

# LOCTITE ABLESTIK QMI519LB

November 2016

## PRODUCT DESCRIPTION

LOCTITE ABLESTIK QMI519LB provides the following product characteristics:

<b>Technology</b>	BMI/Acrylate
<b>Appearance</b>	Silver
<b>Product Benefits</b>	<ul style="list-style-type: none"> <li>Electrically conductive</li> <li>Thermally conductive</li> <li>Low resin bleed</li> <li>One component</li> <li>Ease of use</li> <li>Void-free bondline</li> <li>Hydrophobic</li> <li>Stable at high temperatures</li> <li>High resistance to delamination</li> <li>Good resistance to "popcorning" after exposure to reflow temperatures</li> </ul>
<b>Cure</b>	Heat cure
<b>Application</b>	Die attach
<b>Key Substrates</b>	Wide variety of metals and ceramic surfaces, Copper, Silver, Palladium and Alloy 42
<b>Typical Package Application</b>	SOIC, SOP, QFP and QFN type packages

LOCTITE ABLESTIK QMI519LB silver filled conductive adhesive is recommended for use in bonding integrated circuits and components to metal leadframes. It is designed to achieve UPHs several orders of magnitude higher than conventional oven cured adhesives. Maximum productivity is realized through in-line cure, either on the diebonder using a post diebond heater or on the wirebonder preheater. Studies have also shown improved coplanarity in parts cured on the diebonder.

## TYPICAL PROPERTIES OF UNCURED MATERIAL

Viscosity, Brookfield CP51, 25 °C, mPa·s (cP):	
Speed 5 rpm	15,000
Thixotropic Index (Speed 0.5/speed 5)	5.02
Specific Gravity @ 25 °C	4.0
Work Life by viscosity, hours	48
Shelf Life @ -40°C (from date of manufacture), days	365
Flash Point - See SDS	

## TYPICAL CURING PERFORMANCE

### SkipCure Process

≥10 seconds @ 200°C

### Alternative Cure Schedule 1

15minutes @ 185°C (maybe suitable for QFN packages)

### Alternative Cure Schedule 2

15minutes @ 200 to 220°C (for higher adhesion)

The above cure profile is a guideline recommendation. 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		40
Above Tg, ppm/°C		140
Glass Transition Temperature, TMA, °C		150
Dynamic Tensile Modulus	N/mm <sup>2</sup> (psi)	6,000 (870,226)
Extractable Ionic Content, , ppm:		
Chloride (Cl-)		<20
Sodium (Na+)		<20
Potassium (K+)		<20

### Electrical Properties

Volume Resistivity, ohm-cm	0.0001
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## TYPICAL PERFORMANCE OF CURED MATERIAL

### Miscellaneous

Die Shear Strength :

2 x 2 mm Si die @ 25°C, kg-f:	
on Au LF	15
on PPF LF	10
2 x 2 mm Si die @ 25 °C, kg-f:	
After PMC (4 hours @ 175°C)	3.3
After PB (16 hours @ 121°C )	2.7

## GENERAL INFORMATION

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

### THAWING:

1. Allow material 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. Silver-resin separation may occur if the adhesive is left out at room temperature, beyond the recommended work life.
5. 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.
6. Alternate dispense amounts may be used depending on the application requirements..
7. 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

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

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

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Reference 0.1