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LOCTITE

Technical Data Sheet

LOCTITE ABLESTIK 8600

September 2018

PRODUCT DESCRIPTION

LOCTITE ABLESTIK 8600 provides the following product characteristics:

Technology	Acrylate
Appearance	Silver
Cure	Snap Cure and Heat cure
Product Benefits	• Electrically conductive • Thermally conductive • Low bleed • Improved JEDEC performance • Compatible for use with Ag, PPF and Cu
Application	Die attach
Filler Type	Silver
Typical Package Application	Small SO and QFN type packages

LOCTITE ABLESTIK 8600 die attach adhesive is designed for high reliability package applications with medium thermal and electrical requirements. This material is not recommended for high density matrix leadframes with greater than 500 pads.

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TYPICAL PROPERTIES OF UNCURED MATERIAL

Thixotropic Index (0.5/5 rpm)	4.7
Viscosity, Brookfield CP51, 25 °C, mPa·s (cP):	
Speed 5 rpm	7,500
Work Life @ 25°C, hours (25% increase in viscosity)	24
Shelf Life @ -40°C (from date of manufacture), year	1
Flash Point - See SDS	

TYPICAL CURING PERFORMANCE

Recommended Snap Cure Schedule

(7 Zone)

Temp per zone: 150ºC, 160ºC, 180ºC, 220ºC, 220ºC, 220ºC, 220ºC

Total Time : 60 seconds

N2 Temp : 150ºC

Oven Cure

30 minute ramp to 175°C + 15 minutes @ 175°C , in N2 or air

Weight Loss on Cure

Weight Loss on Cure,	
Snap Cured, 10 x 10 mm Si die on glass slide, %	1.5

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		46
Above Tg, ppm/°C		160
Glass Transition Temperature:		
Tan Δ Max, ºC		187
TMA penetration mode, ºC		108
Thermal Conductivity, Laser Flash, W/(m-K)		>4
Tensile Modulus, DMTA :		
@ -65 °C	N/mm² (psi)	13,300 (1,933,400)
@ 25 °C	N/mm² (psi)	9,600 (1,395,000)
@ 150 °C	N/mm² (psi)	3,100 (447,900)
@ 250 °C	N/mm² (psi)	2,200 (325,000)
Extractable Ionic Content, @ 100°C for 24 hours:		
Chloride (Cl-)		<10
Sodium (Na+)		<10
Potassium (K+)		<10
Weight Loss @ 300ºCThermogravimetric Analysis, %		0.32

Electrical Properties

Volume Resistivity , Snap and oven cured, ohm-cm	0.00008

TYPICAL PERFORMANCE OF CURED MATERIAL

Miscellaneous

Die Shear Strength @ 270°C:	
Post Cure + PMB	
5 X 5 mm (200 x 200 mil) Si die to Pd/Ni/Cu Leadframe, kg-f/die:	
Oven Cured	16.3
Snap Cured	16.8
Die Shear Strength @ 25°C:	
Post Cure	
2 X 2 mm (80 x 80 mil) Si die to Ag/Cu leadframe, kg-f/die:	
Oven Cured	11
Chip Warpage :	
Post Mold Bake , 4 hours @ 175ºC	
6.35 x 6.35 mm (158.75 x 158.75 mil) Si die to Ni/Pd/Au Leadframe, µm	15.3

GENERAL INFORMATION

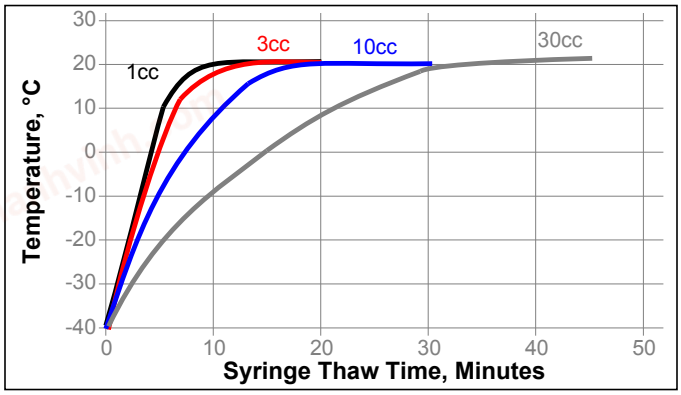
For safe handling information on this product, consult the Safety Data Sheet, (SDS).

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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

1. Thawed material 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. Silver-resin separation may occur if the adhesive is left out at room temperature, beyond the recommended work life.
5. Apply enough adhesive to achieve a 25 to 50 µm wet bondline thickness, dispensed with approximately 25 to 50 % filleting on all sides of the die.
6. Alternate dispense amounts may be used depending on the application requirements.
7. Star or crossed shaped dispense patterns will yield fewer bondline voids than the matrix style of dispense pattern.

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/F
N/mm x 5.71 = lb/in
psi x 145 = N/mm²
MPa = N/mm²
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:

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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