Technical Data Sheet

LOCTITE ABLESTIK AAA 3131A

September 2014

PRODUCT DESCRIPTION

LOCTITE ABLESTIK AAA 3131A provides the following product characteristics:

Technology	Acrylate
Appearance	Silver
Cure	Heat cure and Snap Cure
Product Benefits	• Electrically conductive • Thermally conductive • Solvent-free • Low bleed • Excellent adhesion to leadframes • Void-free bondline • Oven Curable • Snap curable • Hydrophobic • Thermally stable at 260ºC reflow
Application	Die attach
Filler Type	Silver

LOCTITE ABLESTIK AAA 3131A die attach adhesive is recommended for package types which require very low electrical resistivity. It is designed for use in leadframe applications.

TYPICAL PROPERTIES OF UNCURED MATERIAL

Thixotropic Index (0.5/5 rpm)	6.23
Viscosity, Brookfield CP51, 25 °C, mPa·s (cP):	
Speed 5 rpm	15,100
Work Life @ 25°C, 30% change in viscosity, hours	>24
Shelf Life @ -40°C (from date of manufacture), days	365
Flash Point - See SDS	

TYPICAL CURING PERFORMANCE

Oven Cure

60 minutes @ 175°C

Snap Cure Schedule

Seven-Zone Oven:

Temp per zone: 140ºC, 150ºC, 150ºC, 160ºC, 200ºC, 220ºC, 220ºC

Total Time, minutes 5

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) by TMA, °C		10
Coefficient of Thermal Expansion :		
Below Tg, ppm/°C		57
Above Tg, ppm/°C		190
Tensile Modulus, Rheometrics Rheometer:		
@ 25 °C	N/mm² (psi)	5,900 (856,000)
Extractable Ionic Content, @ 100°C for 16 hours ppm:		
Chloride (Cl-)		≤20
Sodium (Na+)		≤20
Potassium (K+)		≤20
Fluoride (F-)		≤20
Weight Loss @ 175ºC, TGA, %		≤1
Thermal Conductivity @ 121ºC, Modified Hot Wire Technique, W/(m-K)		4.5
Moisture Absorption 168 hours @ 85ºC/85% RH, %		0.05

Electrical Properties

Volume Resistivity, , ohm-cm	0.00005

TYPICAL PERFORMANCE OF CURED MATERIAL

Die Shear Strength:

Post Cure

7.62 X 7.62 mm (300 x 300 mil) Die on ceramic:	
Sample oven cured 15 minutes @ 175°C :	
@ 25°C, kg-f	>100
@ 260°C, kg-f	52
After 85ºC/85% RH exposure for 168 hours:	
@ 260°C, kg-f	37
3 X 3 mm (150 x 150 mil) Die on ceramic, Kg	30.5

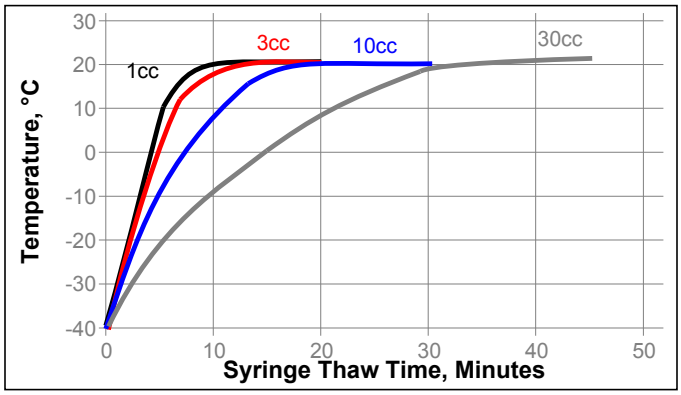
GENERAL INFORMATION

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

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. Refer to the Syringe Thaw time chart for the thaw time recommendation.
4. 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.

5. DO NOT re-freeze. Once thawed to -40°C, the adhesive should not be re-frozen.



DIRECTIONS FOR USE

1. Thawed adhesive 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. Silver-resin separation may occur if the adhesive is left out at room temperature, beyond the recommended work life.
5. Apply enough adhesive to achieve a 25 to 50 µm wet bondline thickness, dispensed with approximately 25 to 50 % filleting on all sides of the die.
6. Alternate dispense amounts may be used depending on the application requirements.
7. Star or crossed shaped dispense patterns will yield fewer bondline voids than the matrix style of dispense pattern.

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
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

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Note:
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