

LOCTITE ABLESTIK 71-1D

April 2014

PRODUCT DESCRIPTION

LOCTITE ABLESTIK 71-1D provides the following product characteristics:

Technology	Polyimide
Appearance	Silver
Cure	Heat cure
pH	5.7
Product Benefits	<ul style="list-style-type: none"> • Excellent adhesion • Able to withstand high processing temperatures • Contains solvent (NMP)
Application	Die attach
Filler Type	Silver
Key Substrates	Most metals

LOCTITE ABLESTIK 71-1D electrically conductive adhesive is designed for die attach applications.

TYPICAL PROPERTIES OF UNCURED MATERIAL

Thixotropic Index (0.5/5 rpm)	2.0
Viscosity, Brookfield CP51, 25 °C, mPa·s (cP):	
Speed 5 rpm	4,700
Shelf Life @ -40°C (from date of manufacture), days	365

TYPICAL CURING PERFORMANCE

Cure Schedule

30 minutes ramp to 150°C + 30 minutes @ 275°C

The polyimide resin in this material is solvent borne. Observe recommended cure conditions to remove the solvent for cure. The initial cure stage will drive off the solvent, while the subsequent 275°C will imidize (cure) the resin. An extended 150°C dry cycle may be employed if the recommended 30-minute cycle produces an unacceptable amount of voiding.

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

Extractable Ionic Content, ppm:	
Chloride (Cl-)	<5
Sodium (Na+)	<10
Potassium (K+)	<5
Water Extract Conductivity, µmhos/cm	15

Electrical Properties

Volume Resistivity, ohms-cm	0.001
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TYPICAL PERFORMANCE OF CURED MATERIAL

Miscellaneous

Die Shear Strength:

2 x 2 mm Si die on Ag LF:		
@ 250°C	N/mm ²	11
	(psi)	(1,600)

Lap Shear Strength, Al to Al:

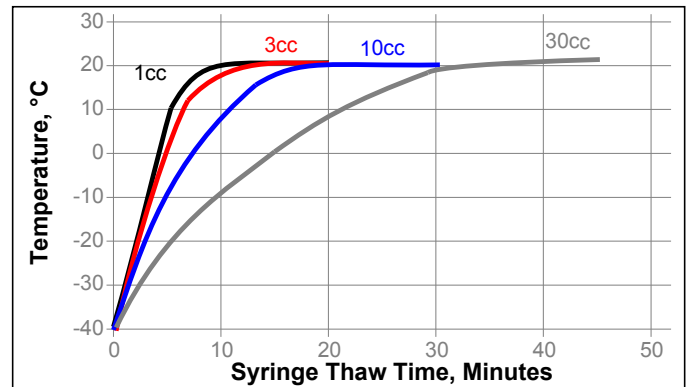
@ 25°C	N/mm ²	4.5
	(psi)	(>650)

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.
3. Refer to the Syringe Thaw time chart for the thaw time recommendation.
4. 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.
5. DO NOT re-freeze. Once thawed to -40°C, the adhesive should not be re-frozen.



Homogenization by Rolling (Jars Only)

Adhesive that appears to have separated should not be used without remixing. Separation of silver from resin is indicated by the presence of an amber band along the length or top of the container. Any product showing evidence of separation should be rolled prior to use to maintain homogeneity. These jars should be rolled for a minimum of 8 hours at 5 rpm.

DIRECTIONS FOR USE

1. Thawed material 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 enough adhesive to achieve a 25 to 50 µm wet bondline thickness, dispensed with approximately 25 to 50 % filleting on all sides of the die.
4. Alternate dispense amounts may be used depending on the application requirements.
5. Star or crossed shaped dispense patterns will yield fewer bondline voids than the matrix style of dispense pattern.
6. To maintain the rheology of the material, care must be exercised to prevent the evaporation of solvent during storage, handling and application. Placing an airtight enclosure over the stamping or screening equipment with an open container of NMP inside will significantly reduce the evaporation rate of the NMP from the adhesive during application.

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. We recommend that syringes be stored frozen in a vertical position.

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

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

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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