LOCTITE

Technical Data Sheet

ABLESTIK 8340-O

August 2012

PRODUCT DESCRIPTION

LOCTITE ABLESTIK 8340-O provides the following product characteristics:

Technology	Epoxy
Appearance	Silver
Cure	Heat cure
Product Benefits	• Low stress • Low modulus • Fast oven cure • Improved JEDEC performance • Excellent hot/wet adhesion • Reduced moisture absorption
Application	Die attach
Filler Type	Silver
pH	6.6

LOCTITE ABLESTIK 8340-O electrically conductive die attach adhesive is designed for high reliability leadframe packaging applications. This adhesive can be used on a wide range of die sizes and is suitable for fast or standard oven curing.

TYPICAL PROPERTIES OF UNCURED MATERIAL

Thixotropic Index (0.5/5 rpm)	≥3.6
Viscosity, Brookfield CP51, 25 °C, mPa·s (cP):	
Speed 5 rpm	9,500
Work Life @ 25°C, hours	24
Shelf Life @ -40°C (from date of manufacture), days	365

TYPICAL CURING PERFORMANCE

Cure Schedule

30 minutes @ 175°C (pre-heated oven)

Weight Loss on Cure

10 x 10 mm Si die on glass slide, %	1.0

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 expansion mode:	
Below Tg, ppm/°C	85
Above Tg, ppm/°C	140
Glass Transition Temperature (Tg) by TMA, °C	25
Thermal Conductivity, W/(m-K)	1.1
Extractable Ionic Content, @ 100°C ppm:	
Chloride (Cl-)	≤20
Sodium (Na+)	≤15
Potassium (K+)	≤5
Tensile Modulus, DMTA :	
@ -65 °C	N/mm² (psi) 1,800 (260,000)
@ 25 °C	N/mm² (psi) 910 (130,000)
@ 150 °C	N/mm² (psi) 75 (11,000)
@ 200 °C	N/mm² (psi) 71 (10,000)
@ 250 °C	N/mm² (psi) 160 (23,000)
Water Extract Conductivity, µmhos/cm	100
Moisture Absorption @ Saturation, wt.% @ 85°C/85°RH	0.35

Electrical Properties

Volume Resistivity, ohms-cm	0.004
Bond Joint Resistance, ohms/0.5sq inch	≤0.002

TYPICAL PERFORMANCE OF CURED MATERIAL

Miscellaneous

Die Shear Strength

Post Cure

2 X 2 mm (80 x 80 mil) Si die on Ag/Cu LF:

@ 25°C, kg-f/die	8.4

Die Shear Strength vs Temperature

Post Cure

3 X 3 mm (120 x 120 mil) Si die on Ag/Cu LF:

@ 25ºC, kg-f/die	17
@ 200ºC, kg-f/die	3.9
@ 250ºC, kg-f/die	3.0

Chip Warpage vs Chip Size

Post Cure

12.7 x 12.7 mm (500 x 500 mil), 0.38 mm (15 mil) thick Si die on different substrates:

@ 25ºC, µm	38

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 -40°C, the adhesive should not be re-frozen.

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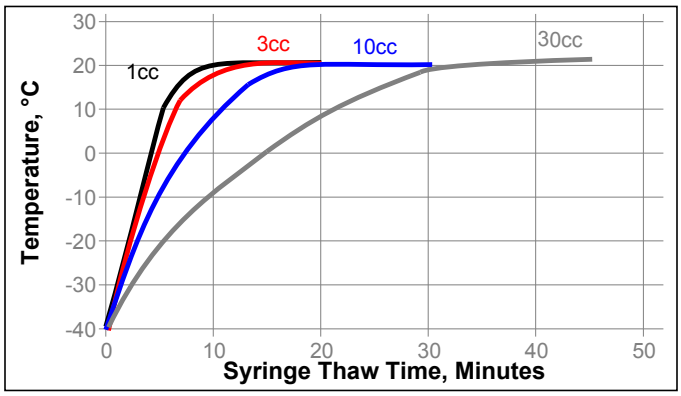

DIRECTIONS FOR USE

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 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.

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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