Technical Data Sheet

LOCTITE® AA 3462™

March 2018

PRODUCT DESCRIPTION

LOCTITE® AA 3462™ provides the following product characteristics:

Technology	Acrylic
Chemical Type	Modified acrylic
Appearance (uncured)	Translucent, colorless to light yellow liquid[LMS]
Components	One component - requires no mixing
Viscosity	High
Cure	Ultraviolet (UV)/ visible light
Cure Benefit	Production - high speed curing
Application	Bonding, Potting or Sealing
Specific Benefit	• Flexibility enhances load bearing and shock absorbing characteristics of the bond area • Excellent resistance to thermal cycling and environmental exposure

LOCTITE® AA 3462™ is a one component UV/Visible light cure acrylic adhesive that achieves rapid cure by exposure to ultraviolet light or visible light of the appropriate wavelength. Typical applications include bonding and sealing or potting applications of glass to itself or other materials, such as metals, coated metals, rough surface decorative glass, and molded glass tableware items for the appliance market.

TYPICAL PROPERTIES OF UNCURED MATERIAL

Specific Gravity @ 25 °C	1.1
Refractive Index	1.48
Flash Point - See SDS	
Viscosity, Cone & Plate, 25 °C, , mPa·s (cP):	
Shear rate 20 s^{-1}	9,500 to 14,300[LMS]

TYPICAL CURING PERFORMANCE

LOCTITE® AA 3462™ can be cured by exposure to ultraviolet and/or visible 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.

Depth of Cure

Depth of cure, mm

Cured @ 300 mW/cm² , measured @ 320-400 nm for 15 seconds using an Electrodeless system, D bulb	>1.6[LMS]

Fixture Time

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

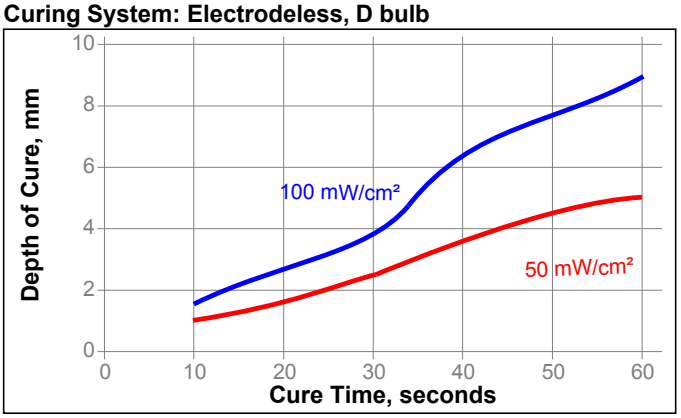
UV Fixture Time, Glass microscope slides, seconds:

Black light, Zeta® 7500 light source:	
6 mW/cm² , measured @ 365 nm	≤10[LMS]
Electrodeless, D bulb:	
30 mW/cm² , measured @ 365 nm,	≤5
50 mW/cm² , measured @ 365 nm	≤3
100 mW/cm² , measured @ 365 nm	≤3
LED Flood:	
30 mW/cm² , measured @ 405 nm	≤10
50 mW/cm² , measured @ 405 nm	≤7
100 mW/cm² , measured @ 405 nm	≤5

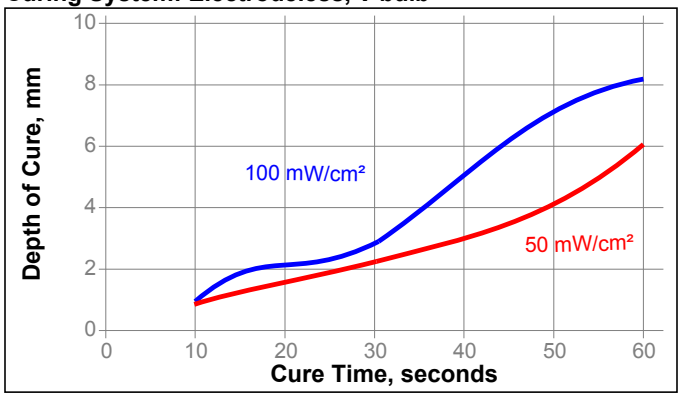
Depth of Cure vs. Irradiance (365 nm)

The following graphs show the effect of light source, light intensity and exposure time on depth of cure for LOCTITE® AA 3462™

