

LOCTITE ABLESTIK 561K

March 2019

PRODUCT DESCRIPTION

LOCTITE ABLESTIK 561K provides the following product characteristics:

Technology	Epoxy Film
Appearance	White
Cure	Heat cure
Product Benefits	- Thermally conductive - Flexible for Bonding Mismatched Adherends - Reworkable - Passes NASA outgassing
Application	Assembly
Carrier Type	Glass fabric
Film Thickness	100 to 250µ (25µ carrier) 125 to 200µ (50µ carrier) 305µ (101µ carrier)
pH	8
Typical Assembly Applications	Substrate attach and Heat sink bonding

LOCTITE ABLESTIK 561K is designed for substrate attach and heat sink bonding. This adhesive film is designed for bonding materials with severely mismatched coefficients of thermal expansion. All data and results will vary with different thicknesses.

LOCTITE ABLESTIK 561K passes NASA outgassing standards.

TYPICAL PROPERTIES OF UNCURED MATERIAL

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

TYPICAL CURING PERFORMANCE

Cure Schedule

30 minutes @ 150°C

Alternate Cure Schedule

2 hours @ 125°C

Percent Volatiles

10 x 10cm sample @ 120°C for 30 minutes, % 0.16

Curing film adhesives under pressure to ensure proper wetting of the adherend surfaces is recommended. Pressure requirements will vary from (2 to 200 psi) depending on the severity of the adherends warpage and the stiffness of the adherends. Temperatures are recommended are at the bondline.

TYPICAL PROPERTIES OF CURED MATERIAL

Physical Properties

Coefficient of Thermal Expansion, ppm/°C:	
Below Tg	85
Above Tg	300
Glass Transition Temperature, °C	55
Thermal Conductivity @ 121°C, W/(m-K)	0.9
Tensile Modulus, DMTA :	
@ -65 °C	N/mm ² 6,138 (psi) (890,000)
@ 25 °C	N/mm ² 4,345 (psi) (630,000)
@ 150 °C	N/mm ² 2,000 (psi) (290,000)
@ 250 °C	N/mm ² 1,862 (psi) (270,000)
Extractable Ionic Content, @ 100°C:	
Chloride (Cl-)	110
Sodium (Na+)	35
Potassium (K+)	9
Water Extract Conductivity, µmhos/cm	110
Weight Loss @ 300°C, %	0.34
Moisture Absorption @ Saturation, wt. % @ 85°C/85%RH	0.9

Electrical Properties

Volume Resistivity, ohms-cm	9.1×10 ¹²
Dielectric Strength, volts/µm	820/25
Dielectric Constant @ 1kHz	5.7
Dissipation Factor @ 1kHz	0.012

TYPICAL PERFORMANCE OF CURED MATERIAL

Lap Shear Strength :

Al to Al with 1.27cm overlap @ 25°C	N/mm ² 23 (psi) (3,300)
Au to Au with 1.27cm overlap @ 25°C	N/mm ² 26 (psi) (3,700)

GENERAL INFORMATION

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

THAWING:

1. Allow material to reach room temperature before use.
2. DO NOT open the package before contents reach ambient temperature.
3. Any moisture that collects on the thawed package should be removed prior to opening the package.

DIRECTIONS FOR USE

1. Place precut adhesive film between clean surfaces to be bonded.
2. Assemble components.
3. Apply spring loaded clamp or dead weight to provide continuous pressure of at least 2 to 10 psi during cure cycle.
4. Place assembly in a preheated oven and cure at the

recommended cure schedule.

Rework Procedure

1. Heat component to 125°C.
2. Slide a thin blade between bonded surfaces.

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:

LOCTITE ABLESTIK film products can be stored at -40°C for up to one year. The shelf life of the film is only valid when the material has been stored at the specified storage conditions. Incorrect storage conditions will degrade the performance of the material in final cured properties. Avoid flexing film when frozen.

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.

Any liability in respect of the information in the Technical Data Sheet or any other written or oral recommendation(s) regarding the concerned product is excluded, except if otherwise explicitly agreed and except in relation to death or personal injury caused by our negligence and any liability under any applicable mandatory product liability law.

In case products are delivered by Henkel Belgium NV, Henkel Electronic Materials NV, Henkel Nederland BV, Henkel Technologies France SAS and Henkel France SA please additionally note the following:

In case Henkel would be nevertheless held liable, on whatever legal ground, Henkel's liability will in no event exceed the amount of the concerned delivery.

In case products are delivered by Henkel Colombiana, S.A.S. the following disclaimer is applicable:

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. 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.

Any liability in respect of the information in the Technical Data Sheet or any other written or oral recommendation(s) regarding the concerned product is excluded, except if otherwise explicitly agreed and except in relation to death or personal injury caused by our negligence and any liability under any applicable mandatory product liability law.

In case products are delivered by Henkel Corporation, Resin

Technology Group, Inc., or Henkel Canada, Inc. the following disclaimer is applicable:

The data contained herein are furnished for information only and are believed to be reliable. We cannot assume responsibility for the results obtained by others over whose methods we have no control. It is the user's responsibility to determine suitability for the user's purpose of any production methods mentioned herein and to adopt such precautions as may be advisable for the protection of property and of persons against any hazards that may be involved in the handling and use thereof. In light of the foregoing, **Henkel Corporation specifically disclaims all warranties expressed or implied, including warranties of merchantability or fitness for a particular purpose, arising from sale or use of Henkel Corporation's products. Henkel Corporation specifically disclaims any liability for consequential or incidental damages of any kind, including lost profits.** The discussion herein of various processes or compositions is not to be interpreted as representation that they are free from domination of patents owned by others or as a license under any Henkel Corporation patents that may cover such processes or compositions. We recommend that each prospective user test his proposed application before repetitive use, using this data as a guide. This product may be covered by one or more United States or foreign patents or patent applications.

Trademark usage

Except as otherwise noted, all trademarks in this document are trademarks of Henkel Corporation in the U.S. and elsewhere. ® denotes a trademark registered in the U.S. Patent and Trademark Office.

Reference 0.5