Technical Data Sheet

LOCTITE® ABLESTIK 8175

March 2021

PRODUCT DESCRIPTION

LOCTITE® ABLESTIK 8175 provides the following product characteristics:

Technology	Epoxy
Appearance	Silver
Cure	Heat cure
Product Benefits	• Electrically conductive • Thermally conductive • Stress absorbing • Pb-free alternative to solder • Stencil or screen printable
Application	Die attach

LOCTITE® ABLESTIK 8175 is designed for solder replacement in microelectronic interconnect applications. This adhesive may be used with thick film metallizations or traditional printed circuit board surfaces. It is capable of resolving fine pitch resolution (0.02 inch) when printed using either a stainless steel mesh screen or a metal mask stencil.

MIL-STD-883

LOCTITE® ABLESTIK 8175 meets the requirements of MIL-STD-883, Method 5011.

TYPICAL PROPERTIES OF UNCURED MATERIAL

Thixotropic Index (0.5/5 rpm)	2.0
Viscosity, Brookfield CP51, 25 °C, mPa·s (cP):	
Speed 5 rpm	55,000
Work Life @ 25°C, days	14
Shelf Life @ -40°C, days	365
Flash Point - See SDS	

TYPICAL CURING PERFORMANCE

Cure Schedule

30 minutes @ 150°C

Alternate Cure Schedule

60 minutes @ 150°C (for bondlines <1 mil thick)

Alternative Cure Schedule 2

120 minutes @ 125°C

The above cure profiles are guideline recommendations. Cure 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, ppm/°C:	
Below Tg	55
Above Tg	200
Glass Transition Temperature, °C	90
Thermal Conductivity @ 121°C, W/(m-K)	3.2
Weight Loss @ 300ºC, %	0.3
Thermal Shock @ -50 to 150°C, psi	5,000

Electrical Properties

Volume Resistivity, ohms-cm	0.0005

TYPICAL PERFORMANCE OF CURED MATERIAL

Miscellaneous

Die Shear Strength :	
Cu to Ag metallization @ 25°C, psi	6,200
Lap Shear Strength :	
Al to Al @ 25°C, psi	1,650

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. After removing from the freezer, set the syringes to stand vertically while thawing.
3. DO NOT open the container before contents reach 22°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 22°C, the adhesive should not be re-frozen.

Surface Preparation

1. Proper preparation of substrates is critical to optimize epoxy adhesive flow and adhesion. The substrate water contact angle (WCA) is a good indicator of the capillary forces that drive resin flow and adhesion. Henkel recommends industry standards of <50° for substrate WCA. This allows the epoxy resin to better wet the substrate. Users may want to establish the precise relationship between WCA and product performance for their specific application.

2. Substrate surface chemistry is impacted by the entire substrate supply chain including supplier manufacturing methods, packaging, handling, plasma treatment, storage conditions, exposure to environment, and subsequent cleaning steps.

Directions for Use

1. Apply adhesive as required.
2. This material may be applied using either a stainless steel mesh screen or a metal mask stencil.
3. The ideal deposition thickness is 0.003 to 0.005 inch.
4. Cure at one of the recommended cure schedules.

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 Henkel Representative.

Not for product specifications

The technical data contained herein are intended as reference only. Please contact your local Henkel representative for assistance and recommendations on the specifications of this product.

Conversions

(°C x 1.8) + 32 = °F
kV/mm x 25.4 = V/mil
mm / 25.4 = inches
N x 0.225 = lb/F
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

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Reference 0.5