



# LOCTITE<sup>®</sup> 3526<sup>™</sup>

November 2004

## PRODUCT DESCRIPTION

LOCTITE<sup>®</sup> 3526<sup>™</sup> provides the following product characteristics:

<b>Technology</b>	Acrylic
<b>Chemical Type</b>	Modified acrylic
<b>Appearance (uncured)</b>	Transparent, pale straw to amber liquid <sup>LMS</sup>
<b>Fluorescence</b>	Positive under UV light <sup>LMS</sup>
<b>Components</b>	One component - requires no mixing
<b>Viscosity</b>	Medium
<b>Cure</b>	Ultraviolet (UV)/ visible light
<b>Secondary Cure</b>	Heat
<b>Cure Benefit</b>	Production - high speed curing
<b>Application</b>	Bonding

LOCTITE<sup>®</sup> 3526<sup>™</sup> cures rapidly to form flexible, transparent bonds when exposed to ultraviolet light and/or visible light of sufficient irradiance and has shown excellent adhesion to a wide variety of substrates including glass, many plastics and most metals. The secondary cure system permits cure of product in shadowed areas.

## TYPICAL PROPERTIES OF UNCURED MATERIAL

Specific Gravity @ 25 °C	1.06
Refractive Index, ASTM D542	1.49
Flash Point - See MSDS	
Viscosity, Brookfield - RVT, 25 °C, mPa·s (cP):	
Spindle 6, speed 20 rpm	11,000 to 24,000 <sup>LMS</sup>

## TYPICAL CURING PERFORMANCE

LOCTITE<sup>®</sup> 3526<sup>™</sup> can be cured by exposure to UV and/or visible light radiation or heat. The speed and depth of cure will depend on the UV intensity measured at the product surface.

### Heat Cure

This product may be cured with heat. The bond area should be heated to 121°C and maintained at that temperature for 15 minutes.

### Fixture Time

Fixture time is defined as the time to develop a shear strength of 0.1 N/mm<sup>2</sup>.

UV Fixture Time, ISO 4587, Glass microscope slides, seconds:

Black light, Zeta <sup>®</sup> 7500 light source:	
6 mW/cm <sup>2</sup> @ 365 nm	≤5 <sup>LMS</sup>

## Tack Free Time

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

Tack Free Time, seconds:

Metal halide, UV bulb:	
30 mW/cm <sup>2</sup> @ 365 nm	≤60
50 mW/cm <sup>2</sup> @ 365 nm	≤45

Metal halide, V bulb:	
30 mW/cm <sup>2</sup> @ 365 nm	≤150
50 mW/cm <sup>2</sup> @ 365 nm	≤60

Hg Arc light source:	
50 mW/cm <sup>2</sup> @ 365 nm	≤10
100 mW/cm <sup>2</sup> @ 365 nm	≤5

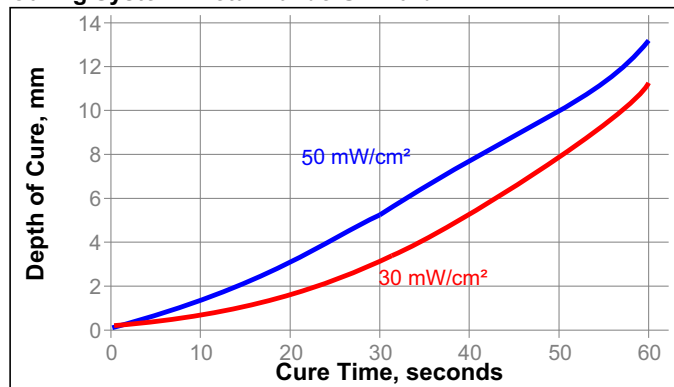
Fusion <sup>®</sup> D light source:	
50 mW/cm <sup>2</sup> @ 365 nm	≤20
100 mW/cm <sup>2</sup> @ 365 nm	≤10

Fusion <sup>®</sup> V light source:	
50 mW/cm <sup>2</sup> @ 365 nm	≤20
100 mW/cm <sup>2</sup> @ 365 nm	≤10

