

LOCTITE® ABLESTIK WBC 8006NS

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PRODUCT DESCRIPTION

LOCTITE® ABLESTIK WBC 8006NS provides the following product characteristics:

Technology	Epoxy
Appearance	White
Cure	Heat cure
Product benefits	• B-stageable • Non-conductive • Offers improved printability • Engineered to accurately control bondline thickness and die tilt
Application	Wafer backside coating
Filler type	Alumina/Silica

LOCTITE® ABLESTIK WBC 8006NS non-conductive wafer backside coating material has been formulated for use in high throughput wafer backside coating applications. This product is designed for applications by stencil or screen printing. This material can be applied to a wafer backside by stencil printing and then B-staged in an oven. Once B-staged, this coating material remains stable and can be placed into storage for several months. With proper die bonder setup along with incorporating adequate die placement pressure, a consistent minimum bondline thickness of 1mil can be achieved with minimal die tilt.

TYPICAL PROPERTIES OF UNCURED MATERIAL

Viscosity, Brookfield CP51, 25 °C, mPa·s (cP):	
Speed 5 rpm	55,000
Thixotropic index, (0.5/5 rpm)	1.3
Work life @ 25°C, hours	>24
Shelf life @ -40°C, days	365
Flash point - see SDS	

TYPICAL PROCESS DATA

Recommended B-stage condition

40 minutes ramp to 100°C
Hold for 20 minutes + 5 minutes ramp to 120°C
Hold for 20 minutes + cool to <90°C (Air)

Alternative B-stage condition

1 hour @ 100°C or
2 hours @ 80°C

TYPICAL CURING PERFORMANCE

Recommended cure schedule

2 hours @ 160°C

Alternate cure schedule

0.5 hour @ 175°C

The above cure profile(s) are guideline recommendations. These cure conditions (time and temperature) may vary based on customers' experience and specific application requirements, as well as customer curing equipment, oven loading and actual oven temperatures.

TYPICAL PROPERTIES OF CURED MATERIAL

Physical properties

Thermal conductivity, W/(m·K)		0.44
Tensile modulus, DMTA:		
@-65°C	N/mm ² (psi)	5,908 (856,700)
@25°C	N/mm ² (psi)	4,376 (634,500)
@150°C	N/mm ² (psi)	1,196 (176,400)
@250°C	N/mm ² (psi)	69.7 (10,100)
Extractable ionic content, @ 100°C		
Chloride (Cl ⁻)		<15
Sodium (Na ⁺)		<10
Potassium (K ⁺)		<10

Electrical properties

Volume resistivity, ohms-cm	0.43x10 ¹⁴
Dielectric strength, volts/mil	728

TYPICAL PERFORMANCE OF CURED MATERIAL

Die shear strength, @ 25°C	
2 x 2 mm Si die on ceramic, kg-f	23

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. DO NOT open the container before contents reach 22°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 22 °C, the coating material should not be re-frozen.

Directions for use

1. Coating material is normally applied by screen printing using stainless steel mesh. Typical screen mesh is 105 wires per inch with a <6-micron emulsion coating. Squeegee pressure of 2 to 4 kilos and print speed of 10 to 40 mm/sec with a print gap of 3 mm are suitable to print 150 mm diameter wafers. Lower pressure and slower speed may be used for very thin wafers.
2. Apply enough coating materials to the stencil to ensure complete filling of the stencil with a 15 to 20 mm diameter bead. Typically, this requires 20 to 50 cc of coating materials depending on the stencil size. For two-direction printing, double beading is recommended.

Note

Please refer to the wafer backside coating applications and data package for this product to review process windows and recommendations for each step.

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 the specifications of 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 -40°C or greater than -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 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 Henkel representative.

Conversions

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

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