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LOCTITE

Technical Data Sheet

# LOCTITE ABLESTIK 8290

December 2015

## PRODUCT DESCRIPTION

LOCTITE ABLESTIK 8290 provides the following product characteristics:

| | |
|---|---|
| **Technology** | Epoxy |
| Appearance | Silver |
| **Cure** | Heat cure |
| Product Benefits | • Low stress<br>• Improved JEDEC performance<br>• Low bleed |
| **Application** | Die attach |
| Filler Type | Silver |

LOCTITE ABLESTIK 8290 electrically conductive die attach adhesive is designed for high reliability leadframe packaging applications. It is recommended for die sizes <200 mils for the best MRT performance .

## TYPICAL PROPERTIES OF UNCURED MATERIAL

| | |
|---|---|
| Thixotropic Index (0.5/5 rpm) | 5.9 |
| Viscosity, Brookfield CP51, 25 °C, mPa·s (cP): | |
| Speed 5 rpm | 9,000 |
| Work Life @ 25°C, hours | 24 |
| Shelf Life @ -40°C (from date of manufacture), days | 365 |

**Note:** Actual work life may be determined by customer application method and equipment and may be extended or shortened based on user's experience.

## TYPICAL CURING PERFORMANCE

### Cure Schedule

30 minute ramp to 175°C + 15 minutes @ 175°C

### Alternate Cure Schedule

30 minute ramp to 100°C; 30 minutes @ 100°C + 15 minute ramp from 100°C to 175°C; 15 minutes @ 175°C

### Weight Loss on Cure

| | |
|---|---|
| 10 x 10 mm Si die on glass slide, % | 2.5 |

The above cure profile is a guideline recommendation. 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, ppm/ºC: | |
| Below Tg | 81 |
| Above Tg | 181 |
| Glass Transition Temperature (Tg) by TMA, °C | 38 |
| Thermal Conductivity, W/(m-K) | 1.6 |
| Tensile Modulus, DMTA : | |
| @ 25 °C | N/mm² 3,034 (psi) (440,000) |
| @ 150 °C | N/mm² 138 (psi) (20,000) |
| @ 250 °C | N/mm² 117 (psi) (17,000) |
| Extractable Ionic Content, @ 100°C ppm: | |
| Chloride (Cl-) | <30 |
| Sodium (Na+) | <20 |
| Potassium (K+) | <10 |
| Moisture Absorption @ Saturation, wt.% 85°C/85°RH | @ 0.71 |

### Electrical Properties

| | |
|---|---|
| Volume Resistivity, ohms-cm | 0.008 |

## TYPICAL PERFORMANCE OF CURED MATERIAL

### Miscellaneous

| | |
|---|---|
| Die Shear Strength @ 25°C: | |
| 2 x 2 mm Si die on Ag/Cu LF, kg-f | 15 |
| Chip Warpage @ 25 °C vs Chip Size: | |
| 12.7 x 12.7 x 0.38 mm Si die on 0.2 mm thick leadframe, µm: | |
| Post Cure | 18 |
| Plus Post Mold Bake (4 hours @ 175°C) | 32 |

## 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 25°C, the adhesive should not be re-frozen.

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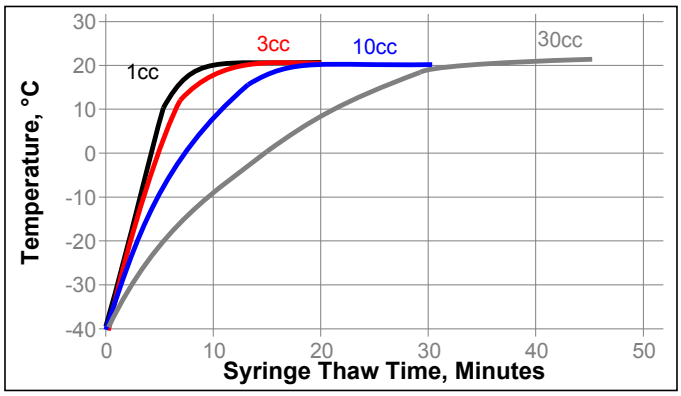


**DIRECTIONS FOR USE**

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 products recommended work life.
4. Silver-resin separation may occur if the adhesive is left out at 25 °C 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**

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
psi x 145 = N/mm²
MPa = N/mm²
N·m x 8.851 = lb·in
N·m x 0.738 = lb·ft
N·mm x 0.142 = oz·in
mPa·s = cP

**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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