

LOCTITE ABLESTIK 84-3MVBTI

October 2014

PRODUCT DESCRIPTION

LOCTITE ABLESTIK 84-3MVBTI provides the following product characteristics:

Technology	Epoxy
Appearance	blue
Cure	Heat cure
Product Benefits	- Electrically Insulating - Low bleed - Long work life - Good dispensability
Application	Die attach
Filler Type	Silica

LOCTITE ABLESTIK 84-3MVBTI adhesive is designed for die attach and hybrid component attach applications.

TYPICAL PROPERTIES OF UNCURED MATERIAL

Thixotropic Index (0.5/5 rpm)	2.7
Viscosity, Brookfield CP51, 25 °C, mPa·s (cP):	
Speed 5 rpm	29,000
Work Life @ 25°C, days	14
Shelf Life (from date of manufacture):	
@ -40°C, days	365
@ -15°C, days	183

TYPICAL CURING PERFORMANCE

Cure Schedule

1 hour @ 150°C

Alternative Cure Schedule

1 hour @ 120°C + 1 hour @ 150°C

Weight Loss on Cure

10 x 10 mm Si die on glass slide, % 3.98

Ramp cure/step cure have shown to reduce voiding in the bondline. Due to varying package designs for BGA, different dwell time at initial step temperature may be necessary to achieve minimal voiding.

The above cure profiles are guideline recommendations. Cure conditions (time and temperature) may vary based on customers' experience and their application requirements, as well as customer curing equipment, oven loading and actual oven temperatures.

TYPICAL PROPERTIES OF CURED MATERIAL

Physical Properties

Coefficient of Thermal Expansion :	
Below Tg, ppm/°C	46
Above Tg, ppm/°C	115
Glass Transition Temperature (Tg) by TMA, °C	81
Thermal Conductivity @ 121°C, W/(m·K)	0.64

Extractable Ionic Content, ppm:

Chloride (Cl-)	≤50
Sodium (Na+)	≤20
Potassium (K+)	≤20
Water Extract Conductivity, μmhos/cm	35
Moisture Absorption @ Saturation, wt.% @ 85°C/85%RH	1.1

Electrical Properties

Volume Resistivity, ohms-cm	1.6×10 ¹⁵
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TYPICAL PERFORMANCE OF CURED MATERIAL

Die Shear Strength :

2 X 2 mm Si die, kg-f,

Substrate	@25°C
Ag/Cu leadframe	26.5

GENERAL INFORMATION

For safe handling information on this product, consult the Material Safety Data Sheet, (MSDS).

THAWING:

1. Allow container to reach room temperature before use.
2. After removing from the freezer, set the syringes to stand vertically while thawing.
3. DO NOT open the container before contents reach 25°C temperature. Any moisture that collects on the thawed container should be removed prior to opening the container.
4. DO NOT re-freeze. Once thawed to -40°C, the adhesive should not be re-frozen.

DIRECTIONS FOR USE

1. Thawed adhesive should immediately be placed on dispense equipment for use.
2. If the adhesive is transferred to a final dispensing reservoir, care must be exercised to avoid entrapment of contaminants and/or air into the adhesive.
3. Adhesive must be completely used within the product's recommended work life.
4. Apply enough adhesive to achieve a 25 to 50 μm wet bondline thickness, dispensed with approximately 25 to 50 % filleting on all sides of the die.
5. Alternate dispense amounts may be used depending on the application requirements.
6. Star or crossed shaped dispense patterns will yield fewer bondline voids than the matrix style of dispense pattern.

Not for product specifications

The technical data contained herein are intended as reference only. Please contact your local quality department for assistance and recommendations on specifications for this product.

Storage

Store product in the unopened container in a dry location. Storage information may be indicated on the product container labeling.

Optimal Storage: -40 °C. Storage below minus (-)40 °C or greater than minus (-)40 °C can adversely affect product properties.

Material removed from containers may be contaminated during use. Do not return product to the original container. Henkel Corporation cannot assume responsibility for product which has been contaminated or stored under conditions other than those previously indicated. If additional information is required, please contact your local Technical Service Center or Customer Service Representative.

Conversions

$(^{\circ}\text{C} \times 1.8) + 32 = ^{\circ}\text{F}$
 $\text{kV/mm} \times 25.4 = \text{V/mil}$
 $\text{mm} / 25.4 = \text{inches}$
 $\text{N} \times 0.225 = \text{lb}$
 $\text{N/mm} \times 5.71 = \text{lb/in}$
 $\text{N/mm}^2 \times 145 = \text{psi}$
 $\text{MPa} = \text{N/mm}^2$
 $\text{MPa} \times 145 = \text{psi}$
 $\text{N}\cdot\text{m} \times 8.851 = \text{lb}\cdot\text{in}$
 $\text{N}\cdot\text{m} \times 0.738 = \text{lb}\cdot\text{ft}$
 $\text{N}\cdot\text{mm} \times 0.142 = \text{oz}\cdot\text{in}$
 $\text{mPa}\cdot\text{s} = \text{cP}$

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Americas
+1.888.943.6535

Europe
+32.1457.5611

Asia
+86.21.3898.4800

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