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 • Good moisture resistance • One component • 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	2×10^{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:
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Reference 0.1