pH - 9.0
Chloride:	30 ppm	300 ppm
Sodium:	10 ppm	50 ppm
Potassium:	2 ppm	50 ppm
Bond Strength ¹		
@ 25°C:	5000 psi	870 psi
@ 25°C after 1000 hours @ 150°C:	3600 psi	870 psi
Thermal Conductivity:	4.3 Watt/m ² K (2.5 BTU ft ⁻¹ hr ⁻¹ °F ⁻¹)	1.5 Watt/m ² K (0.87 BTU ft ⁻¹ hr ⁻¹ °F ⁻¹)
Volume Resistivity		
@ 25°C:	0.00007 ohm-cm	0.0005 ohm-cm
@ 60°C:	0.00008 ohm-cm	0.0005 ohm-cm
@ 150°C:	0.00009 ohm-cm	0.0005 ohm-cm
@ 25°C after 1000 hours @ 150°C:	0.00005 ohm-cm	0.0005 ohm-cm
Coefficient of Linear Thermal Expansion		
Below Tg:	52 ppm/°C	65 x 10 ⁻⁶ in/in/°C
Above Tg:	200 ppm/°C	300 x 10 ⁻⁶ in/in/°C

¹ NOTE: A 2-hour cure at 150°C is necessary to meet the die shear requirement at 150°C as listed in Method 5011.

INSTRUCTIONS

Apply adhesive as required. Assemble bonds. Cure at the recommended cure cycle(s).

AVAILABILITY

This adhesive is available in a variety of package sizes, ranging from 1cc to 1 pound.

STORAGE LIFE

Ablebond 84-1LMIT adhesive may be stored up to 1 year at -40°C.

CAUTION This product may cause skin irritation in sensitive persons. Avoid skin contact. If contact does occur, wash area immediately with soap and water. Please refer to Material Safety Data Sheet (OSHA) for more details.

Medical Implantable Disclaimer

"In the event this product is intended by you for use in implantation in the human body, you are hereby advised that National Starch (or Emerson & Cuming) has not performed clinical testing of these materials for implantation in the human body nor has National Starch (Emerson & Cuming) sought, nor received, approval from the FDA for the use of these material in implantation in the human body. It is YOUR responsibility, as a manufacturer of any such device, to ensure that all materials and processes relating to the manufacture of any medical device fully comply with all applicable federal, state and local laws, rules, regulations and requirements as well as any such laws, rules, regulations, directives or other orders of any foreign country where such product is sold. If you have not undertaken the necessary investigations to ensure compliance you are advised NOT TO USE this product in the manufacture of any device which is to be implanted in the human body. No representative of ours has any authority to change the foregoing provisions."