

LOCTITE ABLESTIK 3280

October 2012

PRODUCT DESCRIPTION

LOCTITE ABLESTIK 3280 provides the following product characteristics:

Technology	Acrylate
Appearance	Silver
Cure	Heat cure
Product Benefits	<ul style="list-style-type: none"> • Low stress • Electrically conductive • Improved MRT levels • Excellent adhesion to copper • Fast cure • Snap cure option
Filler Type	Silver
pH	3.6
Application	Die attach
Key Substrates	Copper

LOCTITE ABLESTIK 3280 electrically conductive die attach adhesive is designed for high reliability package applications. This material offers improved JEDEC performance on QFP type packages.

TYPICAL PROPERTIES OF UNCURED MATERIAL

Thixotropic Index (0.5/5 rpm)	≥3.8
Viscosity, Brookfield CP51, 25 °C, mPa·s (cP):	
Speed 5 rpm	8,700
Work Life @ 25°C, hours	24
Shelf Life @ -40°C (from date of manufacture), year	1
Flash Point - See SDS	

TYPICAL CURING PERFORMANCE

Recommended Cure Schedule

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

Alternative Cure Schedule

Seven-Zone Oven:

Temp per zone: 140°C, 150°C, 200°C, 220°C, 220°C, 220°C, 220°C

Time per zone, seconds 60

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

Extractable Ionic Content, ppm:	
Chloride (Cl ⁻)	≤20
Sodium (Na ⁺)	≤20
Potassium (K ⁺)	≤10
Water Extract Conductivity, μmhos/cm	28
Moisture Absorption @ Saturation, wt. % @ 85°C/85%RH	0.2

Electrical Properties

Bond Joint Resistance, ohms/0.5 sq inch	≤0.0015
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TYPICAL PERFORMANCE OF CURED MATERIAL

Die Shear Strength @ 25 °C:

5 X 5 mm (200 x 200 mil) Si die on Ag/Cu LF, kg-f	≥11
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Die Shear Strength vs Temperature:

3 X 3 mm (120 x 120 mil) Si die on Ag/Cu LF, kg-f:	
@ 25 °C	5.1
@ 200 °C	1.7
@ 250 °C	2.1

Chip Warpage vs Chip Size:

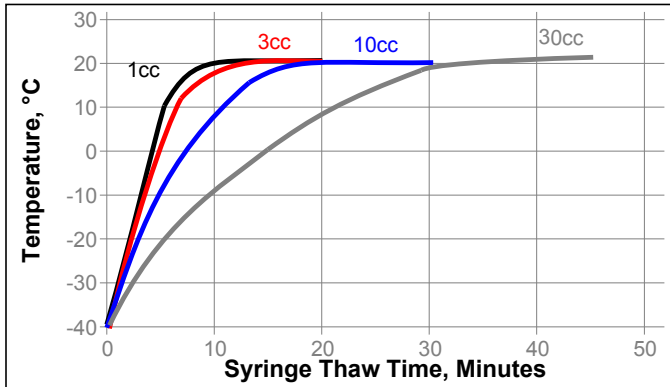
12.7 x 12.7 mm (500 x 500 mil), 0.38 mm (15 mil) thick Si die:	
On 0.2 mm (8 mil) thick Ag/Cu LF @ 25 °C, μm	31.6

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. 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 25°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 products recommended work life.
4. Silver-resin separation may occur if the adhesive is left out at 25 °C 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

$(^{\circ}\text{C} \times 1.8) + 32 = ^{\circ}\text{F}$
 $\text{kV/mm} \times 25.4 = \text{V/mil}$
 $\text{mm} / 25.4 = \text{inches}$
 $\text{N} \times 0.225 = \text{lb}$
 $\text{N/mm} \times 5.71 = \text{lb/in}$
 $\text{N/mm}^2 \times 145 = \text{psi}$
 $\text{MPa} = \text{N/mm}^2$
 $\text{MPa} \times 145 = \text{psi}$
 $\text{N}\cdot\text{m} \times 8.851 = \text{lb}\cdot\text{in}$
 $\text{N}\cdot\text{m} \times 0.738 = \text{lb}\cdot\text{ft}$
 $\text{N}\cdot\text{mm} \times 0.142 = \text{oz}\cdot\text{in}$
 $\text{mPa}\cdot\text{s} = \text{cP}$

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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