

LOCTITE ABLESTIK QMI505MT

October 2014

PRODUCT DESCRIPTION

LOCTITE ABLESTIK QMI505MT provides the following product characteristics:

Technology	Rubberized epoxy
Appearance	Silver
Filler Type	Silver
Product Benefits	<ul style="list-style-type: none"> Electrically conductive Hydrophobic Stable at high temperatures Void-free bondline Excellent interfacial adhesion strength Low modulus Reduces inter-package stress
Cure	Skip-Cure Process or Oven Cure
Application	Die attach
Substrates	SBGA™, QFN and TQFP
Surface Finishes	Gold, Silver, Ceramics, Palladium and Alloy 42

LOCTITE ABLESTIK QMI505MT die attach paste is designed for attachment of integrated circuits and components to advanced metal and ceramic surfaces. A package or device manufactured with LOCTITE ABLESTIK QMI505MT will have good resistance to delamination and "popcorning" after exposure to reflow temperatures.

TYPICAL PROPERTIES OF UNCURED MATERIAL

Viscosity @ 25 °C, mPa·s (cP):	
Speed 5 rpm	12,000
Thixotropic Index (0.5/5 rpm)	4.8
Specific Gravity @ 25°C	3.42
Pot Life @ 25 °C, hours	48
Shelf Life @ -40°C, months	12
Flash Point - See SDS	

TYPICAL CURING PERFORMANCE

SkipCure Process using die bonder or wire bonder

≥10 seconds @ 200°C at bondline

Alternative Cure Schedule using conventional oven

15 minutes @ 185°C (may be suitable to QFN applications)

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

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	
Glass Transition Temperature, °C	-10

Coefficient of Thermal Expansion , ppm/°C:

Below Tg	72
Above Tg	170
Thermal Conductivity , W/(m-K)	2.4
Extractable Ionic Content, ppm:	
Sodium (Na+)	≤20
Potassium (K+)	≤20
Chloride (Cl-)	≤20
Fluoride (F-)	≤20
Moisture Absorption 168 hours @ 85°C/85% RH, %	≤0.2
DMA Modulus @ 25°C, MPa	860

Electrical Properties

Volume Resistivity, Ω·cm	≤0.002
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TYPICAL PERFORMANCE OF CURED MATERIAL

Die Shear Strength @ 25 °C, kg-f:	
7.5x7.5 mm, 1 mil BLT, Si die on Ag plated Cu LF	35

GENERAL INFORMATION

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

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.

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.

Dispensing

Since thinner bondlines increase stress and may affect adhesion, please call your Henkel Electronics technical service engineer for consultation in cases where bondlines less than 0.0254 mm are desired.

LOCTITE ABLESTIK QMI505MT 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 QMI505MT. Optimization of diebonding parameters is strongly recommended to consistently meet target bondline thicknesses.

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 -40°C or greater than -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

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

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

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

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

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

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

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

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

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

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

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

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

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Reference 0.2

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