



LOCTITE® ABLESTIK ABP 8068TS

December 2024

PRODUCT DESCRIPTION

LOCTITE® ABLESTIK ABP 8068TS provides the following product characteristics:

Technology	Silver Pressure-less Sintering
Chemical type	Epoxy
Appearance	Silver-gray paste
Filler type	Silver
Product benefits	• One component • Good workability • Excellent sintering performance • Excellent RBO control • High thermal conductivity • High electrical conductivity • High reliability • High lead solder replacement
Cure	Heat cure
Application	Die attach
Typical package application	SiP, QFN, LGA
Key substrates	Au, PPF, Ag

LOCTITE® ABLESTIK ABP 8068TS is a die attach paste based on silver pressure-less sintering technology for semiconductor packages to meet high thermal/electrical requirements. The epoxy resin component enables the paste with unique properties including excellent RBO control on multiple metal finishes, high adhesion and low stress. These are essential to reliability performance for high end power packages.

LOCTITE® ABLESTIK ABP 8068TS is the improved version of LOCTITE® ABLESTIK ABP 8068TB with enhanced sintering and thermal conductivity performance. It shows better thermal performance comparing to solder paste material.

TYPICAL PROPERTIES OF UNCURED MATERIAL

Viscosity, Brookfield CP51, 25°C, mPa.s (cP)	
Speed 5 rpm	13,500
Thixotropic index, (0.5/5 rpm)	6.9
Work life @ 25°C, hours	24
Shelf life @ -40°C, days	365

TYPICAL CURING PERFORMANCE

Cure schedule

- Die size < 3 x 3 mm
 - 20 minutes ramp from 25°C to 130°C, hold for 30 to 90 minutes;
 - 15 minutes ramp to 200°C, hold for 120 minutes in N2 oven

Alternate cure schedule

- Die size >3 x 3 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 oven

Weight loss on cure

TGA, %	5.3
--------	-----

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 Bond Line thickness (BLT) guideline

Die Size ≤ 3 x 3 mm, μm	15 to 35
-------------------------	----------

The above bondline thickness (BLT) is a guideline recommendation. Optimal BLT may vary on customer experience and application requirements, as well as customer's package design, die dimension and cure profile.

TYPICAL PROPERTIES OF CURED MATERIAL

Physical properties

Coefficient of thermal expansion, TMA, ppm/°C:	
Below Tg	28
Above Tg	42
Glass transition temperature, TMA penetration, °C	10
Dynamic tensile modulus (DMA), GPa	
@ -65°C	32.0
@ 25°C	24.7
@ 150°C	13.5
@ 250°C	9.8
Moisture absorption, @ Saturation, wt. %, @ 85°C/85% RH	0.06

Thermal properties

Thermal conductivity, W/(m-K)	150
-------------------------------	-----

Electrical properties

Volume resistivity, ohms-cm	4E-06
-----------------------------	-------



Adhesion properties

High Temperature Die Shear Strength (HTDSS), Kg-f

1 x 1 mm die, 260°C

Au BSM on Ag LF	3.5
AU BSM on PPF	3.0

1 x 1 mm die, 260°C

Ag BSM on Ag LF	4.0
Ag BSM on PPF	3.2

2 x 2 mm die, 260°C

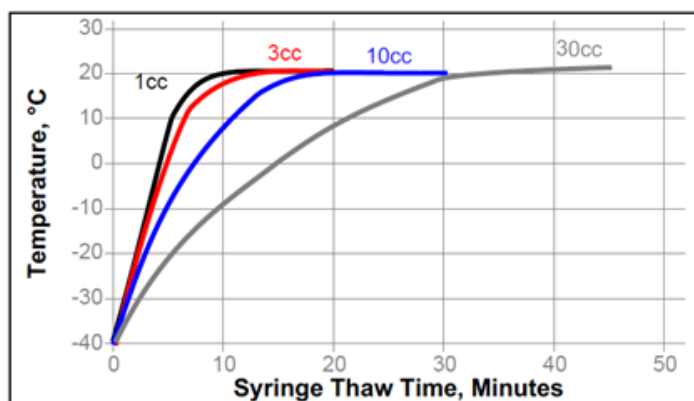
Ag BSM on Ag LF	11.0
Ag BSM on PPF	10.2

GENERAL INFORMATION

Please consult the Safety Data Sheet (SDS) for safe handling information of this product.

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.



Direction 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. Alternate dispense amounts may be used depending on the application requirements.

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 -45°C or above -35°C can adversely affect product properties.

Material removed from containers may be contaminated during use. Do not return product to the original container. Henkel 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 Henkel representative.

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 2