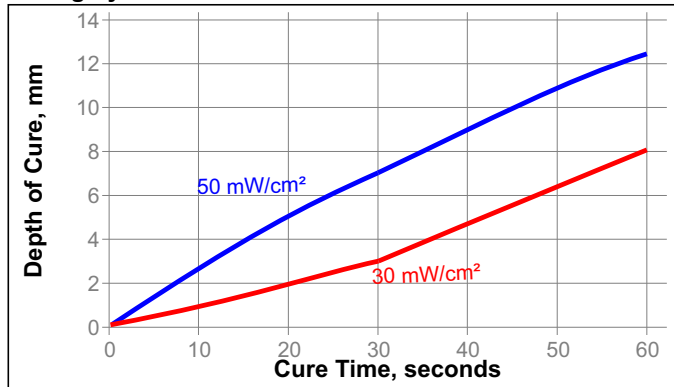
## Depth of Cure

The following graphs show the effect of light source, light intensity and exposure time on depth of cure for LOCTITE<sup>®</sup> 3526<sup>™</sup>

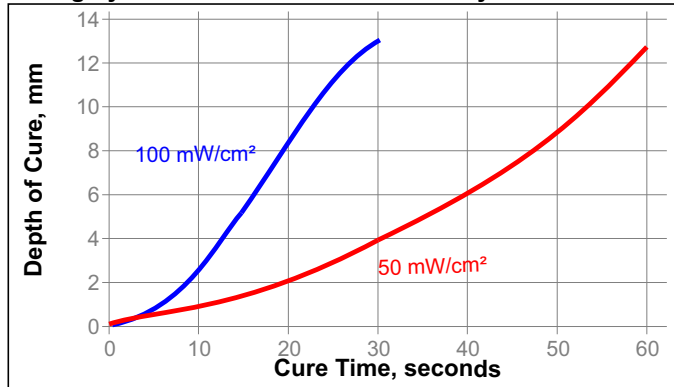
Curing System: Metal Halide-UV Bulb



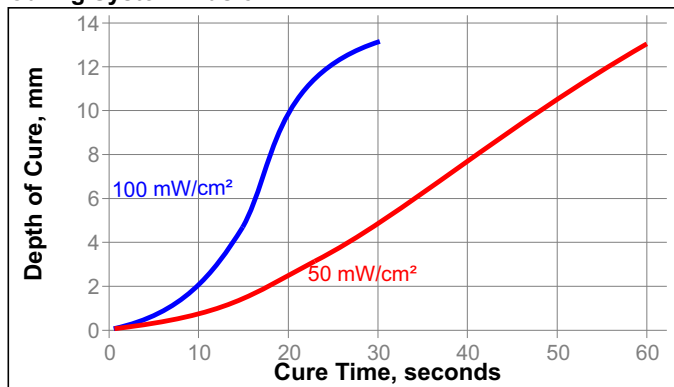
**Curing System: Metal Halide-V Bulb**



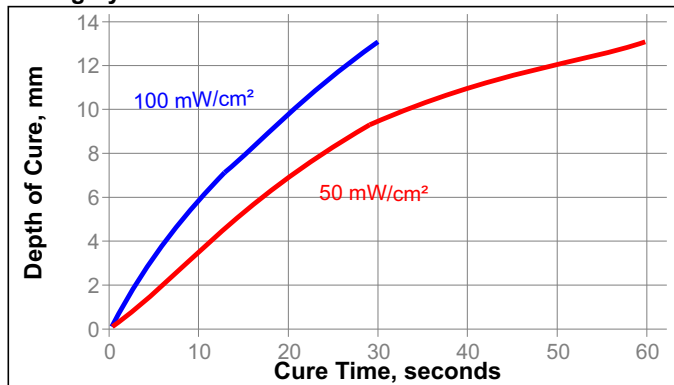
**Curing System: Medium Pressure Mercury Arc**



**Curing System: Fusion® D**



**Curing System: Fusion® V**



**TYPICAL PROPERTIES OF CURED MATERIAL**

**Physical Properties:**

Coefficient of Thermal Expansion, ASTM E 831, K <sup>-1</sup>	418×10 <sup>-6</sup>
Glass Transition Temperature, ASTM E 228, °C:	
(Tg) by TMA	36
Refractive Index	1.51
Water Absorption, ISO 62, %	5.6
Shore Hardness, ISO 868, Durometer D	62
Elongation, at break, ISO 527, %	185
Tensile Modulus, ISO 527	N/mm <sup>2</sup> 290 (psi) (42,000)
Tensile Strength, at break, ISO 527	N/mm <sup>2</sup> 23 (psi) (3,330)

