LOCTITE®

Technical Data Sheet

LOCTITE ABLESTIK ABP 8068TA

March 2018

PRODUCT DESCRIPTION

LOCTITE ABLESTIK ABP 8068TA provides the following product characteristics:

Technology	Semi-sintering
Appearance	Grey Liquid
Filler Type	Silver
Cure	Heat cure
Product Benefits	• One component • Dispensable • Printable • Excellent workability • Low sintering temperature • Good sintering properties when used on Ag, PPF, Au and Cu substrates • High thermal stability • Good toughness • High reliability • Solder replacement • Void-free bondline
Application	Semiconductor, Conductive adhesive
Typical Package Application	QFN, LGA, HBLED

LOCTITE ABLESTIK ABP 8068TA is a semi-sintering die attach adhesive designed for semiconductor packages requiring high thermal and electrical conductivity. This material's epoxy assisted sintering formulation is designed to provide high adhesion, high thermal and low stress properties which are essential for thermal and reliability performances of high end power packages. The thermal performance of LOCTITE ABLESTIK ABP 8068TA is comparable to a solder paste material. In conventional box oven curing, it will cure at 1 hour at 200ºC or 175ºC.

TYPICAL PROPERTIES OF UNCURED MATERIAL

Thixotropic Index (0.5/5 rpm)	6.0
Viscosity, Brookfield CP51, 25 °C, mPa·s (cP):	
Speed 5 rpm	9,000
Work Life @ 25°C, hours	24
Shelf Life @ -40ºC , days	365
Open time, hours	2
Flash Point - See SDS	

TYPICAL CURING PERFORMANCE

Cure Schedule

For the die size <5 x 5 mm

- 20 minutes ramp from 25°C to 130°C, hold for 30 to 60 minutes; 15 minutes ramp to 200°C, hold for 60 minutes in N2 or air oven

For the die size >5 x 5 mm

- 20 minutes ramp from 25°C to 130°C, hold for 120 minutes; 15 minutes ramp to 200°C, hold for 60 minutes in N2 or air oven

Alternate Cure Schedule

Suitable for Ag, Au and PPF substrates

- 20 minutes ramp from 25°C to 130°C, hold for 30 minutes; 10 minutes ramp to 175°C, hold for 60 minutes in N2 or air oven

Weight Loss on Cure

Weight Loss on Cure, %	-4.0

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

Dynamic Tensile Modulus, DMA:		
@ -65°C	N/mm²	15,800
	(psi)	($2.29 \times 10^{+6}$)
@ 25°C	N/mm²	11,800
	(psi)	($1.71 \times 10^{+6}$)
@ 150°C	N/mm²	2,100
	(psi)	(305,000)
@ 250°C	N/mm²	1,500
	(psi)	(218,000)

Coefficient of Thermal Expansion, TMA, ppm/°C	54
Thermal Conductivity , W/(m-K)	110
Moisture Absorption, %	0.26
Extractable Ionic Content, :	
Chloride (Cl-), ppm	35
Sodium (Na+), ppm	3
Potassium (K+), ppm	3

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Electrical Properties

Volume Resistivity, ohm-cm	9.00×10^{-06}

TYPICAL PERFORMANCE OF CURED MATERIAL

Thermal Properties

In-package Thermal Resistance:

7 x 7 mm² QFN and 2.5 x 2.5 mm² Ag BSM die, K/W:

on Ag	0.504
on Cu	0.505
on PPF	0.499

Shear Strength

Die Shear Strength @ 260 °C:

1 x 1 mm die, Kg:	
on Ag	1.12
on Cu	0.9
on PPF	1.22
2 x 2 mm die, Kg:	
on Ag	7.3
on Cu	4.4
on PPF	7.2
3 x 3 mm die, Kg:	
on Ag	13.1
on Cu	10.2
on PPF	11.7
5 x 5 mm die, Kg:	
on Ag	20.2
on Cu	17.9
on PPF	15.9

Die Shear Strength @ 260 °C, after Parr bomb:

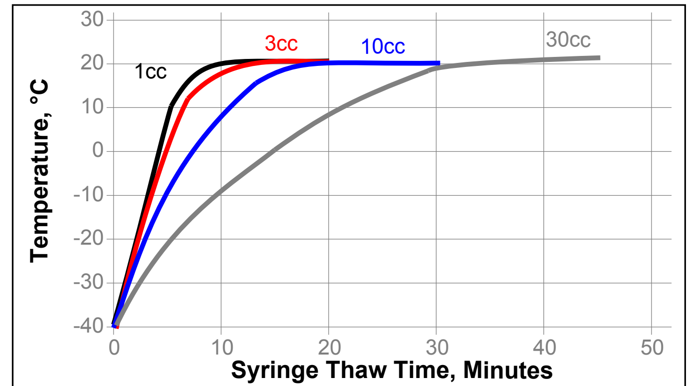
1 x 1 mm die, Kg:	
on Ag	0.99
on Cu	0.64
on PPF	1.09
2 x 2 mm die, Kg:	
on Ag	6.9
on Cu	4.6
on PPF	6.4
3 x 3 mm die, Kg:	
on Ag	14.5
on Cu	13.5
on PPF	11.4
5 x 5 mm die, Kg:	
on Ag	19.4
on Cu	20.8
on PPF	15.6

GENERAL INFORMATION

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

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. Refer to the Syringe Thaw time chart for the thaw time recommendation.
4. 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.
5. DO NOT re-freeze. Once thawed to 25°C, the adhesive should not be re-frozen.



DIRECTIONS FOR USE

1. Thawed material 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. Bondline thickness guideline

Die Size <=3 x 3 mm² , BLT control, µm	10 to 25
Die Size >3 x 3 mm² , BLT control, µm	20 to 50

The above BLTs are guideline recommendations. Optimal BLT may vary based on customers' experience and their application requirements as well as customer's package design, die dimension and cure profile.

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

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

(°C x 1.8) + 32 = °F
kV/mm x 25.4 = V/mil
mm / 25.4 = inches
N x 0.225 = lb
N/mm x 5.71 = lb/in
psi x 145 = N/mm²
MPa = N/mm²
N·m x 8.851 = lb·in
N·m x 0.738 = lb·ft
N·mm x 0.142 = oz·in
mPa·s = 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.
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Reference 2

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