

LOCTITE ABLESTIK 5025E

April 2014

PRODUCT DESCRIPTION

LOCTITE ABLESTIK 5025E provides the following product characteristics:

Technology	Epoxy Film
Appearance	Silver
Cure	Heat cure
Product Benefits	<ul style="list-style-type: none"> Thin, uniform bondline control Provides RF/EMI shielding Electrically conductive in x, y, z axes Excellent electrical and thermal conductivity
Application	Die attach
Adhesive Film Thickness	4 mil
Typical Package Application	Microwave circuitry and Heat sink attach
Filler Type	Silver
pH	6.0

LOCTITE ABLESTIK 5025E unsupported epoxy adhesive film is ideal for bonding "hot" devices onto heat sinks in applications where electrical insulation is not required.

TYPICAL PROPERTIES OF UNCURED MATERIAL

Work Life @ 25°C, days	91
Shelf Life @ 5°C (from date of manufacture), days	183

TYPICAL CURING PERFORMANCE

Cure Schedule

30 minutes @ 150°C

Alternative Cure Schedule

2 hours @ 125°C

Weight Loss on Cure

10 x 10 mm Si die on glass slide, % 0.15

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 T _g , ppm/°C	65
Above T _g , ppm/°C	150
Glass Transition Temperature (T _g) by TMA, °C	90
Thermal Conductivity @ 121°C, W/(m-K)	6.5

Tensile Modulus, DMTA :

@ -65 °C	N/mm ² 5,400 (psi) (790,000)
@ 25 °C	N/mm ² 3,700 (psi) (530,000)
@ 150 °C	N/mm ² 49 (psi) (7,100)
@ 250 °C	N/mm ² 28 (psi) (4,000)

Extractable Ionic Content, @ 100°C ppm:

Chloride (Cl ⁻)	50
Sodium (Na ⁺)	30
Potassium (K ⁺)	5

Water Extract Conductivity, μmhos/cm 15

Moisture Absorption @ Saturation, wt. % @ 85°C/85°RH 0.5

Electrical Properties

Volume Resistivity, ohms-cm	≤0.0005
Bond Joint Resistance, ohms/0.5 sq inch	<0.002

TYPICAL PERFORMANCE OF CURED MATERIAL

Shear Strength

Die Shear Strength @ 25 °C:

2 X 2 mm Si die on Ag/Cu LF, kg-f	13
Lap Shear Strength, Al to Al	N/mm ² 13 (psi) (>2,000)

GENERAL INFORMATION

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

THAWING:

- It is recommended that the film be kept in its original packaging and should be handled with care. Any unnecessary external force to the box or the film itself such as bending and/or flexing should be avoided.

It is recommended that the film be thawed to room temperature in its original packaging. The recommended thawing time is: 6 hours minimum @ +5 to 25°C.

DIRECTIONS FOR USE

- LOCTITE ABLESTIK 5025E adhesive film is unsupported.
- Handle carefully to avoid any stretching or flexing when frozen.
- It may be helpful during handling to keep at least one sheet of release paper attached.
- Preheat surface to be bonded to approximately 45°C.
- Remove release paper from one side of the adhesive film.
- Apply film to one of the bonding surfaces.
- Remove any trapped air by pressing on the surface.

8. Allow device to cool to room temperature.
9. Remove the release paper from the other side of the adhesive film. Attach the remaining adherend.
10. Apply spring loaded clamp or dead weight to provide continuous pressure of at least 2 to 10 psi during cure cycle.
11. Place assembly in a preheated oven and cure at the recommended cure schedule.

NOTE: This adhesive film is not recommended for use on bare aluminum surfaces. Poor ohmic contact will result.

AVAILABILITY

1. LOCTITE ABLESTIK 5025E adhesive is available in die cut preforms or sheet stock.
2. This material is only available with 5011 certification.

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: 5°C. Storage below 5°C or greater than 5°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.

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 Corporation, 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 0.4