



LOCTITE® 3118™

May 2006

PRODUCT DESCRIPTION

LOCTITE® 3118™ provides the following product characteristics:

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

LOCTITE® 3118™ cures rapidly at relatively low temperature and provides excellent adhesion on a wide range of substrates. Typical applications include Memory cards, CCD/CMOS Assemblies.

TYPICAL PROPERTIES OF UNCURED MATERIAL

Specific Gravity @ 25 °C	1.6
Yield Point, 25 °C, mPa	16,000 to 50,000
Cone & Plate Rheometer	
Casson Viscosity @ 25 °C, mPa·s (cP)	7,000 to 27,000 ^{LMS}
Cone & Plate Rheometer	
Pot life @ 25 °C, weeks	3

TYPICAL CURING PERFORMANCE

Recommended Curing Conditions

20 minutes @ 80 °C bondline temperature
60 minutes @ 60 °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 @ 80 °C

Physical Properties:

Density @ 25 °C, g/cm³	1.7
Volume Shrinkage, ASTM D 792, %	3.2
Linear Shrinkage, ASTM D 792, %	1.1
Shore Hardness, ISO 868, Durometer D	88
Glass Transition Temperature, °C: (Tg) via TMA, ISO 11359-2	45
Coefficient of Thermal Expansion, ISO 11359-2, K ⁻¹ :	
alpha 1	40×10 ⁻⁶
alpha 2	130×10 ⁻⁶
Water Absorption, ISO 62, %:	
24 hours in water @ 23 °C	0.12
Elongation, at break, ISO 527-3, %	1.8
Tensile Strength, at break, ISO 527-3	N/mm² 37 (psi) (5,400)
Tensile Modulus, ISO 527-3	N/mm² 3,200 (psi) (460,000)

Electrical Properties:

Volume Resistivity, IEC 60093, Ω·cm	2.3×10 ¹⁶
Surface Resistivity, IEC 60093, Ω	7.8×10 ¹⁶
Dielectric Constant / Dissipation Factor, IEC 60250:	
10 kHz	5.5 / 0.01
1 MHz	5.2 / 0.04
10 MHz	4.9 / 0.05

TYPICAL PERFORMANCE OF CURED MATERIAL

Adhesive Properties

Cured for 30 minutes @ 80 °C

Lap Shear Strength, ISO 4587:

Steel (grit blasted)	N/mm² 22 (psi) (3,200)
Epoxyglass (thickness 1.6 mm)	N/mm² ≥7 ^{LMS} (psi) (≥1,015)

TYPICAL ENVIRONMENTAL RESISTANCE

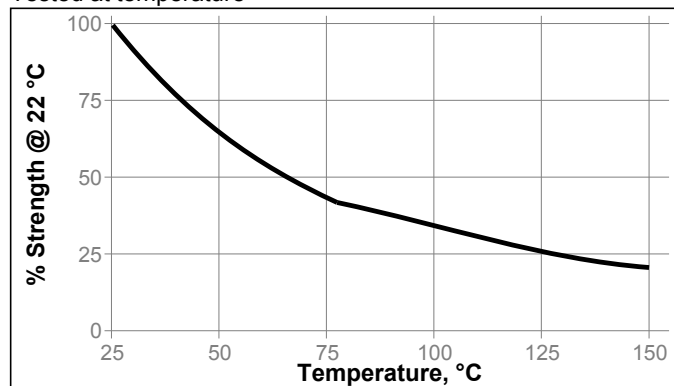
Cured for 30 minutes @ 80 °C

Lap Shear Strength, ISO 4587:

Epoxy glass (thickness 1.6 mm)

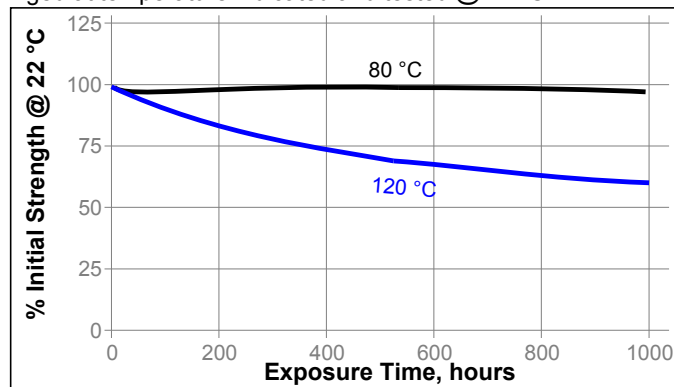
Hot Strength

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	105	105	100
90% RH	40	105	105	105

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 November 21, 2003. 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 2.0