

LOCTITE ABLESTIK 789-4

October 2014

PRODUCT DESCRIPTION

LOCTITE ABLESTIK 789-4 provides the following product characteristics:

Technology	Epoxy
Appearance	White paste
Cure	Heat cure
Product Benefits	- One component - Thermally conductive - Strong adhesion to difficult to bond metals
Application	Thermally conductive adhesive
Typical Applications	Substrate Attach, Sealing microelectronic packages, Heat sink attach and Component attach
Surface Finishes	Gold, Silver and Copper

LOCTITE ABLESTIK 789-4 thermally conductive adhesive is designed for substrate attach, sealing and component staking applications.

TYPICAL PROPERTIES OF UNCURED MATERIAL

Work Life @ 25°C, days	91
Shelf Life:	
@ 5°C, days	183
@ -40°C, days	365
Flash Point - See SDS	

TYPICAL CURING PERFORMANCE

Recommended Curing Conditions

30 minutes @ 150°C

Alternative Curing Conditions

1 hour @ 125°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	35
Above Tg, ppm/°C	100
Glass Transition Temperature, °C	130
Thermal Conductivity @ 121°C, W/(m-K)	0.7
Weight Loss @ 250°C, %	0.28
Hardness, Shore D	90

Electrical Properties

Volume Resistivity, ohms-cm	6×10 ¹⁴
Dielectric Strength, volts/mil	600
Dielectric Constant/Dissipation Factor @ 1KHz	6.4/0.001

TYPICAL PERFORMANCE OF CURED MATERIAL

Lap Shear Strength @25°C

(Glass to glass):

Al to Al	N/mm ²	17.93
	(psi)	(≥2,600)
Au to Au	N/mm ²	27.59
	(psi)	(4,000)

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

DIRECTIONS FOR USE

1. Apply adhesive as required.
2. Assemble bonds.
3. Cure at one of the recommended cure schedules.

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

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

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Reference 0.2