



3119™

March 2009

PRODUCT DESCRIPTION

3119™ provides the following product characteristics:

Technology	Epoxy
Chemical Type	Epoxy
Appearance (uncured)	Black viscous liquid ^{LMS}
Components	One component - requires no mixing
Cure	Heat cure
Cure Benefit	Production - high speed curing at low temperature
Application	Bonding

3119™ cures rapidly at relatively low temperature and provides excellent adhesion on a wide range of substrates. Typical applications include the assembly of electronics components which are heat sensitive.

TYPICAL PROPERTIES OF UNCURED MATERIAL

Specific Gravity @ 25 °C	1.1 to 1.3 ^{LMS}
Yield Point, 25 °C, mPa·s	10,000 to 38,000 ^{LMS}
Cone & Plate Rheometer	
Casson Viscosity @ 25 °C, mPa·s (cP)	7,000 to 23,000 ^{LMS}
Cone & Plate Rheometer	
Pot life @ 25 °C, weeks	3

TYPICAL CURING PERFORMANCE

Recommended Curing Conditions

60 minutes @ 100 °C bondline temperature
120 minutes @ 75 °C bondline temperature

Note: Sufficient time must be added to allow the bond location to reach the desired cure temperature. Curing profiles should be developed for each device.

TYPICAL PROPERTIES OF CURED MATERIAL

Cured for 60 minutes @ 100 °C

Physical Properties:

Density @ 25 °C, g/cm³	1.2
Shore Hardness, ISO 868, Durometer D	87
Glass Transition Temperature, °C:	
(Tg) via DMA, ASTM E 1640	110
Coefficient of Thermal Expansion, ISO 11359-2, K ⁻¹ :	
alpha 1	65×10 ⁻⁶
alpha 2	210×10 ⁻⁶
Water Absorption, ISO 62, %:	
24 hours in water @ 23 °C	0.36
Elongation, at break, ISO 527-3, %	3.3
Tensile Strength, at break, ISO 527-3	N/mm² 56 (psi) (8,100)
Tensile Modulus, ISO 527-3	N/mm² 2,300 (psi) (330,000)

Electrical Properties:

Volume Resistivity, IEC 60093, Ω·cm	3.6×10 ¹⁶
Surface Resistivity, IEC 60093, Ω	1.7×10 ¹⁶
Dielectric Constant / Dissipation Factor, IEC 60250:	
10 kHz	4.0 / 0.01
1 MHz	3.8 / 0.02
10 MHz	3.7 / 0.03

TYPICAL PERFORMANCE OF CURED MATERIAL

Adhesive Properties

Cured for 60 minutes @ 100 °C

Lap Shear Strength, ISO 4587:

Steel (grit blasted)	N/mm² 24 (psi) (3,500)
Epoxyglass (thickness 1.6 mm)	N/mm² ≥10 ^{LMS} (psi) (≥1,450)

TYPICAL ENVIRONMENTAL RESISTANCE

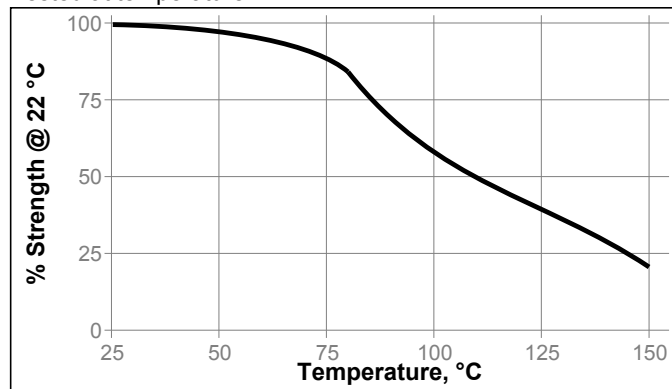
Cured for 60 minutes @ 100 °C

Lap Shear Strength, ISO 4587:

Epoxy glass (thickness 1.6 mm)

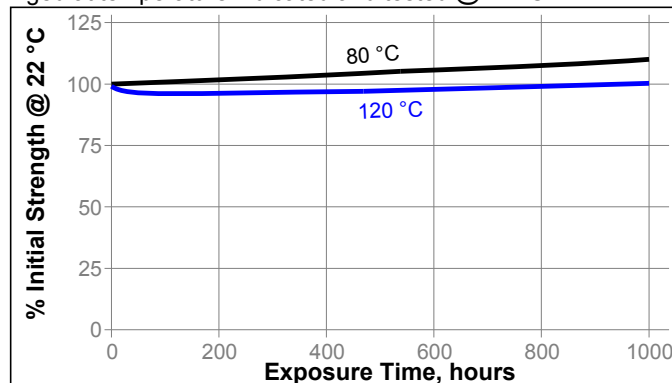
Hot Strength

Tested at temperature



Heat Aging

Aged at temperature indicated and tested @ 22 °C



Chemical/Solvent Resistance

Aged under conditions indicated and tested @ 22 °C

Environment	°C	% of initial strength		
		100 h	500 h	1000 h
90% RH	60	95	95	90
90% RH	40	95	95	95

GENERAL INFORMATION

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

Handling Information**1. Receiving Frozen Shipments**

All shipments of this product are shipped frozen with dry ice.

2. Thawing

After shipping on dry ice, the material should be stored at -15 °C to -25 °C for optimum shelf life and to minimize the occurrence of freeze thaw voids.

Loctite Material Specification^{LMS}

LMS dated January 29, 2004. Test reports for each batch are available for the indicated properties. LMS test reports include selected QC test parameters considered appropriate to specifications for customer use. Additionally, comprehensive controls are in place to assure product quality and consistency. Special customer specification requirements may be coordinated through Henkel Quality.

Storage

Store product in the unopened container in a dry location. Storage information may be indicated on the product container labeling.

Optimal Storage: -15 °C to -25 °C. Storage below minus (-)25 °C or greater than minus (-)15 °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

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

Note

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Reference 2.1