

LOCTITE ABLESTIK QMI519

November 2016

PRODUCT DESCRIPTION

LOCTITE ABLESTIK QMI519 provides the following product characteristics:

Technology	BMI/Acrylate
Appearance	Silver
Product Benefits	- Electrically conductive - Thermally conductive - One component - Ease of use - Void-free bondline - Hydrophobic - Stable at high temperatures - High resistance to delamination - Good resistance to "popcorning" after exposure to reflow temperatures
Cure	Heat cure
Application	Die attach
Key Substrates	Wide variety of metals and ceramic surfaces, Copper, Silver, Palladium and Alloy 42
Typical Package Application	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 ² 5,300 (psi) (769,000)
Thermal Conductivity, W/(m·K)	3.8
Extractable Ionic Content, ppm:	
Chloride (Cl-)	≤20
Potassium (K+)	≤20
Sodium (Na+)	≤20
Fluoride (F-)	≤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 ² 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

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

Trademark usage

Except as otherwise noted, all trademarks in this document are trademarks of Henkel Corporation in the U.S. and elsewhere. ® denotes a trademark registered in the U.S. Patent and Trademark Office.

Disclaimer

Note:

The information provided in this Technical Data Sheet (TDS) including the recommendations for use and application of the product are based on our knowledge and experience of the product as at the date of this TDS. The product can have a variety of different applications as well as differing application and working conditions in your environment that are beyond our control. Henkel is, therefore, not liable for the suitability of our product for the production processes and conditions in respect of which you use them, as well as the intended applications and results. We strongly recommend that you carry out your own prior trials to confirm such suitability of our product.

Any liability in respect of the information in the Technical Data Sheet or any other written or oral recommendation(s) regarding the concerned product is excluded, except if otherwise explicitly agreed and except in relation to death or personal injury caused by our negligence and any liability under any applicable mandatory product liability law.

In case products are delivered by Henkel Belgium NV, Henkel Electronic Materials NV, Henkel Nederland BV, Henkel Technologies France SAS and Henkel France SA please additionally note the following:

In case Henkel would be nevertheless held liable, on whatever legal ground, Henkel's liability will in no event exceed the amount of the concerned delivery.

In case products are delivered by Henkel Colombiana, S.A.S. the following disclaimer is applicable:

The information provided in this Technical Data Sheet (TDS) including the recommendations for use and application of the product are based on our knowledge and experience of the product as at the date of this

TDS. Henkel is, therefore, not liable for the suitability of our product for the production processes and conditions in respect of which you use them, as well as the intended applications and results. We strongly recommend that you carry out your own prior trials to confirm such suitability of our product.

Any liability in respect of the information in the Technical Data Sheet or any other written or oral recommendation(s) regarding the concerned product is excluded, except if otherwise explicitly agreed and except in relation to death or personal injury caused by our negligence and any liability under any applicable mandatory product liability law.

In case products are delivered by Henkel Corporation, Resin Technology Group, Inc., or Henkel Canada, Inc. the following disclaimer is applicable:

The data contained herein are furnished for information only and are believed to be reliable. We cannot assume responsibility for the results obtained by others over whose methods we have no control. It is the user's responsibility to determine suitability for the user's purpose of any production methods mentioned herein and to adopt such precautions as may be advisable for the protection of property and of persons against any hazards that may be involved in the handling and use thereof. In light of the foregoing, **Henkel Corporation specifically disclaims all warranties expressed or implied, including warranties of merchantability or fitness for a particular purpose, arising from sale or use of Henkel Corporation's products. Henkel Corporation specifically disclaims any liability for consequential or incidental damages of any kind, including lost profits.** The discussion herein of various processes or compositions is not to be interpreted as representation that they are free from domination of patents owned by others or as a license under any Henkel Corporation patents that may cover such processes or compositions. We recommend that each prospective user test his proposed application before repetitive use, using this data as a guide. This product may be covered by one or more United States or foreign patents or patent applications.

Reference 0.3