Technical Data Sheet

LOCTITE® AA 3525™

May 2024

Product description
LOCTITE® AA 3525™ provides the following product characteristics:

Technology	Acrylic
Chemical Type	Modified Acrylic
Appearance (uncured)	Transparent liquid
Fluorescence	Positive under UV light
Components	One component – requires no mixing
Viscosity	Medium
Cure	Ultraviolet (UV)/ visible light
Application	Bonding
Specific Benefits	Production - high speed curing

LOCTITE® AA 3525™ is suitable for bonding a wide variety of materials. It cures fast to form clear, colorless bonds. When cured, it offers excellent flexibility, toughness and durability to moisture exposure. It is used to bond glass, metals and plastics for industrial applications. LOCTITE® AA 3525™ is suitable for use in electric motor balancing applications.

TYPICAL PROPERTIES OF UNCURED MATERIAL

Specific Gravity @ 25 °C	1.08
Viscosity @ 25°C, mPa·s (cP) Brookfield - RVF Spindle 6, Speed 20 rpm	15,250
Color, APHA	250

TYPICAL CURING PERFORMANCE

LOCTITE® AA 3525™ can be cured by exposure to UV and/or visible light of sufficient intensity. The speed and depth of cure will depend on the UV intensity measured at the product surface.

Fixture Time
UV fixture time is defined as the light exposure time required to develop a shear strength of 0.1 N/mm².

UV Fixture Time, Glass microscope slides, seconds:

LED flood light, CL42:	
100 mW/cm², measured @ 405 nm,	5
100 mW/cm², measured @ 365 nm,	5
Black light, Zeta® 7500 light source:	
6 mW/cm², measured @ 365 nm,	5

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

Tack Free Time, seconds:

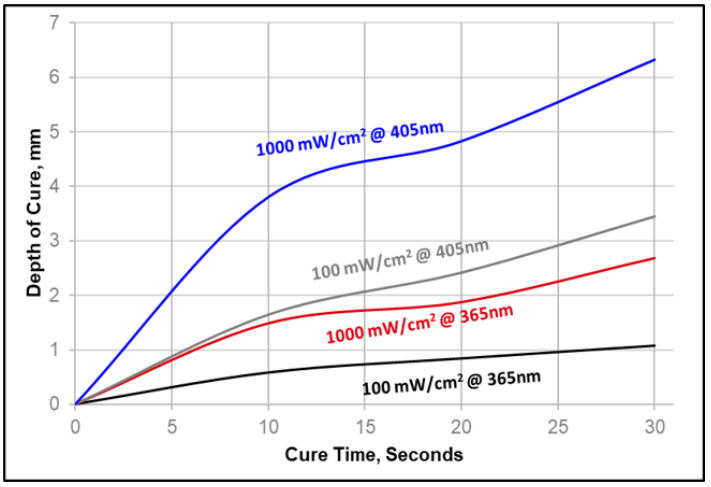
LED flood light, CL42:	
100 mW/cm², measured @ 405 nm,	25
1000 mW/cm², measured @ 405 nm,	8
100 mW/cm², measured @ 365 nm,	60
1000 mW/cm², measured @ 365 nm,	55
Zeta® 7200:	
50 mW/cm², measured @ 365 nm	12

Tack free time, minutes

Zeta® 7400:	
50 mW/cm², measured @ 365 nm	5

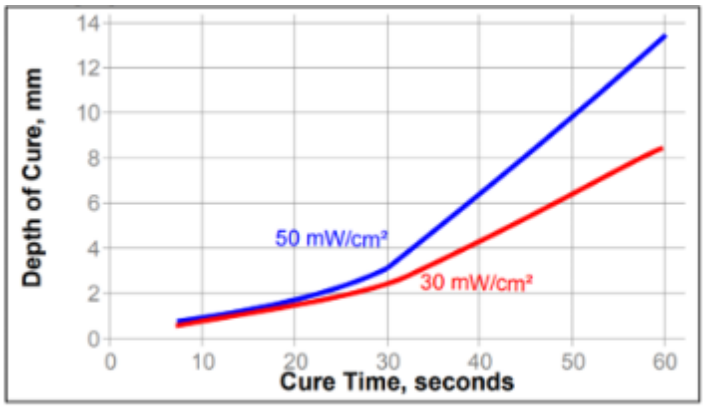
Depth of Cure vs. Irradiance (LED)
The graph below shows the increase in depth of cure with time at various light intensities as measured from the thickness of the cured product formed.

