

LOCTITE ABLESTIK 2600BT

December 2016

PRODUCT DESCRIPTION

LOCTITE ABLESTIK 2600BT provides the following product characteristics:

Technology	Thermal Management
Appearance	Silver
Cure	Heat cure
Product Benefits	<ul style="list-style-type: none"> • High thermal conductivity • Improved dispensability • Improved spreadability • Yields consistent dot sizes with minimal or no tailing
Application	Die attach
Filler Type	Silver
pH	3.4
Typical Package Application	High power devices and Discrete devices

LOCTITE ABLESTIK 2600BT adhesive is designed for thermal management applications requiring high heat extraction from the die. This adhesive uses a unique suspension system containing silver and resin particles suspended in solvent carrier. Once the material is fully cured and the solvent is evaporated, the adhesive has an extremely high silver loading. LOCTITE ABLESTIK 2600BT adhesive provides very low thermal resistance between chip to case, nearing solder and eutectic-type materials.

TYPICAL PROPERTIES OF UNCURED MATERIAL

Thixotropic Index (0.5/5 rpm)	≥3.5
Viscosity, Brookfield CP51, 25 °C, mPa·s (cP):	
Speed 5 rpm	7,000
Work Life @ 25°C, hours	24
Shelf Life @ -40°C (from date of manufacture), days	365

TYPICAL CURING PERFORMANCE

Cure Schedule

30 minute ramp to 200°C + 15 minutes @ 200°C

Alternative Cure Schedule

30 minute ramp to 175°C + 60 minutes @ 175°C

Weight Loss on Cure

10 x 10 mm Si die on glass slide, %	14.8
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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 (Tg) by TMA, °C	41
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Coefficient of Thermal Expansion :

Below Tg, ppm/°C	40
Above Tg, ppm/°C	70

Thermal Conductivity, W/(m·K)

20

Tensile Modulus, DMTA :

@ -65 °C	N/mm ²	4,200
	(psi)	(610,000)
@ 25 °C	N/mm ²	4,100
	(psi)	(600,000)
@ 150 °C	N/mm ²	320
	(psi)	(46,000)
@ 250 °C	N/mm ²	190
	(psi)	(28,000)

Extractable Ionic Content, @ 100°C ppm:

Chloride (Cl ⁻)	<10
Sodium (Na ⁺)	<10
Potassium (K ⁺)	<10
Water Extract Conductivity, µmhos/cm	160
Moisture Absorption @ Saturation, wt. % @ 85°C/85%RH	0.14

Electrical Properties

Volume Resistivity, ohms-cm	0.001
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TYPICAL PERFORMANCE OF CURED MATERIAL

Miscellaneous

Die Shear Strength

2 X 2 mm Si die, kg-f,

Substrate	@25°C
Ag/Cu leadframe	5.4

2 X 2 mm Si die, kg-f,

Substrate	@ RT
Ag/Cu leadframe	5.8 ± 0.8
Cu leadframe	5.2 ± 0.2
Ni/Pd leadframe	5.0 ± 1.3

3 X 3 mm Si die, kg-f,

Substrate	@25°C	@200°C	@250°C
Ag/Cu LF	10.0	1.4	1.2

3 X 3 mm Si die, kg-f,

Substrate	@ RT	@200°C	@250°C
Ag/Cu LF	11.1 ± 2.8	1.9 ± 0.1	1.4 ± 0.2
Cu LF	8.5 ± 2.4	1.5 ± 0.2	1.0 ± 0.1
Ni/Pd LF	11.0 ± 1.9	2.0 ± 0.2	1.4 ± 0.3

Chip Warpage, µm

0.38 mm thick Si die on 0.2 mm thick Ag/Cu LF @25°C

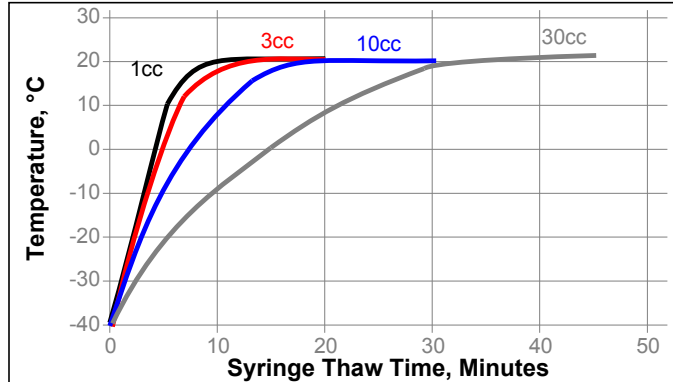
Chip Size:	Warpage:
7.6 x 7.6mm	9.8

GENERAL INFORMATION

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

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. Refer to the Syringe Thaw time chart for the thaw time recommendation.
4. 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.
5. DO NOT re-freeze. Once thawed to -40°C, the adhesive should not be re-frozen.

**DIRECTIONS FOR USE**

This adhesive is a unique suspension system that contains polymer and conductive particles in a solvent carrier. These particles can sometimes agglomerate and could make dispensing difficult for some applications. Due to the unique rheology of this adhesive, clogging of longer dispense tubes may occur due to particle packing. Use of short dispense tubes is recommended.

For consistent and uniform dispensing, a 457mm (18 mil) or greater ID needle is suggested for this adhesive.

Solvent bleed-out that appears after dispensing will volatilize during the oven cure process. Once it volatilizes, it will not redeposit onto the leadframes. For best results, our recommended cure profile is suggested.

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

$(^{\circ}\text{C} \times 1.8) + 32 = ^{\circ}\text{F}$
 $\text{kV/mm} \times 25.4 = \text{V/mil}$
 $\text{mm} / 25.4 = \text{inches}$
 $\text{N} \times 0.225 = \text{lb}$
 $\text{N/mm} \times 5.71 = \text{lb/in}$
 $\text{psi} \times 145 = \text{N/mm}^2$

$\text{MPa} = \text{N/mm}^2$
 $\text{N} \cdot \text{m} \times 8.851 = \text{lb} \cdot \text{in}$
 $\text{N} \cdot \text{m} \times 0.738 = \text{lb} \cdot \text{ft}$
 $\text{N} \cdot \text{mm} \times 0.142 = \text{oz} \cdot \text{in}$
 $\text{mPa} \cdot \text{s} = \text{cP}$

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