Ablestik

ABLEBOND® 84-3

March 2009

PRODUCT DESCRIPTION

ABLEBOND® 84-3 provides the following product characteristics:

Technology	Epoxy
Appearance	Blue
Cure	Heat cure
Product Benefits	• Electrically Insulating • One component • Solvent-free formulation • Long work life • Non-conductive
Application	Die attach
pH	5.5

ABLEBOND® 84-3 adhesive is designed for 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.

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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/mK	0.8
Extractable Ionic Content, ppm:	
Chloride (Cl-)	6
Sodium (Na+)	2
Potassium (K+)	11
Water Extract Conductivity, µmhos/cm	15
Weight Loss @ 300ºC, %	0.17

Electrical Properties:

Volume Resistivity, ohms-cm	3.5×10^{13}

TYPICAL PERFORMANCE OF CURED MATERIAL

Die Shear Strength:

2 X 2 mm Au die, kg-f,

Substrate	@25°C
Au	19.7

Lap Shear Strength @ 25ºC:

MPa	psi
18	2700

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 (-80ºC), thus minimizing freeze thaw void formation.

DIRECTIONS FOR USE

1. Thawed adhesive should be immediately 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 that the matrix style of dispense pattern.

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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
(°C x 1.8) + 32 = °F
kV/mm x 25.4 = V/mil
mm / 25.4 = inches
N x 0.225 = lb
N/mm x 5.71 = lb/in
N/mm² x 145 = psi
MPa x 145 = psi
N·m x 8.851 = lb·in
N·m x 0.738 = lb·ft
N·mm x 0.142 = oz·in
mPa·s = cP

Note
The data contained herein are furnished for information only and are believed to be reliable. We cannot assume responsibility for the results obtained by others over whose methods we have no control. It is the user's responsibility to determine suitability for the user's purpose of any production methods mentioned herein and to adopt such precautions as may be advisable for the protection of property and of persons against any hazards that may be involved in the handling and use thereof. In light of the foregoing, **Henkel Corporation specifically disclaims all warranties expressed or implied, including warranties of merchantability or fitness for a particular purpose, arising from sale or use of Henkel Corporation's products. Henkel Corporation specifically disclaims any liability for consequential or incidental damages of any kind, including lost profits.** The discussion herein of various processes or compositions is not to be interpreted as representation that they are free from domination of patents owned by others or as a license under any Henkel Corporation patents that may cover such processes or compositions. We recommend that each prospective user test his proposed application before repetitive use, using this data as a guide. This product may be covered by one or more United States or foreign patents or patent applications.

Reference 0.2