Technical Data Sheet

LOCTITE ABLESTIK QMI529HT-2A1

April 2014

PRODUCT DESCRIPTION

LOCTITE ABLESTIK QMI529HT-2A1 provides the following product characteristics:

Technology	BMI/Acrylate
Appearance	Silver
Filler Type	Silver
Spacer Size	1 mil
Product Benefits	• Excellent electrical conductivity • High thermal conductivity • Hydrophobic • Stable at high temperatures • Void-free bondline • Excellent adhesive strength
Cure	Heat cure
Application	Die attach
Key Substrates	Wide variety of metals and ceramic surfaces, Copper, Silver Plated Copper, Preplated leadframes (NiPdAu) and Alloy 42

LOCTITE ABLESTIK QMI529HT-2A1 conductive die attach adhesive has been formulated for use in high throughput die attach applications. A package or device using this material will have a high resistance to delamination and popcorning after multiple exposures to Pb-free solder reflow temperatures.

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

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

TYPICAL CURING PERFORMANCE

Recommended Cure Schedule

30 minutes @ 185°C

Recommended Snap Cure Condition

Zone No.	1	2	3	4	5	6	7	Time / zone
Temp ºC	170	170	170	190	190	190	190	10 sec

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
Thermal Conductivity , W/(m-K)		6
Tensile Modulus, DMTA :		
@ -65 °C	N/mm² (psi)	7,478 (1,084,592)
@ 25 °C	N/mm² (psi)	4,048 (587,112)
@ 150 °C	N/mm² (psi)	785 (113,854)
@ 200 °C	N/mm² (psi)	686 (99,495)
@ 250 °C	N/mm² (psi)	468 (67,877)
Extractable Ionic Content, ppm:		
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

Miscellaneous

Die Shear Strength :	
300 x 300 mm Die on Ag Leadframe, kg-f:	
@ 25°C	57
@ 245°C	21

GENERAL INFORMATION

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

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 -40°C, the adhesive should not be re-frozen.

DIRECTIONS FOR USE

1. Thawed adhesive should immediately be placed on dispense equipment for use.
2. If the adhesive is transferred to a final dispensing reservoir, care must be exercised to avoid entrapment of contaminants and/or air into the adhesive.
3. Adhesive must be completely used within the product's recommended work life.
4. Apply enough adhesive to achieve a 25 µm wet bondline thickness, dispensed with approximately 25 to 50 % filleting on all sides of the die.
5. Alternate dispense amounts may be used depending on the application requirements.
6. Star or crossed shaped dispense patterns will yield fewer bondline voids than the matrix style of dispense pattern.
7. The minimum needle size that should be used for dispense is one with an ID of at least 150µm.
8. Sufficient bondforce should be applied to control the bondline thickness. Optimization of diebonding parameters is strongly recommended to consistently meet target bondline thickness.

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. 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
(°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 0.3