

# LOCTITE ABLESTIK QMI546

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## PRODUCT DESCRIPTION

LOCTITE ABLESTIK QMI546 provides the following product characteristics:

<b>Technology</b>	BMI
<b>Appearance</b>	White paste
<b>Filler Type</b>	Fluoropolymer
<b>Product Benefits</b>	<ul style="list-style-type: none"> <li>• Non-conductive</li> <li>• Hydrophobic</li> <li>• Stable at high temperatures</li> <li>• Void-free bondline</li> <li>• No pre-drying</li> <li>• Excellent dielectric properties</li> </ul>
<b>Cure</b>	Skip-Cure Process
<b>Application</b>	Die attach
<b>Substrates</b>	PBGA, CSPs, Die Stack, Organic Laminate and Flexible tape
<b>Surface Finishes</b>	Solder Mask, BT, FR, Polyimide, Au and Other organic surfaces

LOCTITE ABLESTIK QMI546 die attach adhesive is formulated to cure rapidly below the boiling point of water, preventing steam from creating voids. This product is designed to achieve UPHs several orders of magnitude higher than conventional oven cured adhesives.

## TYPICAL PROPERTIES OF UNCURED MATERIAL

Viscosity @ 25 °C, mPa·s (cP):	
Speed 5 rpm	6,500
Thixotropic Index (0.5/5 rpm)	6.0
Specific Gravity @ 25°C	1.3
Pot life @ 25 °C, hours	24
Shelf Life @ -40°C, days	365
Flash Point - See SDS	

## TYPICAL CURING PERFORMANCE

### SkipCure Process

≥8 seconds @ 150°C

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	80
Above Tg, ppm/°C	190
Glass Transition Temperature (Tg), °C	10
DMA Modulus	GPa 1.0 (N/mm <sup>2</sup> ) (1,000) (psi) (145,000)
Thermal Conductivity , W/(m·K)	0.2

### Extractable Ionic Content, ppm:

Sodium (Na+)	≤20
Potassium (K+)	≤20
Chloride (Cl-)	≤20
Fluoride (F-)	≤20

Moisture Absorption, 168 hours @ 85°C/85% RH, wt.% <0.3

Alpha Particle Emissions, particles/cm<sup>2</sup> /hr <0.001

### Electrical Properties

Dielectric Constant @ 1 MHz, @ 25 °C	2.6
Volume Resistivity, Ω.cm	>1×10 <sup>13</sup>

## TYPICAL PERFORMANCE OF CURED MATERIAL

### Miscellaneous

Die Shear Strength @ 25 °C:	
7.62 x 7.62 mm, 0.254 mm BLT, kg-f	20

## GENERAL INFORMATION

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

### 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.

### 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 25°C, the adhesive should not be re-frozen.

### Directions for use

1. LOCTITE ABLESTIK QMI546 has excellent rheology and flow easily under shear stresses such as those present during die bonding.
2. Therefore, bond forces used with other adhesive which product a certain product bond line thickness, may result in thinner bond line with LOCTITE ABLESTIK QMI546.
3. 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

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

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

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

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

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

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

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

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

$$\text{MPa} \times 145 = \text{psi}$$

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

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

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

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

#### 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.

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Reference 0.1