

LOCTITE ABLESTIK ABP 8420

January 2020

PRODUCT DESCRIPTION

LOCTITE ABLESTIK ABP 8420 provides the following product characteristics:

| | |
|-----------------------------|---|
| Technology | Epoxy |
| Appearance | Black |
| Cure | Heat cure |
| Product Benefits | <ul style="list-style-type: none"> • Non-conductive • Excellent resin bleed out (RBO) performance • Fast cure • Black pigmentation for blocking stray light • Good adhesion to PA substrates • Good reliability performance |
| Application | Die attach |
| Key Substrates | Most plastics and Glass |
| Typical Applications | Cap, diffuser attach in wirebond packages |

LOCTITE ABLESTIK ABP 8420 non-conductive adhesive is designed for cap and lid attach applications in wirebond packages. This adhesive can be fast cured using directed heat energy or hot plate curing techniques. LOCTITE ABLESTIK ABP 8420 will cure at temperatures as low as 80°C in conventional box or convection conveyor oven curing.

If used over an active die face, an adhesive bondline thickness of >1 mil must be maintained to prevent die scarring.

TYPICAL PROPERTIES OF UNCURED MATERIAL

| | |
|---|--------|
| Thixotropic Index (0.5/5 rpm) | 5.8 |
| Viscosity, Brookfield CP51, 25 °C, mPa·s (cP): | |
| Speed 5 rpm | 13,500 |
| Work Life @ 25°C, hours | 24 |
| Shelf Life @ -20°C (from date of manufacture), days | 180 |

TYPICAL CURING PERFORMANCE

Weight Loss on Cure

| | |
|------------------------|-----|
| Weight Loss on Cure, % | 0.5 |
|------------------------|-----|

Cure Schedule

30 minutes ramp to 150°C, hold 15 minutes @ 150 °C

Alternate Cure Schedule 1

30 minutes @ 100°C or
120 minutes @ 80°C

Alternate Cure Schedule 2

60 minutes @ 120°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 | 75 |
| Coefficient of Thermal Expansion, : | |
| Below Tg, ppm/°C | 54 |
| Above Tg, ppm/°C | 154 |
| Thermal Conductivity, W/(m-K) | 0.3 |
| Extractable Ionic Content, @ 100°C: | |
| Chloride (Cl-) | <120 |
| Sodium (Na+) | <5 |
| Potassium (K+) | <5 |
| Water Extract Conductivity, µmhos/cm | 147 |
| Weight Loss, % | 0.5 |
| DMA Modulus : | |
| @ 25°C | N/mm ² 2,850 (psi) (413,357) |
| @ 100°C | N/mm ² 1,919 (psi) (278,327) |
| @ 150°C | N/mm ² 90 (psi) (13,053) |
| @ 250°C | N/mm ² 84 (psi) (12,183) |

TYPICAL PERFORMANCE OF CURED MATERIAL

Sample cured 15 minutes @ 150°C

Miscellaneous

| | |
|--------------------------|------|
| Die Shear Strength, kg-f | |
| 1 x 1 mm Si die on glass | 6 |
| 2 x 2 mm Si die: | |
| on GBA | 15.5 |
| on PA | 12 |
| on Cu LF | 13 |
| 3 x 3 mm Glass die on PC | 12 |

GENERAL INFORMATION

For safe handling information on this product, consult the Safety Data Sheet, (SDS).

STORAGE:

Store product in the unopened container in a dry location. Storage information may be indicated on the product container labeling.

Optimal Storage : -20 °C

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

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

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

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

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

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

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

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

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

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

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

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

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