

LOCTITE ABLESTIK AMK-EP27

August 2022

PRODUCT DESCRIPTION

LOCTITE ABLESTIK AMK-EP27 provides the following product characteristics:

Technology	BMI Hybrid
Appearance	Silver paste
Cure	Heat cure
Application	Component assembly, Conductive die attach paste
Product Benefits	<ul style="list-style-type: none"> • One component • Low outgassing • Minimal RBO • High die shear strength • Low stress • Ideal for large die sizes • High reliability
Typical Package Application(s)	QFP, QFN and other metal leadframe packaging
Key Substrates	Cu, Ag or PPF

LOCTITE ABLESTIK AMK-EP27 silver filled, conductive die attach adhesive is recommended for use in bonding integrated circuits and components to metal substrates. Its moderate modulus, high adhesion and low stress enable robust bonding of medium/large sized dice on a wide variety of metal surfaces, including Cu, Ag and PPF.

This product is particularly suitable for packages in which tight control of resin bleed out is required. The material is hydrophobic and stable at high temperatures.

TYPICAL PROPERTIES OF UNCURED MATERIAL

Thixotropic Index (0.5/5 rpm)	4.6
Viscosity, Brookfield, 25 °C, mPa·s (cP):	
Speed 5 rpm	10,500
Work Life @ 25°C, hours	24
Shelf Life @ -40°C (from date of manufacture), days	365
Flash Point - See SDS	

TYPICAL CURING PERFORMANCE

Recommended Curing Conditions

30 minute ramp to 175°C plus 60 minutes @ 175 °C in N2 oven

Weight Loss

Weight Loss on Cure, % 2.8

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

Glass Transition Temperature (Tg) by TMA, °C	30
Coefficient of Thermal Expansion, :	
Below Tg, ppm/°C	70
Above Tg, ppm/°C	180
Extractable Ionic Content, ppm:	
Chloride (Cl-)	<10
Sodium (Na+)	<10
Potassium (K+)	<10
Moisture Absorption, %	0.3
DMA Modulus :	
@ 25°C	GPa 1.8 (N/mm ²) (1,800) (psi) (261,000)
@ 260°C	GPa 0.14 (N/mm ²) (140) (psi) (20,300)

Bulk Thermal Conductivity, W/(m-K) 1.5

Electrical Properties

Volume Resistivity, ohms-cm	0.06
Bond Joint Resistance, Au to Au, ohms	0.0012

TYPICAL PERFORMANCE OF CURED MATERIAL

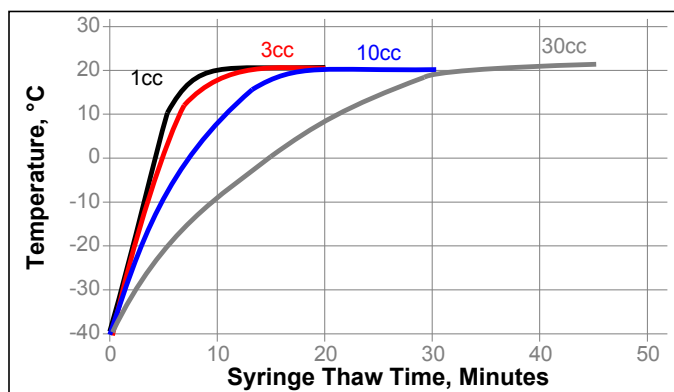
Die Shear Strength, kg-f:	
Si die on Cu LF:	
2 x 2 mm die size @ 25 °C	7
5 x 5 mm die size @ 260 °C	9
Si die on Ag LF:	
2 x 2 die size @ 25°C	8
5 x 5 die size @ 260 °C	11
Si die on PPF LF:	
2 x 2 die size @ 25 °C	7.5
5 x 5 die size @ 260 °C	9

GENERAL INFORMATION

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

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 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. 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 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 Henkel representative for assistance and recommendations on the specifications of 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 Henkel Representative.

Conversions

$(^{\circ}\text{C} \times 1.8) + 32 = ^{\circ}\text{F}$
 $\text{kV/mm} \times 25.4 = \text{V/mil}$
 $\text{mm} / 25.4 = \text{inches}$
 $\text{N} \times 0.225 = \text{lb/F}$
 $\text{N/mm} \times 5.71 = \text{lb/in}$
 $\text{N/mm}^2 \times 145 = \text{psi}$
 $\text{N/mm}^2 = \text{MPa}$
 $\text{N}\cdot\text{m} \times 8.851 = \text{lb}\cdot\text{in}$
 $\text{N}\cdot\text{m} \times 0.738 = \text{lb}\cdot\text{ft}$
 $\text{N}\cdot\text{mm} \times 0.142 = \text{oz}\cdot\text{in}$
 $\text{mPa}\cdot\text{s} = \text{cP}$

Disclaimer

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