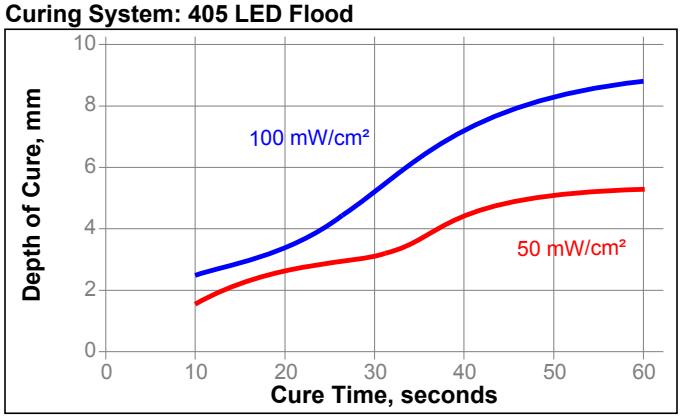
Curing System: Electrodeless, D bulb



Curing System: Electrodeless, V bulb



Curing System: 405 LED Flood



TYPICAL PROPERTIES OF CURED MATERIAL

Cured @ 100 mW/cm² , measured @ 365 nm, for 30 seconds per side using an Electrodless system, D bulb plus 24 hours @ 22 °C

Physical Properties:

Coefficient of Thermal Expansion, ISO 11359-2, K^{-1}:		
Pre Tg		145×10^{-6}
Post Tg		283×10^{-6}
Glass Transition Temperature, ISO 11357-2, °C		57
Shore Hardness, ISO 868, Durometer A		≥80[LMS]
Refractive Index		1.5
Water Absorption, ISO 62, %:		
2 hours in boiling water		2.12
Linear Shrinkage, in/in		2.1
Elongation, at break, ISO 527-3, %		>150[LMS]
Tensile Strength, at break, ISO 527-3	N/mm²	14.9
	(psi)	(2,167)
Tensile Modulus, ISO 527-3	N/mm²	102.4
	(psi)	(14,981)

TYPICAL PERFORMANCE OF CURED MATERIAL

Adhesive Properties

Cured @ 300 mW/cm² , measured @ 365 nm, for 30 seconds per side using an Electrodless system, D bulb plus 24 hours @ 22 °C

Block Shear Strength, ISO 13445:

Steel (abraded) to Glass	N/mm²	5.6
	(psi)	807
Aluminum to Glass	N/mm²	5.3
	(psi)	764
PVC to Glass	N/mm²	4.8
	(psi)	703
ABS to Glass	N/mm²	3.7
	(psi)	530
Polycarbonate to Glass	N/mm²	4.5
	(psi)	651

Cured @ 300 mW/cm² , measured @ 320-400 nm for 30 seconds using an Electrodeless system, D bulb plus 24 hours @ 22 °C

Block Shear Strength, ISO 13445:

Polycarbonate	N/mm²	≥13[LMS]
	(psi)	(≥1,885)

TYPICAL ENVIRONMENTAL RESISTANCE

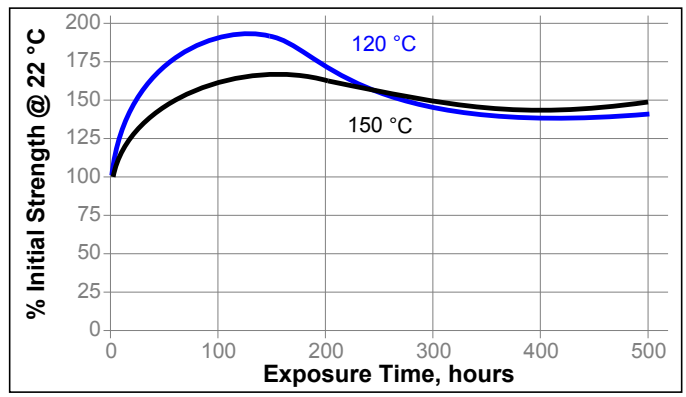
Cured @ 300 mW/cm² , measured @ 365 nm, for 30 seconds per side using an Electrodless system, D bulb plus 24 hours @ 22 °C

Block Shear Strength, ISO 13445:

Steel to Glass

Heat Aging

Aged at temperature indicated and tested @ 22°C



Chemical/Solvent Resistance

Aged under conditions indicated and tested @ 22 °C.

		% of initial strength		
Environment	**°C**	**300 h**	**500 h**	**1000 h**
Condensing Humidity	49	155	158	178
Salt fog	22	115	123	156

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. Recommended intensity for cure in an adhesive application (between substrates) is 40mW/cm² minimum (measured at the bondline) with an exposure time of 5-6 times the fixture time at this same intensity.
6. For tack free curing of exposed surfaces, higher intensity UV is required (100 mW/cm²).
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[LMS]

LMS dated January 26, 2017. 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: 2 °C to 8 °C. Storage below 2 °C or greater than 8 °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

(°C x 1.8) + 32 = °F
kV/mm x 25.4 = V/mil
mm / 25.4 = inches
µm / 25.4 = mil
N x 0.225 = lb
N/mm x 5.71 = lb/in
N/mm² x 145 = psi
MPa x 145 = psi
N·m x 8.851 = lb·in
N·m x 0.738 = lb·ft
N·mm x 0.142 = oz·in
mPa·s = cP

Reference 0.2