

LOCTITE® ABLESTIK ATB 100U1N

August 2024

PRODUCT DESCRIPTION

LOCTITE® ABLESTIK ATB 100U1N provides the following product characteristics:

Technology	Epoxy film
Appearance	Transparent
Product benefits	<ul style="list-style-type: none"> Non-conductive Fast cure Thin bondline Excellent gap filling ability L2/260°C performance
pH	3.5
Application	Die attach
Filler type	Silica
Carrier type	Non UV PSA dicing tape (6107)
Carrier thickness, µm	85
Adhesive thickness, µm	10 to 40
Wafer size, in	8 and 12
Typical package application	Die to Substrate and Die to Die stack

LOCTITE® ABLESTIK ATB 100U1N adhesive film is formulated for use in wafer lamination processes. It combines process ease with the proven reliability.

TYPICAL PROPERTIES OF UNCURED MATERIAL

Work life @ 25°C, days	30
Shelf life @ 5°C, (from date of manufacture), days	274

TYPICAL PROCESS DATA

Wafer backside lamination

Temperature, °C	65 - 70
Pressure, psi	40
Taping duration, ft/minute	1

Chip attach

Temperature, °C	100 - 120
Pressure, kg-f	0.5 - 2
Attach duration, seconds	1 - 2

TYPICAL CURING PERFORMANCE

Recommended cure schedule

30 minute ramp to 120°C + 30 minutes @ 120°C

Alternate cure schedule

30 minute ramp to 90°C + 30 minutes @ 90°C +
30 minute ramp to 120°C + 30 minutes @ 120°C

The above cure profiles are guideline recommendations. These 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, TMA,
ppm/°C:

Below Tg	62
Above Tg	238

Glass transition temperature, (Tg) by
TMA, °C

75

Tensile Modulus, DMTA

@-65°C	N/mm ² (psi)	2,330 (337,940)
@25°C	N/mm ² (psi)	875 (126,880)
@100°C	N/mm ² (psi)	40 (5,360)
@150°C	N/mm ² (psi)	3.0 (385)
@200°C	N/mm ² (psi)	1.0 (175)
@250°C	N/mm ² (psi)	(2.0)

Extractable ionic content,

Chloride (Cl-)	<10
Fluoride (F-)	<10
Sodium (Na+)	<10
Potassium (K+)	<10

Weight loss @ 300°C, TGA, wt %

<1

Moisture absorption, @Saturation,
85°C/85%RH, wt %

1.5

Thermal conductivity, W/(m-K)

0.21

Electrical properties

Volume resistivity, ohm-cm

7.76 x 10¹³

Dielectric strength, V/mil

1,111

TYPICAL PERFORMANCE OF CURED MATERIAL

Die Shear strength vs temperature, kg-f

2.5 x 2.5 mm Si die frontside

@25°C 40

@260°C 2

GENERAL INFORMATION**Please consult the Safety Data Sheet (SDS) for safe handling information of this product.****Directions for use**

1. Ensure all surfaces to be bonded are free from surface contamination.
2. Adhesive must be completely used within the product's recommended work life.
3. Remove the tape reel from the moisture-resistant package and load into the tape application machine.
4. Store unused adhesive film in the original sealed moisture resistant package until needed.

Storage

This adhesive film should be stored at 5°C, in its original moisture resistant packaging. Partially used reels should be stored under dry conditions at 5°C.

To minimize moisture absorption, we recommend storing the adhesive film in the sealed moisture-resistant package until needed.

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 the specifications of this product.

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

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, 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 1

Mouser Electronics

Authorized Distributor

Click to View Pricing, Inventory, Delivery & Lifecycle Information:

[Loctite:](#)

[2384865](#)