

# LOCTITE ABLESTIK 84-1LMIT1

September 2022

## PRODUCT DESCRIPTION

LOCTITE ABLESTIK 84-1LMIT1 provides the following product characteristics:

<b>Technology</b>	Epoxy
<b>Appearance</b>	Silver
<b>Cure</b>	Heat cure
<b>pH</b>	4.5
<b>Product Benefits</b>	<ul style="list-style-type: none"> <li>Electrically conductive</li> <li>High thermal conductivity</li> <li>Solvent-free formulation</li> <li>Low viscosity</li> </ul>
<b>Application</b>	Die attach
<b>Filler Type</b>	Silver

LOCTITE ABLESTIK 84-1LMIT1 adhesive is designed for medium die attach applications. It is designed for screen printing using 325 mesh.

### MIL-STD-883C

LOCTITE ABLESTIK 84-1LMIT1 meets the requirements of MIL-STD-883C, Method 5011.

## TYPICAL PROPERTIES OF UNCURED MATERIAL

Viscosity, Brookfield CP51, 25 °C, mPa·s (cP):	
Speed 5 rpm	22,000
Work Life @ 25°C, days	14
Shelf Life @ -40°C (from date of manufacture), 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 specific 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 T <sub>g</sub> , ppm/°C	50
Above T <sub>g</sub> , ppm/°C	200

Glass Transition Temperature, TMA, °C	103
Thermal Conductivity, W/(m·K)	3.6
Tensile Modulus, DMTA :	
@ -65 °C	N/mm <sup>2</sup> 8,400 (psi) (1,218,317)
@ 25 °C	N/mm <sup>2</sup> 7,300 (psi) (1,058,775)
@ 100 °C	N/mm <sup>2</sup> 5,400 (psi) (783,203)
@ 150 °C	N/mm <sup>2</sup> 540 (psi) (78,320)
@ 200 °C	N/mm <sup>2</sup> 390 (psi) (56,564)
@ 250 °C	N/mm <sup>2</sup> 460 (psi) (66,717)

### Extractable Ionic Content, @ 100°C:

Chloride (Cl-)	≤200
Sodium (Na+)	≤50
Potassium (K+)	≤50
Weight Loss @ 300°C, %	0.16
Water Extract Conductivity, μmhos/cm	13

## Electrical Properties

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

### Miscellaneous

Die Shear Strength:	
2 x 2 mm Au die @ 25°C, kg-f	19

### Lap Shear Strength :

Aluminum to Aluminum @ 25°C	N/mm <sup>2</sup> 13 (psi) (1,885)
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## TYPICAL ENVIRONMENTAL RESISTANCE

### Outgassing Properties

Outgassing , NASA Outgassing:	
TML, %	0.09
CVCM, %	<0.01
WVR, %	0.05

## GENERAL INFORMATION

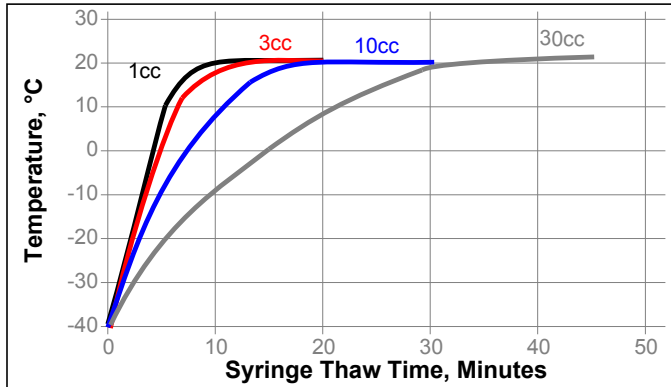
For safe handling information on this product, consult the Safety Data Sheet, (SDS).

### Thawing

1. Allow container to reach room temperature before use.
2. 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 25°C, the adhesive should not be re-frozen.



### Surface Preparation

- Proper preparation of substrates is critical to optimize epoxy adhesive flow and adhesion. The substrate water contact angle (WCA) is a good indicator of the capillary forces that drive resin flow and adhesion. Henkel recommends industry standards of <math><50^\circ</math> for substrate WCA. This allows the epoxy resin to better wet the substrate. Users may want to establish the precise relationship between WCA and product performance for their specific application.
- Substrate surface chemistry is impacted by the entire substrate supply chain including supplier manufacturing methods, packaging, handling, plasma treatment, storage conditions, exposure to environment, and subsequent cleaning steps.

### Directions for Use

- Thawed material should immediately be placed on dispense equipment for use.
- 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.
- Adhesive must be completely used within the product's recommended work life.
- Silver-resin separation may occur if the adhesive is left out at room temperature, beyond the recommended work life.

### Not for product specifications

The technical data contained herein are intended as reference only. Please contact your local Henkel representative for assistance and recommendations on the specifications of 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 Henkel Representative.

### Conversions

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

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Reference 0.6