**TYPICAL PERFORMANCE OF CURED MATERIAL**

**Adhesive Properties**

Cured @ 30 mW/cm<sup>2</sup> @ 365 nm for 15 seconds using a Zeta® 7400 light source

Torsional Shear Strength, ASTM D 3658:

Aluminum hex button to Glass	N·m ≥70 <sup>LMS</sup> (lb·ft) (≥51.6)
------------------------------	---

Cured @ 30 mW/cm<sup>2</sup> @ 365 nm for 30 seconds using a UV metal halide bulb

Block Shear Strength, ISO 13445:

Steel to Glass	N/mm <sup>2</sup> 10.6 (psi) (1,530)
Aluminum to Glass	N/mm <sup>2</sup> 9.1 (psi) (1,320)
Polycarbonate to Glass	N/mm <sup>2</sup> 4.1 (psi) (600)
PVC to Glass	N/mm <sup>2</sup> 5.1 (psi) (730)
ABS to Glass	N/mm <sup>2</sup> 1.5 (psi) (220)
G-10 Epoxyglass to Glass	N/mm <sup>2</sup> 6.7 (psi) (980)

Cured for 15 minutes @ 121 °C

Block Shear Strength, ISO 13445:

Steel to Glass	N/mm <sup>2</sup> 15.8 (psi) (2,300)
Aluminum to Glass	N/mm <sup>2</sup> 12.8 (psi) (1,860)

Lap Shear Strength, ISO 4587:

Steel	N/mm <sup>2</sup> 18.8 (psi) (2,720)
Aluminum	N/mm <sup>2</sup> 17.6 (psi) (2,550)

**TYPICAL ENVIRONMENTAL RESISTANCE**

Cured @ 30 mW/cm<sup>2</sup> @ 365 nm for 30 seconds using a UV metal halide bulb

Block Shear Strength, ISO 13445:

Steel to Glass

**Chemical/Solvent Resistance**

Aged under conditions indicated and tested @ 22 °C.

Environment	°C	% of initial strength	
		300 h	500 h
Air	121	85	85
Air	150	40	45
Motor oil (10W-30)	22	85	95
Unleaded gasoline	22	110	90
Condensing Humidity	50	80	25

Environment	°C	% of initial strength		
		2 h	24 h	170 h
Isopropanol	22	-----	80	-----
Boiling water	100	110	-----	-----
Water	49	-----	-----	90

**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 Material Safety Data Sheet (MSDS).**

**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. Full cure is estimated to be four to five times the fixture time.
6. For dry curing of exposed surfaces, mercury arc (Zeta® 7200 light source) or Fusion® D or H bulbs are recommended.
7. Cooling should be provided for temperature sensitive substrates such as thermoplastics.
8. Plastic grades should be checked for risk of stress cracking when exposed to liquid adhesive.
9. Excess uncured adhesive can be wiped away with organic solvent (e.g. Acetone).
10. Bonds should be allowed to cool before subjecting to any service loads.

**Loctite Material Specification<sup>LMS</sup>**

LMS dated December 6, 2000. 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: 8 °C to 21 °C. Storage below 8 °C or greater than 28 °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**

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

**Note**

The data contained herein are furnished for information only and are believed to be reliable. We cannot assume responsibility for the results obtained by others over whose methods we have no control. It is the user's responsibility to determine suitability for the user's purpose of any production methods mentioned herein and to adopt such precautions as may be advisable for the protection of property and of persons against any hazards that may be involved in the handling and use thereof. In light of the foregoing, **Henkel Corporation specifically disclaims all warranties expressed or implied, including warranties of merchantability or fitness for a particular purpose, arising from sale or use of Henkel Corporation's products. Henkel Corporation specifically disclaims any liability for consequential or incidental damages of any kind, including lost profits.** The discussion herein of various processes or compositions is not to be interpreted as representation that they are free from domination of patents owned by others or as a license under any Henkel Corporation patents that may cover such processes or compositions. We recommend that each prospective user test his proposed application before repetitive use, using this data as a guide. This product may be covered by one or more United States or foreign patents or patent applications.

**Trademark usage**

Except as otherwise noted, all trademarks in this document are trademarks of Henkel Corporation in the U.S. and elsewhere. ® denotes a trademark registered in the U.S. Patent and Trademark Office.

Fusion® is a trademark of Fusion Systems

Reference 1