

# LOCTITE ABLESTIK QMI9507-1A1

January 2019

## PRODUCT DESCRIPTION

LOCTITE ABLESTIK QMI9507-1A1 provides the following product characteristics:

<b>Technology</b>	Proprietary Hybrid Chemistry
<b>Appearance</b>	Silver
<b>Cure</b>	Heat cure or Snap Cure
<b>Spacer Size</b>	25.4 µm
<b>Application</b>	Semiconductor material and Conductive adhesive
<b>Product Benefits</b>	<ul style="list-style-type: none"> <li>• High thermal conductivity</li> <li>• Excellent electrical conductivity</li> <li>• Hydrophobic</li> <li>• Stable at high temperatures</li> <li>• Void-free bondline</li> <li>• Controlled bondline thickness</li> <li>• High adhesive strength</li> <li>• High resistance to delamination</li> <li>• Good resistance to "popcorning" after exposure to lead-free solder reflow temperature</li> </ul>
<b>Typical Assembly Applications</b>	Attachment of integrated circuits and components to metallic leadframes
<b>Substrates</b>	<ul style="list-style-type: none"> <li>• Wide variety of metals</li> <li>• Ceramic surfaces</li> <li>• Copper</li> <li>• Ni/Pd/Au</li> <li>• Preplated leadframes Ni/Pd/Au</li> <li>• Alloy 42 leadframes</li> <li>• Silver-plated copper leadframes</li> </ul>

LOCTITE ABLESTIK QMI9507-1A1 is developed as a soft solder replacement for applications requiring high thermal or high electrical conductivity. It contains proprietary polymer spacers to control bondline thickness. The optimized loading percentage is such that other bulk properties of the material remain unaffected.

This product and its use may be covered by patent 5,716,034 and by one or more pending patent applications.

## TYPICAL PROPERTIES OF UNCURED MATERIAL

Viscosity, 5 rpm @ 25°C, mPa·s (cP)	18,500
Thixotropic Index (0.5/5 rpm)	4.8
Specific Gravity @ 25°C	4.1
Pot Life @ 25°C, hours	24
Shelf Life @ -40°C (from date of manufacture), days	365

## TYPICAL CURING PERFORMANCE

### Oven Cure

30 minutes @ 185°C

### Snap Cure Condition

7-Zone Oven:

Temp per zone: 170°C, 170°C, 170°C, 190°C, 190°C, 190°C, 190°C

Time per zone, seconds

10

LOCTITE ABLESTIK QMI9507-1A1 can be cured using a variety of times and temperatures, depending upon the specific cure equipment

LOCTITE ABLESTIK QMI9507-1A1 may also be cured in conventional ovens or using snap cure equipment

LOCTITE ABLESTIK QMI9507-1A1 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.

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, TMA:

Below Tg, ppm/°C 53

Above Tg, ppm/°C 156

Glass Transition Temperature (Tg), °C 3.3

DMA Modulus :

@ 25°C N/mm<sup>2</sup> 3,370  
(psi) (489,000)

Extractable Ionic Content, :

Chloride (Cl-) <20

Sodium (Na+) <20

Potassium (K+) <20

Fluoride (F-) <20

### Electrical Properties

Volume Resistivity, ohms-cm 0.00004

**TYPICAL PERFORMANCE OF CURED MATERIAL**

Die Shear Strength:

300 x 300 mm die on Ag/Cu LF , kg-f:

@ 25°C	57
@ 245°C	21

**GENERAL INFORMATION**

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

**Dispensing**

1. Since LOCTITE ABLESTIK QMI9507-1A1 has 1 mil spacers, the minimum needle size that should be used for dispense is one with an ID of at least 150um..

2. Sufficient bondforce should be applied to control the bondline thickness. Optimization of diebonding parameters is strongly recommended to consistently meet target bondline thickness.

**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**

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

**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 Corporation, 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.

**Trademark usage:** [Except as otherwise noted] All trademarks in this document are trademarks and/or registered trademarks of Henkel and its affiliates in the U.S. and elsewhere.

Reference 1