Technical Data Sheet

LOCTITE ABLESTIK QMI506

October 2014

PRODUCT DESCRIPTION

LOCTITE ABLESTIK QMI506 provides the following product characteristics:

Technology	Silver Filled
Appearance	Silver
Components	One component - requires no mixing
Cure	Heat cure
Application	Die attach

LOCTITE ABLESTIK QMI506 is a silver filled conductive adhesive for attachment of integrated circuits and components to advanced substrates, including: SBGA's, PBGA's, array packages, tape packs and CSP's. The material is hydrophobic and stable at high temperatures. These features produce void-free bonds lines with excellent interfacial adhesion strength to a wide variety of organic and metal surfaces, including solder mask, BT, FR, polyimide, Au, Kapton™ and Mylar™. This adhesive also exhibits a very low modulus, which can reduce inter-package stress. A package or device manufactured with LOCTITE ABLESTIK QMI506 will have good resistance to delamination and "popcorning" after exposure to reflow temperatures. LOCTITE ABLESTIK QMI506 can be cured in a conventional oven, on a snap cure oven, or utilize SkipCure™ processing on a die bonder or wire bonder. The material is formulated to produce cure onset below 100°C. This can reduce or eliminate the need to pre-dry organic subsrates prior to the die attach process.

TYPICAL PROPERTIES OF UNCURED MATERIAL

Specific Gravity, gm/cc	2.97
Viscosity @ 25 °C, cP:	
Speed 5 rpm	8,000
Thixotropic Index (Speed 0.5/speed 5)	4.9
Flash Point - See SDS	

TYPICAL PROPERTIES OF CURED MATERIAL

Physical Properties

Glass Transition Temperature (Tg), °C		-32
Coefficient of Thermal Expansion , TMA:		
Alpha 1, ppm/°C		74
Alpha 2, ppm/°C		177
Thermal Conductivity, W/(m-K)		1.1
DMA Modulus @ 25°C	N/mm² (psi)	0.63 (91,000)
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.%		≤0.2

Electrical Properties

Volume Resistivity , ohms-cm	

TYPICAL PERFORMANCE OF CURED MATERIAL

Miscellaneous

Die Shear Strength :	
(300 mil² , 1 mil BLT) Average kg-f @ 25°C	≥14

GENERAL INFORMATION

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

Cure Schedule

Conventional Oven	15 minutes @ 150 °C
Snap Cure Oven	≥10 seconds @ 150 °C
Tunnel Oven: configured with hot gas or IR	≥10 seconds @ 150 °C
*Skip*Cure	≥8 seconds @ 150 °C

LOCTITE ABLESTIK QMI506 can be cured using a variety of times and temperatures, depending upon the specific cure equipment. Typical cure profiles are listed below. In these profiles, the temperatures stated are bondline temperatures and the stated times are at temperature.

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.

LOCTITE ABLESTIK QMI506 is supplied in syringes and should be stored at -40°C. Please review Loctite's Die Attach Handling Procedure for additional details on thawing and usage.

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

(°C x 1.8) + 32 = °F
kV/mm x 25.4 = V/mil
mm / 25.4 = inches
N x 0.225 = lb
N/mm x 5.71 = lb/in
N/mm² x 145 = psi
MPa = N/mm²
MPa x 145 = psi
N·m x 8.851 = lb·in
N·m x 0.738 = lb·ft
N·mm x 0.142 = oz·in
mPa·s = cP

Disclaimer

Note

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Reference 0.1