

# LOCTITE ABLESTIK 84-1LMISR4K

October 2014

## PRODUCT DESCRIPTION

LOCTITE ABLESTIK 84-1LMISR4K 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>• Good dispensability with minimal tailing and stringing</li> <li>• Solvent-free</li> <li>• Low voiding</li> </ul>
<b>Application</b>	Die attach
<b>Filler Type</b>	Silver

LOCTITE ABLESTIK 84-1LMISR4K electrically conductive die attach adhesive has been formulated for use in high throughput, automated die attach equipment. LOCTITE ABLESTIK 84-1LMISR4K is a higher viscosity version of ABLEBOND 4-1LMISR4K adhesive.

## TYPICAL PROPERTIES OF UNCURED MATERIAL

Thixotropic Index (0.5/5 rpm)	≥5.0
Viscosity, Brookfield CP51, 25 °C, mPa·s (cP):	
Speed 5 rpm	9,500
Work Life @ 25°C, day	1
Shelf Life @ -40°C, days	365
Flash Point - See SDS	

## TYPICAL CURING PERFORMANCE

### Recommended Curing Conditions

1 hour @ 175°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	48
Above Tg, ppm/°C	150
Glass Transition Temperature, °C	112

### Extractable Ionic Content, ppm:

Chloride (Cl-)	20
Sodium (Na+)	10
Potassium (K+)	5

Thermal Conductivity @ 121°C, W/(m·K) 2.3

### Electrical Properties:

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

Die Shear Strength 80 mil<sup>2</sup> IC

Si die Ag plated Cu L/F @ RT	N/mm <sup>2</sup>	12.59
	(psi)	(4,000)

Lap Shear Strength 80 mil<sup>2</sup> IC

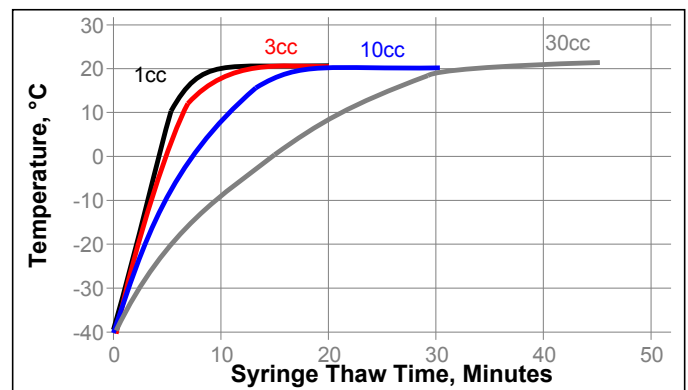
Al to Al @ 25°C	N/mm <sup>2</sup>	6.9
	(psi)	(1,000)

## 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. To homogenize the adhesive, rolling is recommended for jars of Ablebond 84-1LMISR4K that have been stored at temperatures higher than -40°C. All jars should be rolled for a minimum of 8 hours at 5 rpm.
2. Thawed adhesive should immediately be placed on dispense

equipment for use.

3. Adhesive that appears to have separated should not be used without remixing. Separation is indicated by the presence of a yellow/amber band along the length or top of the container.
4. 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.
5. Adhesive must be completely used within the product's recommended work life.
6. Alternate dispense amounts may be used depending on the application requirements.
7. Apply enough adhesive to achieve a 25 to 50  $\mu\text{m}$  wet bondline thickness, dispensed with approximately 25 to 50 % filleting on all sides of the die.
8. Star or crossed shaped dispense patterns will yield fewer bondline voids than the matrix style of dispense pattern.

#### 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

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

#### Disclaimer

##### 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