

LOCTITE ABLESTIK 8006NS

April 2014

PRODUCT DESCRIPTION

LOCTITE ABLESTIK 8006NS provides the following product characteristics:

| | |
|-------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Technology | Epoxy |
| Appearance | white |
| Cure | Heat cure |
| Product Benefits | <ul style="list-style-type: none"> • B-Stageable • Non-conductive • Offers improved printability • Engineered to accurately control bondline thickness and die tilt |
| Application | Die attach |
| Filler Type | Alumina/Silica |

LOCTITE ABLESTIK 8006NS non-conductive die attach adhesive has been formulated for use in high throughput die attach applications. This product is designed for application 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 adhesive 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

| | |
|------------------------------------------------|--------|
| Thixotropic Index (0.5/5 rpm) | 1.3 |
| Viscosity, Brookfield CP51, 25 °C, mPa·s (cP): | |
| Speed 5 rpm | 55,000 |
| 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

Cure Schedule

2 hours @ 160°C

Alternate Cure Schedule

0.5 hour @ 175°C

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

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

Electrical Properties

| | |
|--------------------------------|-----------------------|
| Volume Resistivity, ohms-cm | 0.43×10 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 adhesive should not be re-frozen.

DIRECTIONS FOR USE

1. Adhesive 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 adhesive 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 adhesive 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 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

$(^{\circ}\text{C} \times 1.8) + 32 = ^{\circ}\text{F}$

$\text{kV/mm} \times 25.4 = \text{V/mil}$

$\text{mm} / 25.4 = \text{inches}$

$\text{N} \times 0.225 = \text{lb/F}$

$\text{N/mm} \times 5.71 = \text{lb/in}$

$\text{psi} \times 145 = \text{N/mm}^2$

$\text{MPa} = \text{N/mm}^2$

$\text{N}\cdot\text{m} \times 8.851 = \text{lb}\cdot\text{in}$

$\text{N}\cdot\text{m} \times 0.738 = \text{lb}\cdot\text{ft}$

$\text{N}\cdot\text{mm} \times 0.142 = \text{oz}\cdot\text{in}$

$\text{mPa}\cdot\text{s} = \text{cP}$

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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