

# LOCTITE ABLESTIK ABP 2040LV

May 2017

## PRODUCT DESCRIPTION

LOCTITE ABLESTIK ABP 2040LV provides the following product characteristics:

|                                    |                                                                                                                                                                                                  |
|------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Technology</b>                  | Epoxy                                                                                                                                                                                            |
| <b>Appearance</b>                  | Red                                                                                                                                                                                              |
| <b>Cure</b>                        | Heat cure                                                                                                                                                                                        |
| <b>Product Benefits</b>            | <ul style="list-style-type: none"> <li>• Non-conductive</li> <li>• Single component</li> <li>• Fast cure</li> <li>• Low temperature cure</li> <li>• Low stress</li> <li>• Low warpage</li> </ul> |
| <b>Application</b>                 | Die attach                                                                                                                                                                                       |
| <b>Key Substrates</b>              | Most plastics and metals                                                                                                                                                                         |
| <b>Typical Package Application</b> | Camera module image sensor                                                                                                                                                                       |

LOCTITE ABLESTIK ABP 2040LV non-conductive die attach adhesive has been formulated for use in high throughput die attach applications. This material is designed to minimize stress and decrease warpage between dissimilar surfaces.

## TYPICAL PROPERTIES OF UNCURED MATERIAL

|                                                     |        |
|-----------------------------------------------------|--------|
| Thixotropic Index (0.5/5 rpm)                       | 5.1    |
| Viscosity, Brookfield CP51, 25 °C, mPa·s (cP):      |        |
| Speed 5 rpm                                         | 11,000 |
| Work Life @ 25°C, days                              | 3      |
| Shelf Life @ -40°C (from date of manufacture), days | 365    |

## TYPICAL CURING PERFORMANCE

### Snap Cure Schedule

- 2 minutes @ 120°C or
- 1 minute @ 150°C

### Alternate Cure Schedule

- Oven cure: 30 minutes @ 80°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

|                                              |     |
|----------------------------------------------|-----|
| Glass Transition Temperature (Tg) by TMA, °C | 28  |
| Coefficient of Thermal Expansion, ppm/°C:    |     |
| Below Tg                                     | 39  |
| Above Tg                                     | 129 |

### DMA Modulus :

|         |                   |           |
|---------|-------------------|-----------|
| @ 25°C  | N/mm <sup>2</sup> | 2,603     |
|         | (psi)             | (377,533) |
| @ 150°C | N/mm <sup>2</sup> | 5         |
|         | (psi)             | (725)     |
| @ 250°C | N/mm <sup>2</sup> | 7         |
|         | (psi)             | (1,015)   |

### Thermal Conductivity, W/(m·K)

0.4

### Extractable Ionic Content, ppm:

|                |      |
|----------------|------|
| Chloride (Cl-) | 105  |
| Sodium (Na+)   | 0.08 |
| Potassium (K+) | N/D  |

## TYPICAL PERFORMANCE OF CURED MATERIAL

### Miscellaneous

#### Die Shear Strength :

|                                |     |
|--------------------------------|-----|
| 2 x 2 mm Si die on PBGA, kg-f: |     |
| @ 25°C                         | 13  |
| @ 200°C                        | 2.0 |

#### Chip Warpage, µm

2

Sample cured 120 seconds @ 120°C on hot plate

6 x 6 x 0.152 mm Si die on 0.26 mm thick BT Substrate

## 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 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.

### 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.

### 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**

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

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