

LOCTITE® ABLESTIK ATB 100MD6N

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PRODUCT DESCRIPTION

LOCTITE® ABLESTIK ATB 100MD6N provides the following product characteristics:

Technology	Epoxy film
Appearance	White
Application	Semiconductor film; Non-Conductive Die Attach film
Filler type	Silica
Carrier type	Non UV PSA adhesive (PSA1)
Carrier thickness, µm	87
Adhesive thickness, µm	7 to 25
Wafer size, in	8 and 12
Typical package application	Discrete, IC, Chip stack packages, Die to substrate and Die to die stack
Product benefits	<ul style="list-style-type: none"> • SVHC free, REACH compliance • Excellent MSL performance • High thermal budget tolerance • Skip cure process • DBG (Dicing Before Grinding) and SDBG (Stealth Dicing Before Grinding) technology usable

LOCTITE® ABLESTIK ATB 100MD6N adhesive film is formulated for use in wafer lamination processes or as a preform decal. It is designed for use in both mother/daughter die in stack packages.

TYPICAL PROPERTIES OF UNCURED MATERIAL

Thermal budget , hours	
@150°C	6
@175°C	2
Work life @ 25°C, (30 days before lamination), days	60
Shelf Life @ 5°C, (from date of manufacture), days	365

TYPICAL PROCESS DATA

Wafer backside lamination

Temperature, °C	65-75
Pressure, psi	30-70
Taping duration, ft/minute	2-6

Chip attach

Temperature, °C	120
Pressure, kg-f	1.5
Attach duration, seconds	1

TYPICAL CURING PERFORMANCE

Recommended cure schedule

SkipCure™

Alternate cure schedule

30-minutes ramp to 125°C + 15 to 30 minutes @ 125°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	58
Above Tg	182

Glass transition temperature, (Tg), °C

24

Tensile Modulus, DMTA:

@-65°C	N/mm ²	4,580
	(psi)	(664,273)
@25°C	N/mm ²	2,427
	(psi)	(352,007)
@100°C	N/mm ²	24.3
	(psi)	(3,527)
@150°C	N/mm ²	14.4
	(psi)	(2,093)
@200°C	N/mm ²	9.0
	(psi)	(1,299)
@250°C	N/mm ²	5.7
	(psi)	(823)

Extractable ionic content, ppm:

Chloride (Cl-)	2.1
Sodium (Na+)	0.6
Potassium (K+)	< 0.5
Weight loss @ 250°C, %	0.62
Moisture absorption, wt. %	1.5

Adhesion properties

Die shear strength, kg-f

2 x 2 mm, Si die on BT substrate	
@260°C	0.16
2 x 2 mm, Si die on Cu leadframe	
@260°C	0.9
2 x 2 mm, Si die on Si die	
@260°C	0.55

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

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

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