

LOCTITE ABLESTIK 2025D-NS

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PRODUCT DESCRIPTION

LOCTITE ABLESTIK 2025D-NS provides the following product characteristics:

Technology	Proprietary Hybrid Chemistry
Appearance	red
Cure	Heat cure
Product Benefits	<ul style="list-style-type: none"> • Low stress • Low moisture absorption • High cohesive strength • Thin bondline • Ultra-fine filler system • Non-conductive
Application	Die attach
Filler Type	Silica
pH	3.5
Typical Package Application	PBGA, FlexBGA and Die to Die

LOCTITE ABLESTIK 2025D-NS die attach adhesive is designed for use in array and chip scale packaging.

TYPICAL PROPERTIES OF UNCURED MATERIAL

Thixotropic Index (0.5/5 rpm)	5.0
Viscosity, Brookfield CP51, 25 °C, mPa·s (cP):	
Speed 5 rpm	11,500
Work Life @ 25°C, hours:	
10 syringes	24
Shelf Life @ -40°C (from date of manufacture), days	365

TYPICAL CURING PERFORMANCE

Cure Schedule

30 minute ramp to 175°C + 15 minutes @ 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 :	
Below Tg, ppm/°C	54
Above Tg, ppm/°C	166
Glass Transition Temperature (Tg) by TMA, °C	-32
Thermal Conductivity, W/(m·K)	0.4

Tensile Modulus, DMTA :

@ -65 °C	N/mm ² 4,750 (psi) (690,000)
@ 25 °C	N/mm ² 160 (psi) (22,700)
@ 150 °C	N/mm ² 20 (psi) (3,100)
@ 250 °C	N/mm ² 70 (psi) (10,700)

Extractable Ionic Content, ppm:

Chloride (Cl ⁻)	<10
Sodium (Na ⁺)	<10
Potassium (K ⁺)	<10
Water Extract Conductivity, μmhos/cm	55
Weight Loss @ 300°C, %	4.0
Moisture Absorption @ Saturation, wt.% @ 85°C/85%RH	0.44

TYPICAL PERFORMANCE OF CURED MATERIAL

Die Shear Strength :

2 X 2 mm Si die, kg-f,

Substrate	@25°C
SPCLF	10.0

Die Shear Strength vs Temperature, kg-f:

3 X 3 mm Si die, kg-f,

Substrate	@25°C	@200°C	@250°C
PBGA	14.1	2.5	1.8

Chip Warpage vs Chip Size:

0.38 mm thick Si die on SPCLF @ 25°C, μm

Chip Size:	Warpage:
12.7 x 12.7	9.0

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 -40°C, the adhesive should not be re-frozen.

DIRECTIONS FOR USE

1. Thawed adhesive 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. Adhesive must be completely used within the product's recommended work life.
4. 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.
5. Alternate dispense amounts may be used depending on the application requirements.
6. 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

$$(^{\circ}\text{C} \times 1.8) + 32 = ^{\circ}\text{F}$$

$$\text{kV/mm} \times 25.4 = \text{V/mil}$$

$$\text{mm} / 25.4 = \text{inches}$$

$$\text{N} \times 0.225 = \text{lb}$$

$$\text{N/mm} \times 5.71 = \text{lb/in}$$

$$\text{N/mm}^2 \times 145 = \text{psi}$$

$$\text{MPa} = \text{N/mm}^2$$

$$\text{MPa} \times 145 = \text{psi}$$

$$\text{N}\cdot\text{m} \times 8.851 = \text{lb}\cdot\text{in}$$

$$\text{N}\cdot\text{m} \times 0.738 = \text{lb}\cdot\text{ft}$$

$$\text{N}\cdot\text{mm} \times 0.142 = \text{oz}\cdot\text{in}$$

$$\text{mPa}\cdot\text{s} = \text{cP}$$

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