

LOCTITE ABLESTIK ABP 8068TB

May 2018

PRODUCT DESCRIPTION

LOCTITE ABLESTIK ABP 8068TB provides the following product characteristics:

Technology	Semi-sintering
Appearance	Silver liquid
Filler Type	Silver
Cure	Heat cure
Product Benefits	- No resin bleed-out - One component - Good workability - Good sintering properties when used on Ag, PPF, Au and Cu substrates - High thermal stability - Good electrical stability - High reliability - Solder replacement
Application	Semiconductor, Conductive adhesive
Typical Package Application	SIP, QFN, LGA, HBLED

LOCTITE ABLESTIK ABP 8068TB is a silver-filled semi-sintering die attach adhesive designed for semiconductor packages with high thermal and electrical requirements. It is formulated with a more enhanced resin bleed control than its predecessor LOCTITE ABLESTIK ABP 8068TA. LOCTITE ABLESTIK ABP 8068TB is designed to provide high adhesion and low stress which are essential for the thermal and reliability performances of high end power packages. The thermal performance of this material is comparable to that of a solder paste product.

TYPICAL PROPERTIES OF UNCURED MATERIAL

Thixotropic Index (0.5/5 rpm)	5.5
Viscosity, Brookfield CP51, 25 °C, mPa·s (cP):	
Speed 5 rpm	11,500
Work Life @ 25°C, hours	16
Open time @ 25 °C, hours	2
Shelf Life @ -40°C (from date of manufacture), days	365
Flash Point - See SDS	

TYPICAL CURING PERFORMANCE

This product can be cured in conventional box oven @200 for 1 hour

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 120 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 120 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

Glass Transition Temperature (Tg), °C	25
Coefficient of Thermal Expansion, TMA, ppm/°C:	
Below Tg	25
Above Tg	103
Thermal Conductivity, W/(m·K)	100
Dynamic Tensile Modulus, DMA:	
@ -65°C	N/mm ² 15,600 (psi) (2.26×10 ⁻⁶)
@ 25°C	N/mm ² 12,500 (psi) (1.81×10 ⁻⁶)
@ 150°C	N/mm ² 1,100 (psi) (160,000)
@ 250°C	N/mm ² 650 (psi) (94,300)

Extractable Ionic Content, :

Chloride (Cl-), ppm	20
Sodium (Na+), ppm	1.5
Potassium (K+), ppm	0.5

Moisture Absorption, % 0.21

Electrical Properties

Volume Resistivity, ohm-cm 7×10^{-06}

TYPICAL PERFORMANCE OF CURED MATERIAL**Thermal Properties**

In-package Thermal Resistance:

7 x 7 mm² QFN and 2.5 x 2.5 mm² Au BSM die, K/W:
 on Ag 0.45
 on PPF 0.45

Shear Strength

Die Shear Strength @ 260 °C:

1 x 1 mm die, kg-f:
 on Ag 1.5
 on Cu 1.6
 on PPF 1.2

2 x 2 mm die, kg-f:
 on Ag 5.0
 on Cu 6.5
 on PPF 4.5

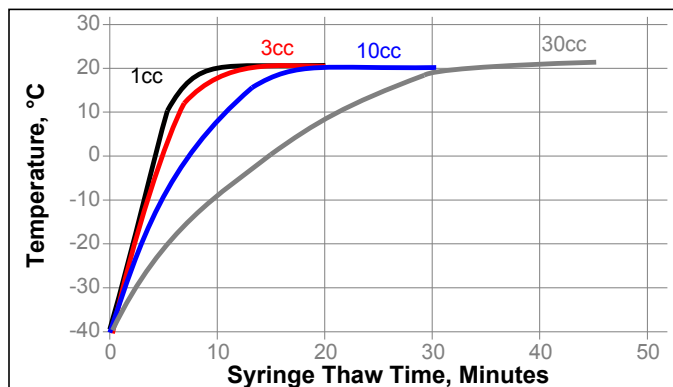
3 x 3 mm die, kg-f:
 on Ag 10.9
 on Cu 10.8
 on PPF 10.0

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. 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.

**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 $\leq 3 \times 3 \text{ mm}^2$, BLT control, μm 10 to 25
 Die Size $> 3 \times 3 \text{ mm}^2$, 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

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

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 and/or registered trademarks of Henkel and its affiliates in the U.S. and elsewhere.

Reference 1

Americas
+1.888.943.6535

Europe
+32.1457.5611

Asia
+86.21.3898.4800

For the most direct access to local sales and technical support visit: www.henkel.com/electronics