

# Ablestik

# ABLEBOND 84-3

June 2012

## PRODUCT DESCRIPTION

ABLEBOND 84-3 provides the following product characteristics:

<b>Technology</b>	Epoxy
<b>Appearance</b>	blue
<b>Cure</b>	Heat cure
<b>Product Benefits</b>	<ul style="list-style-type: none"> <li>• Electrically Insulating</li> <li>• One component</li> <li>• Solvent-free formulation</li> <li>• Long work life</li> <li>• Non-conductive</li> </ul>
<b>Application</b>	Die attach
<b>pH</b>	5.5

ABLEBOND 84-3 adhesive is designed for medium die attach applications. This adhesive is ideal for application by automatic dispensing, screen printing or hand.

## TYPICAL PROPERTIES OF UNCURED MATERIAL

Viscosity, Brookfield CP51, 25 °C, mPa·s (cP):	
Speed 5 rpm	50,000
Work Life @ 25°C, weeks	2
Shelf Life @ -40°C (from date of manufacture), year	1

## TYPICAL CURING PERFORMANCE

### Cure Schedule

1 hour @ 150°C

### Alternative Cure Schedule

2 hours @ 125°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

Coefficient of Thermal Expansion :	
Below Tg, ppm/°C	40
Above Tg, ppm/°C	100
Glass Transition Temperature (Tg) by TMA, °C	85
Thermal Conductivity @ 121°C, W/(m-K)	0.8
Extractable Ionic Content, ppm:	
Chloride (Cl <sup>-</sup> )	6
Sodium (Na <sup>+</sup> )	2
Potassium (K <sup>+</sup> )	11
Water Extract Conductivity, µmhos/cm	15
Weight Loss @ 300°C, %	0.17

### Electrical Properties

Volume Resistivity, ohms-cm	3.5×10 <sup>13</sup>
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## TYPICAL PERFORMANCE OF CURED MATERIAL

### Miscellaneous

Die Shear Strength: 2 X 2 mm (80 x 80 mil) Au die @ 25°C, kg-f	19.7
Lap Shear Strength: @ 25°C	N/mm <sup>2</sup> 18 (psi) (2,700)

## 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. 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.
4. DO NOT re-freeze. Once thawed to -40°C, the adhesive should not be re-frozen.
5. Some ABLESTIK products are shipped in a special "barrier packaging" configuration. This package has a one-inch foam barrier insert between the dry ice and the syringe boxes. The purpose of the barrier package is to keep the material in the syringes from becoming too cold (-80°C), thus minimizing freeze thaw void formation.

## 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. 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.
5. Alternate dispense amounts may be used depending on the application requirements.
6. 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

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

## Note

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Reference 0.3