

# LOCTITE ABLESTIK 293-21

October 2014

## PRODUCT DESCRIPTION

LOCTITE ABLESTIK 293-21 provides the following product characteristics:

<b>Technology</b>	Epoxy
<b>Appearance</b>	Black
<b>Components</b>	One-component
<b>Product Benefits</b>	<ul style="list-style-type: none"> <li>Moderate temperature cure</li> </ul>
<b>Cure</b>	Heat cure
<b>Application</b>	General assembly
<b>Substrates</b>	Gold, Nickel surfaces, Silver, Copper and Brass

LOCTITE ABLESTIK 293-21 is designed to provide strong, resilient bonds to a variety of difficult-to-bond substrates.

## TYPICAL PROPERTIES OF UNCURED MATERIAL

Mixed Viscosity, cps @ 25 °C	28,000
Work Life @ 25°C, hours	3
Shelf Life @ -40°C, days	365
Flash Point - See SDS	

## TYPICAL CURING PERFORMANCE

### Cure Schedule

- 45 minutes @ 120°C or
- 90 minutes @ 100°C or
- 4 hours @ 75°C

The above cure profile is a guideline recommendation. 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

Hardness, Shore D	80
Thermal Conductivity @ 121°C, W/(m-K)	0.25
Glass Transition Temperature (Tg), °C	36.0
Coefficient of Thermal Expansion, ppm/°C :	
Below Tg	175
Above Tg	68

### Electrical Properties

Dielectric Strength, volts/mil	900
Dielectric Constant / Dissipation Factor	3.7/0.008
Volume Resistivity @ 100°C, ohm-cm	1.0×10 <sup>13</sup>

## TYPICAL PERFORMANCE OF CURED MATERIAL

### Shear Strength

Lap Shear Strength @ 25°C:

Al to Al	N/mm <sup>2</sup>	31.0
	(psi)	(4,500)

## GENERAL INFORMATION

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

## DIRECTIONS FOR USE

- Carefully clean and dry all surfaces to be bonded.
- Remove clamp and thoroughly mix the LOCTITE ABLESTIK 293-21 epoxy adhesive system components in the handy BIPAX mixing-dispenser package until color is uniform throughout.
- Apply this completely mixed adhesive to the prepared surfaces, and gently press these surfaces together. Contact pressure is adequate for strong, reliable bonds; however, maintain contact until adhesive is completely cured.
- Some separation of components is common during shipping and storage. For this reason, it is recommended that the contents of the shipping container be thoroughly mixed prior to use.
- Some ingredients in this formulation provided in BIPAX, TRA-PAX and bulk packaging may crystallize when subjected to low temperature storage. A gentle warming cycle of 52°C for 30 minutes prior to mixing components may be necessary. Crystallized epoxy components do not react as well as liquid components and should be redissolved prior to use for best results.

## 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. Storage below minus (-)40 °C or greater than minus (-)40 °C can adversely affect product properties.**

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  
 N/mm<sup>2</sup> x 145 = psi  
 MPa = N/mm<sup>2</sup>  
 MPa x 145 = psi  
 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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