Technical Data Sheet

# LOCTITE ABLESTIK 789-3

September 2012

## PRODUCT DESCRIPTION

LOCTITE ABLESTIK 789-3 provides the following product characteristics:

| | |
|---|---|
| **Technology** | Epoxy |
| Appearance | Amber |
| **Cure** | Heat cure |
| Product Benefits | • Non-conductive<br>• Good moisture resistance<br>• One component<br>• High bond strength |
| **Application** | Assembly |
| Typical Package Application | Substrate attach and Package sealing |
| Substrates | Gold, Silver and Copper |

LOCTITE ABLESTIK 789-3 die attach adhesive is designed for microelectronic applications. This adhesive exhibits strong adhesion to difficult-to-bond metals and retains its bond strength after exposure to moisture.

## TYPICAL PROPERTIES OF UNCURED MATERIAL

| | |
|---|---|
| Viscosity, Brookfield CP51, 25 °C, mPa·s (cP): | |
| Speed 5 rpm | 36,500 |
| Work Life @ 25°C, days | 91 |
| Shelf Life: | |
| @ 5ºC, days | 183 |
| @ -40ºC, days | 365 |

## TYPICAL CURING PERFORMANCE

**Cure Schedule**

30 minutes @ 150°C

**Alternate Cure Schedule**

4 hours @ 93°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 TMA: | |
| Below Tg, ppm/°C | 63 |
| Above Tg, ppm/°C | 140 |
| Glass Transition Temperature (Tg) by TMA, °C | 126 |
| Thermal Conductivity @ 121°C, W/(m-K) | 0.3 |
| Weight Loss @ 250ºC, % | 0.28 |

**Electrical Properties**

| | |
|---|---|
| Volume Resistivity, ohms-cm | $2\times10^{14}$ |
| Dielectric Strength volts/mil | 800 |

## TYPICAL PERFORMANCE OF CURED MATERIAL

**Miscellaneous**

| | | |
|---|---|---|
| Die Shear Strength : | | |
| 2 x 2 mm Si die on Ceramic | N/mm² | 27.5 |
| | (psi) | (4,000) |
| Lap Shear Strength: | | |
| Al to Al | N/mm² | 35 |
| | (psi) | (5,000) |
| Au to Au | N/mm² | 38 |
| | (psi) | (5,500) |

## 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.

## 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. Apply adhesive as required.
4. Assemble bonds.
5. Cure at one of the recommended cure schedules.
6. Adhesive must be completely used within the product's recommended work life.

## AVAILABILITY

This adhesive is available in a variety of package sizes, ranging from 1 cc to 1pound.

**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**
When packaged in jars, this adhesive may be stored at refrigerated temperature (5ºC maximum) for 6 months.

When packaged in syringes, this adhesive should be stored at 5ºC or colder. Shelf life is 5ºC for 6 months.

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

**Optimal Storage: -40 °C to 5°C. Storage below -40 °C or greater than 5 °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 = N/mm²
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

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**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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Reference 0.1