

LOCTITE 3189UV

September 2017

PRODUCT DESCRIPTION

LOCTITE 3189UV provides the following product characteristics:

Technology	Acrylic
Chemical Type	Modified acrylate
Appearance (uncured)	Transparent green liquid ^{LMS}
Components	One component - requires no mixing
Viscosity	Medium
Cure	Ultraviolet (UV) light
Cure Benefit	Production - high speed curing
Application	Bonding
Flexibility	Enhances load bearing & shock absorbing characteristics of the bond area.

LOCTITE 3189UV cures only when exposed to UV energy. It has shown excellent adhesion to glass and metals. Typical applications include terminal pin bonding.

TYPICAL PROPERTIES OF UNCURED MATERIAL

Specific Gravity @ 25 °C	1.02
Flash Point - See SDS	
Viscosity, Brookfield - RVT, 25 °C, mPa·s (cP): Spindle 4, speed 20 rpm	3,000 to 8,000 ^{LMS}

TYPICAL CURING PERFORMANCE

LOCTITE 3189UV is cured by exposure to ultraviolet light of sufficient intensity. Surface cure is enhanced by exposure to UV light in the 220 to 260 nm range. Cure rate and ultimate depth of cure depend on light intensity, spectral distribution of the light source, exposure time and light transmittance of the substrate through which the light must pass.

Fixture Time

Fixture time is defined as the time to develop a shear strength of 0.1 N/mm².

UV Fixture Time, Glass, seconds: High pressure mercury arc light source: 6 mW/cm ² , measured @ 365 nm	≤25 ^{LMS}
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Tack Free Time

Tack Free Time is the time required to achieve a tack free surface

Tack Free Time, seconds: 100 mW/cm ² , measured @ 365 nm	45
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TYPICAL PROPERTIES OF CURED MATERIAL

Cured @ 120 mW/cm², measured @ 365 nm, for 30 seconds per side using a metal halide light source

Physical Properties

Coefficient of Thermal Expansion,
ISO 11359-2, K⁻¹:

Pre Tg (Alpha 1)	164×10 ⁻⁶
Post Tg (Alpha 2)	203×10 ⁻⁶
Glass Transition Temperature (Tg) by DMTA , ASTM E 1640, °C	64
Shore Hardness, ISO 868, Durometer D	56
Linear Shrinkage, ASTM D 792, %	3.05
Water Absorption, ISO 62, %:	
24 hours in water @ 25 °C	1.54
2 hours in boiling water	3.98
Elongation, at break, ISO 527-3, %	150
Tensile Strength, at break, ISO 527-3	N/mm ² 24.3 (psi) (3,520)
Tensile Modulus, ISO 527-3	N/mm ² 17.6 (psi) (2,550)

UV Depth of Cure, mm:

100 mW/cm ² , measured @ seconds	365	nm, for 30	1.3
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Electrical Properties

Volume Resistivity, IEC 60093, Ω·cm	3.5×10 ¹⁵
Surface Resistivity, IEC 60093, Ω·cm	>1.9×10 ¹⁷
Dielectric Breakdown Strength, IEC 60243-1, kV/mm	26.7
Dielectric Constant / Dissipation Factor, IEC 60250:	
10 kHz	3.493 / 0.0255
1 MHz	3.232 / 0.0294
10 MHz	3.163 / 0.0396

TYPICAL PERFORMANCE OF CURED MATERIAL

Adhesive Properties

Cured @ 6 mW/cm², measured @ 365 nm, for 5 minutes using a high pressure mercury arc light source

Torsional Shear Strength, ASTM D 3658: Aluminum hex button (grit blasted) to glass	N·m (lb.in.)	≥73.5 ^{LMS} (≥650)
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Cured @ 200 mW/cm², measured @ 365 nm, for 30 seconds

Tensile Strength, ISO 6922: Steel pin (grit blasted) to Glass	N/mm ² (psi)	11.1 (1,610)
Block Shear Strength, ISO 13445: Steel to Glass	N/mm ² (psi)	19.0 (2,755)

GENERAL INFORMATION

This product is not recommended for use in pure oxygen and/or oxygen rich systems and should not be selected as a sealant for chlorine or other strong oxidizing materials.

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

Directions for use:

1. This product is light sensitive; exposure to daylight, UV light and artificial lighting should be kept to a minimum during storage and handling.
2. The product should be dispensed from applicators with black feedlines.
3. For best performance bond surfaces should be clean and free from grease.
4. Cure rate is dependent on lamp intensity, distance from light source, depth of cure needed or bondline gap and light transmittance of the substrate through which the radiation must pass.
5. Cooling should be provided for temperature sensitive substrates such as thermoplastics.
6. Plastic grades should be checked for risk of stress cracking when exposed to liquid adhesive.
7. Excess uncured adhesive can be wiped away with organic solvent (e.g. Acetone).
8. Bonds should be allowed to cool before subjecting to any service loads.

Loctite Material Specification^{LMS}

LMS dated October 11, 2002. 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: -25 to -15 °C. Storage below -25°C or above -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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