

# LOCTITE ABLESTIK 84-1LMI

October 2014

## PRODUCT DESCRIPTION

LOCTITE ABLESTIK 84-1LMI provides the following product characteristics:

<b>Technology</b>	Epoxy
<b>Appearance</b>	Silver
<b>Cure</b>	Heat cure
<b>Product Benefits</b>	<ul style="list-style-type: none"> <li>Electrically conductive</li> <li>Low bleed</li> <li>Low outgassing</li> </ul>
<b>Application</b>	Die attach
<b>pH</b>	5.5
<b>Filler Type</b>	Silver

LOCTITE ABLESTIK 84-1LMI die attach adhesive is designed for microelectronic chip bonding applications. This adhesive is ideal for application by automatic dispenser or hand probe.

## MIL-STD-883

LOCTITE ABLESTIK 84-1LMI meets the requirements of MIL-STD-883, Method 5011.

## TYPICAL PROPERTIES OF UNCURED MATERIAL

Thixotropic Index (0.5/5 rpm)	4.0
Viscosity, Brookfield CP51, 25 °C, mPa·s (cP):	
Speed 5 rpm	30,000
Work Life @ 25°C, days	14
Shelf Life (from date of manufacture):	
@ 5°C, days	91
@ -10°C, days	183
@ -40°C, days	365

## TYPICAL CURING PERFORMANCE

### Cure Schedule

1 hour @ 150°C

### Alternate Cure Schedule

2 hours @ 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 :	
Below Tg, ppm/°C	55
Above Tg, ppm/°C	150
Glass Transition Temperature (Tg) by TMA, °C	103
Thermal Conductivity, W/(m·K)	2.4

Extractable Ionic Content, ppm:

Chloride (Cl <sup>-</sup> )	≤20
Sodium (Na <sup>+</sup> )	≤20
Potassium (K <sup>+</sup> )	≤10
Water Extract Conductivity, μmhos/cm	10
Weight Loss @ 300°C, %	0.19

## Electrical Properties

Volume Resistivity, ohms-cm	0.0005
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## TYPICAL PERFORMANCE OF CURED MATERIAL

Die Shear Strength :

2 x 2 mm Si die on Ag/Cu LF @ 25 °C, kg-f	19
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Lap Shear Strength @ 25°C:

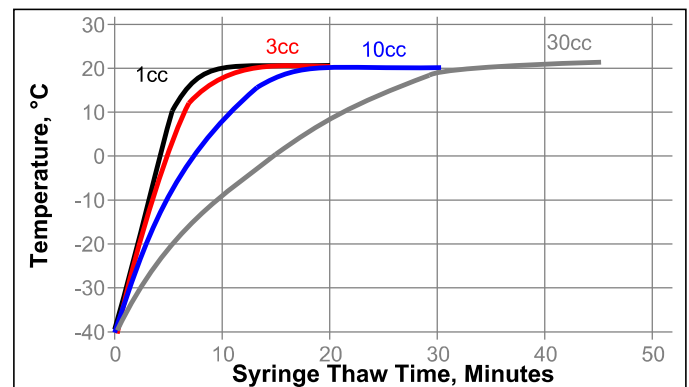
Al to Al	N/mm <sup>2</sup> 12
	(psi) (1,500)

## GENERAL INFORMATION

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

## THAWING:

- Allow container to reach room temperature before use.
- After removing from the freezer, set the syringes to stand vertically while thawing.
- Refer to the Syringe Thaw time chart for the thaw time recommendation.
- 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.
- 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. Adhesive must be completely used within the product's recommended work life.
4. Silver-resin separation may occur if the adhesive is left out at 25 °C beyond the recommended work life.

**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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Americas  
+1.888.943.6535

Europe  
+32.1457.5611

Asia  
+86.21.3898.4800

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