

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	<ul style="list-style-type: none"> 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 >1.6^{LMS}
for 15 seconds
using an Electrodeless system, D bulb

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}

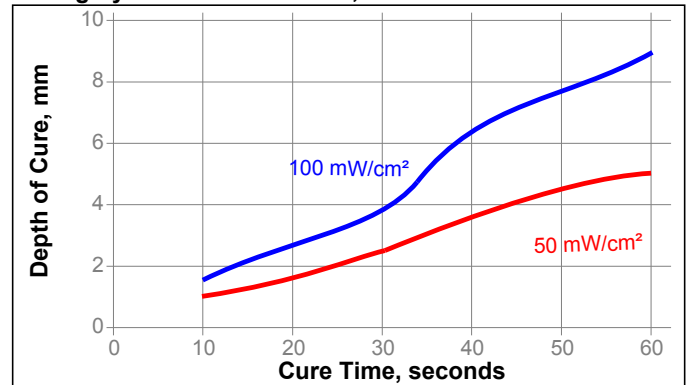
Electrodeless, D bulb:
30 mW/cm², measured @ 365 nm ≤5
50 mW/cm², measured @ 365 nm ≤3
100 mW/cm², measured @ 365 nm ≤3

LED Flood:
30 mW/cm², measured @ 405 nm ≤10
50 mW/cm², measured @ 405 nm ≤7
100 mW/cm², measured @ 405 nm ≤5

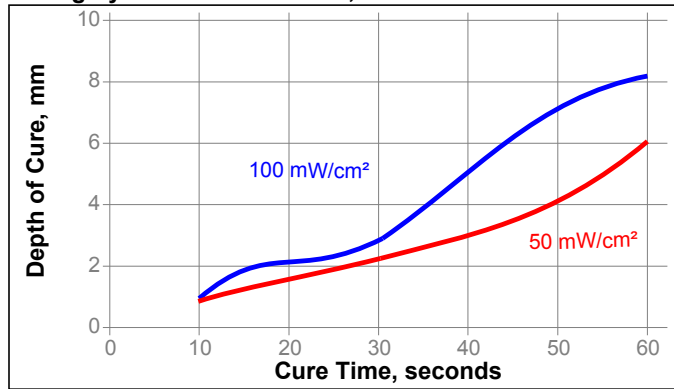
Depth of Cure vs. Irradiance (365 nm)

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



TYPICAL PERFORMANCE OF CURED MATERIAL

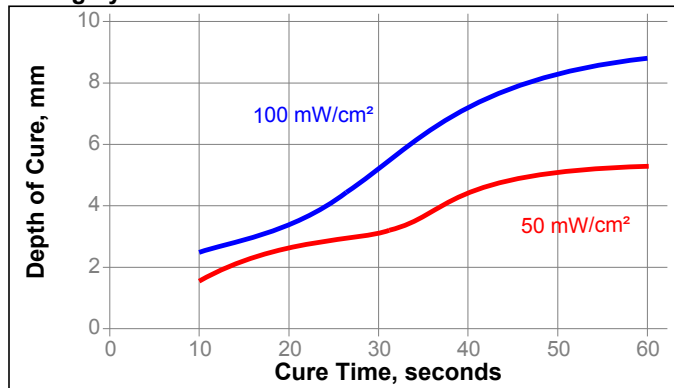
Adhesive Properties

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

Block Shear Strength, ISO 13445:

Steel (abraded) to Glass	N/mm ²	5.6
	(psi)	807
Aluminum to Glass	N/mm ²	5.3
	(psi)	764
PVC to Glass	N/mm ²	4.8
	(psi)	703
ABS to Glass	N/mm ²	3.7
	(psi)	530
Polycarbonate to Glass	N/mm ²	4.5
	(psi)	651

Curing System: 405 LED Flood



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/mm ²	≥13 ^{LMS}
	(psi)	(≥1,885)

TYPICAL ENVIRONMENTAL RESISTANCE

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

Block Shear Strength, ISO 13445:

Steel to Glass

TYPICAL PROPERTIES OF CURED MATERIAL

Cured @ 100 mW/cm², measured @ 365 nm, for 30 seconds per side using an Electrodeless 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

Shore Hardness, ISO 868, Durometer A

Refractive Index

Water Absorption, ISO 62, %:

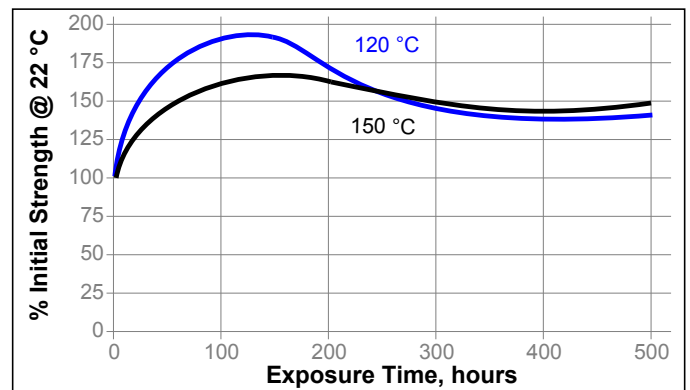
2 hours in boiling water	2.12
Linear Shrinkage, in/in	2.1

Elongation, at break, ISO 527-3, %

Tensile Strength, at break, ISO 527-3	N/mm ²	14.9
	(psi)	(2,167)
Tensile Modulus, ISO 527-3	N/mm ²	102.4
	(psi)	(14,981)

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		
		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.

Note:

The information provided in this Technical Data Sheet (TDS) including the recommendations for use and application of the product are based on our knowledge and experience of the product as at the date of this TDS. The product can have a variety of different applications as well as differing application and working conditions in your environment that are beyond our control. Henkel is, therefore, not liable for the suitability of our product for the production processes and conditions in respect of which you use them, as well as the intended applications and results. We strongly recommend that you carry out your own prior trials to confirm such suitability of our product.

Any liability in respect of the information in the Technical Data Sheet or any other written or oral recommendation(s) regarding the concerned product is excluded, except if otherwise explicitly agreed and except in relation to death or personal injury caused by our negligence and any liability under any applicable mandatory product liability law.

In case products are delivered by Henkel Belgium NV, Henkel Electronic Materials NV, Henkel Nederland BV, Henkel Technologies France SAS and Henkel France SA please additionally note the following:

In case Henkel would be nevertheless held liable, on whatever legal ground, Henkel's liability will in no event exceed the amount of the concerned delivery.

In case products are delivered by Henkel Colombiana, S.A.S. the following disclaimer is applicable:

The information provided in this Technical Data Sheet (TDS) including the recommendations for use and application of the product are based on our knowledge and experience of the product as at the date of this TDS. Henkel is, therefore, not liable for the suitability of our product for the production processes and conditions in respect of which you use them, as well as the intended applications and results. We strongly recommend that you carry out your own prior trials to confirm such suitability of our product.

Any liability in respect of the information in the Technical Data Sheet or any other written or oral recommendation(s) regarding the concerned product is excluded, except if otherwise explicitly agreed and except in relation to death or personal injury caused by our negligence and any liability under any applicable mandatory product liability law.

In case products are delivered by Henkel Corporation, Resin Technology Group, Inc., or Henkel Canada Corporation, the following disclaimer is applicable:

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 and/or registered trademarks of Henkel and its affiliates in the U.S. and elsewhere.

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