

# LOCTITE ABLESTIK QMI519

November 2016

## PRODUCT DESCRIPTION

LOCTITE ABLESTIK QMI519 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>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 QMI519 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.

This product and its use may be covered by patent 5,717,034 and by one or more pending patent applications.

## TYPICAL PROPERTIES OF UNCURED MATERIAL

|   |       |
|---|-------|
| Viscosity @ 25 °C, mPa·s (cP):                      |       |
| Speed 5 rpm   | 9,000 |
| Thixotropic Index (Speed 0.5/speed 5)               | 4.2   |
| Specific Gravity @ 25 °C                            | 3.8   |
| Pot life@ 25°C, hours                               | 48    |
| Shelf Life @ -40°C (from date of manufacture), year | 1     |
| Flash Point - See SDS                               |       |

## TYPICAL CURING PERFORMANCE

### SkipCure Process

≥10 seconds @ 200°C

### Alternative Cure Schedule 1

15minutes @ 185°C

### Alternative Cure Schedule 2

15minutes @ 200 to 220°C

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

Cured for @ 25 °C

### Physical Properties

|  |  |
|--|--|
| Coefficient of Thermal Expansion, TMA: |  |
| alpha1, ppm/°C                         | 40   |
| alpha2, ppm/°C                         | 140  |
| Glass Transition Temperature, °C       | 75   |
| Young's Modulus @ 25 °C                | N/mm <sup>2</sup> 5,300<br>(psi) (769,000) |
| Thermal Conductivity, W/(m·K)          | 3.8  |
| Extractable Ionic Content, :           |  |
| Chloride (Cl <sup>-</sup> )            | ≤20  |
| Potassium (K <sup>+</sup> )            | ≤20  |
| Sodium (Na <sup>+</sup> )              | ≤20  |
| Fluoride (F <sup>-</sup> )             | ≤20  |

Moisture Absorption, wt. %:

168 hours @ 85°C/85% RH ≤0.2

### Electrical Properties

Volume Resistivity, ohm-cm 0.0001

## TYPICAL PERFORMANCE OF CURED MATERIAL

### Miscellaneous

Die Shear Strength :

300 X 300 mil, 1 mil bondline thickness Ag plated Cu:  
@ 25°C N/mm<sup>2</sup> 10  
(psi) (1,450)

## GENERAL INFORMATION

**This product is not recommended for use in pure oxygen and/or oxygen rich systems and should not be used with chlorine or other strong oxidizing materials unless otherwise specifically stated.**

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

### Directions for use

#### Dispensing and Bondline Control:

- Since thinner bondlines increase stress and may affect adhesion, please call your nearest Loctite technical service engineer for consultation in cases where bondlines less than 1mil are desired.

LOCTITE ABLESTIK QMI519 has excellent rheology and flows easily under shear stresses such as those present during die bonding. Therefore, bondforces used with other adhesives, which produce a certain bondline thickness, may result in thinner

bondlines with LOCTITE ABLESTIK QMI519. Optimization of diebonding parameters is strongly recommended to consistently meet target bondline thicknesses.

#### 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

$(^{\circ}\text{C} \times 1.8) + 32 = ^{\circ}\text{F}$

$\text{kV/mm} \times 25.4 = \text{V/mil}$

$\text{mm} / 25.4 = \text{inches}$

$\text{N} \times 0.225 = \text{lb/F}$

$\text{N/mm} \times 5.71 = \text{lb/in}$

$\text{psi} \times 145 = \text{N/mm}^2$

$\text{MPa} = \text{N/mm}^2$

$\text{N}\cdot\text{m} \times 8.851 = \text{lb}\cdot\text{in}$

$\text{N}\cdot\text{m} \times 0.738 = \text{lb}\cdot\text{ft}$

$\text{N}\cdot\text{mm} \times 0.142 = \text{oz}\cdot\text{in}$

$\text{mPa}\cdot\text{s} = \text{cP}$

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Reference 0.4