

# LOCTITE ABLESTIK A329-1

March 2017

## PRODUCT DESCRIPTION

LOCTITE ABLESTIK A329-1 provides the following product characteristics:

|                                      |                                                                                                                                                                                                                                                     |
|--------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Technology</b>                    | Epoxy                                                                                                                                                                                                                                               |
| <b>Appearance</b>                    | beige                                                                                                                                                                                                                                               |
| <b>Product Benefits</b>              | <ul style="list-style-type: none"> <li>• Non-conductive</li> <li>• Thixotropic</li> <li>• One component</li> <li>• Sag resistant</li> <li>• Chemical resistant</li> <li>• Good thermal stability</li> <li>• High temperature performance</li> </ul> |
| <b>Service Temperature</b>           | Class F (155°C)                                                                                                                                                                                                                                     |
| <b>Filler Type</b>                   | Oxide                                                                                                                                                                                                                                               |
| <b>Cure</b>                          | Heat cure                                                                                                                                                                                                                                           |
| <b>Application</b>                   | Assembly                                                                                                                                                                                                                                            |
| <b>Typical Assembly Applications</b> | bonding/insulating metals and for bonding FRP and molded phenolic parts                                                                                                                                                                             |

LOCTITE ABLESTIK A329-1 epoxy encapsulant is designed for insulating applications. It is made thixotropic to prevent sag during heat cure. LOCTITE ABLESTIK A329-1 bonds offer resistance to water, freon, solvents, acids and strong bases.

## TYPICAL PROPERTIES OF UNCURED MATERIAL

|                               |        |
|-------------------------------|--------|
| Viscosity @ 25 °C, mPa·s (cP) | 27,500 |
| Density, g/cm <sup>3</sup>    | 1.3    |
| Shelf Life:                   |        |
| @ 0 to 8°C, days              | 183    |
| @ 18 to 25°C, days            | 100    |
| @ 40°C, days                  | 14     |

Flash Point - See SDS

## TYPICAL CURING PERFORMANCE

### Gel Time

|                    |
|--------------------|
| 30 seconds @ 180°C |
| 60 seconds @ 160°C |
| 10 minutes @ 120°C |
| 30 minutes @ 100°C |

### Cure Schedule

|                    |
|--------------------|
| 1 minute @ 180°C   |
| 3 minutes @ 160°C  |
| 20 minutes @ 120°C |
| 90 minutes @ 100°C |

This product generates moderate heat during cure. No adverse exotherm effects are obtained when cured at 120°C in masses up to approximately 15 grams.

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

|                                                                           |      |
|---------------------------------------------------------------------------|------|
| Hardness, Shore D:                                                        |      |
| @ 25°C                                                                    | 80   |
| @ 120°C                                                                   | 65   |
| Coefficient of Linear Thermal Expansion, 10 <sup>-6</sup> K <sup>-1</sup> | 60   |
| Glass Transition Temperature (Tg), °C                                     | 130  |
| Thermal Conductivity, W/(m·K)                                             | 0.4  |
| Stroke Cure @ 160°C                                                       | 37.5 |

### Electrical Properties

|                             |                    |
|-----------------------------|--------------------|
| Volume Resistivity, ohm·cm: |                    |
| @ 25°C                      | 1×10 <sup>14</sup> |
| @ 120°C                     | 1×10 <sup>10</sup> |

### Viscosity and Rheological Properties

|                          |     |
|--------------------------|-----|
| Sag Resistance, cm:      |     |
| Initial (*)              | 1.5 |
| After 4 days @ 40°C      | 2.8 |
| Orifice Flow, s:         |     |
| Initial (**)             | 40  |
| After 4 days @ 40°C, max | 200 |

(\*) **Sag Resistance Test Procedure:** Machine a 1cm hemispherical groove in one long edge of a 10 x 2.5 x 0.3cm metal bar. Use this to apply a 1cm diameter bead, 10cm long, to a metal "Q" panel. Immediately hang the Q panel, vertically, in a 150°C oven. After cure, use calipers to measure the maximum distance the adhesive has flowed down the plate. If no sag occurs, the bead will still measure 1cm. A maximum reading of 1.3cm, for example, indicates that the bead has sagged or slumped 1.3cm - 1cm = 0.3cm at one point.

(\*\*) **Orifice Flow Test:** (20g Flow) Drill a 0.3cm diameter hole through the center axis of a standard 0.6cm pipe plug. Thread the plug into the discharge opening of a Semco cartridge, which has been prefilled with the adhesive and brought to 25°C ± 0.5°C. Put the cartridge into a Pyles or Semco air gun, set the air pressure at 0.3 MPa and place an aluminum weighing dish on a laboratory balance. Adjust the balance to trip when 20g have been added to the dish. Start a stopwatch when the trigger of the gun is pulled to discharge a stream of adhesive into the dish. Stop the watch when the balance tips, recording this time in seconds as the 20g orifice flow time.

**TYPICAL PERFORMANCE OF CURED MATERIAL****Miscellaneous**

Tensile Lap Shear Strength:

|          |                                         |
|----------|-----------------------------------------|
| @ 25 °C  | N/mm <sup>2</sup> 20<br>(psi) (2,900)   |
| @ 120 °C | N/mm <sup>2</sup> 17.5<br>(psi) (2,538) |

**GENERAL INFORMATION**

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

**DIRECTIONS FOR USE**

1. Bring LOCTITE ABLESTIK A329-1 to room temperature before using.
2. Complete cleaning of the substrates should be performed to remove contamination such as oxide layers, dust, moisture, salt and oils which can cause poor adhesion or corrosion in a bonded part.
3. Some filler settling 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.
4. Apply adhesive to all surfaces to be bonded and join together.
5. In most applications only contact pressure is required.

**STORAGE:**

Store in original, tightly covered containers in clean, dry areas. Storage information may be indicated on the product container labeling.

**Optimal Storage: 0 to 8 °C or between 18 to 25°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.

**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.

**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.

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