Curing System: LED flood light, CL42

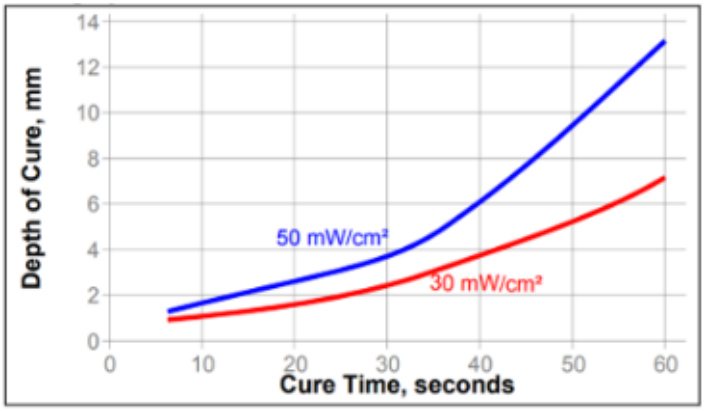


Depth of Cure vs. Irradiance (365 nm)
Cure depth depends both on external factors including the type of light source, light intensity and exposure time and on internal factors including composition of the adhesive . The following graphs show the effect of light source, light intensity and exposure time on depth of cure for LOCTITE® AA 3525™.

Curing System: Zeta® 7200



Curing System: Zeta® 7400



TYPICAL PERFORMANCE OF CURED MATERIAL
Cured @ 50 mW/cm², measured @ 365 nm, for 30 seconds using a Zeta® 7200 light source.

Physical Properties

Shore Hardness, ISO 868, Durometer D		60
Refractive Index, ASTM D542		1.51
Elongation, at break, ISO 527-3, %		260
Tensile Strength, ISO 527-3	N/mm² (psi)	24 (3,500)
Tensile Modulus, ISO 527-3	N/mm² (psi)	175 (25,000)
Coefficient of Thermal Expansion, ISO 11359-2, K-1:		
Pre Tg		97×10^{-6}
Post Tg		215×10^{-6}
Glass Transition Temperature, ISO 11359-2, °C:		
(Tg) by TMA		50

Adhesive Properties
Cured @ 50 mW/cm², measured @ 365 nm, for 30 seconds using a Zeta® 7200 light source.

135° Peel Strength:		
20 mesh stainless steel screen to Glass	N/mm (lb/in)	2.3 (13)
Torsional Shear Strength, ASTM D 3658:		
Aluminum hex button to Glass	N·m (lb·ft)	70 (51.6)
Lap Shear Strength, ISO 4587:		
Glass:		
0 gap	N/mm^2 (psi)	4.7 (700)
0.5 mm gap	N/mm^2 (psi)	5 (725)
Block Shear Strength, ISO 13445:		
ABS to Glass	N/mm^2 (psi)	3.6 (520)
Acrylic to Glass	N/mm^2 (psi)	4.3 (630)
Aluminum to Glass	N/mm^2 (psi)	9.8 (1,420)
G-10 Epoxyglass to Glass	N/mm^2 (psi)	8.6 (1,250)
Polycarbonate to Glass	N/mm^2 (psi)	7.7 (1,110)
PVC to Glass	N/mm^2 (psi)	7.1 (1,030)
Steel to Glass	N/mm^2 (psi)	10.2 (1,480)

TYPICAL ENVIRONMENTAL RESISTANCE
Cured @ 50 mW/cm², measured @ 365 nm, for 30 seconds using a Zeta® 7200 light source.

Humidity Resistance
Aged @ 49°C / condensing humidity and tested @ 22 °C
Block Shear Strength, ISO 13445, % of initial strength:

ABS to Glass:	
Aged 2 weeks	120
Aged 4 weeks	115
Acrylic to Glass:	
Aged 2 weeks	100
Aged 4 weeks	85
Aluminum to Glass:	
Aged 2 weeks	90
Aged 4 weeks	95
G-10 Epoxyglass to Glass:	
Aged 2 weeks	120
Aged 4 weeks	130

Polycarbonate to Glass:	
Aged 2 weeks	60
Aged 4 weeks	50
PVC to Glass:	
Aged 2 weeks	135
Aged 4 weeks	100
Steel to Glass:	
Aged 2 weeks	65
Aged 4 weeks	65

Lap Shear Strength, ISO 4587, % of initial strength:

Glass:

Aged 2 weeks	
0 gap	125
0.5 mm gap	115
Aged 4 weeks	
0 gap	105
0.5 mm gap	100

Torsional Shear Strength, ASTM D 3658, % of initial strength:

Aluminum hex button to Glass	
Aged 2 weeks	70
Aged 4 weeks	65
Aged 6 weeks	65

Aged @ 121°C and tested @ 22 °C

Torsional Shear Strength, ASTM D 3658, % of initial strength:

Aluminum hex button to Glass	
Aged 2 weeks	105
Aged 4 weeks	105
Aged 6 weeks	115

Aged @ 149°C and tested @ 22 °C

Torsional Shear Strength, ASTM D 3658, % of initial strength:

Aluminum hex button to Glass	
Aged 2 weeks	85
Aged 4 weeks	85
Aged 6 weeks	80

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 transmission of the substrate through which the radiation must pass.
5. For tack free curing of exposed surfaces, mercury arc or Electrodeless system, D or H bulbs are recommended.
6. Cooling should be provided for temperature sensitive substrates such as thermoplastics.
7. Plastic grades should be checked for risk of stress cracking when exposed to liquid adhesive.
8. Excess uncured adhesive can be wiped away with organic solvent (e.g. Acetone).
9. Bonds should be allowed to cool before subjecting to any service loads.

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.

Product specification

The technical data contained herein are intended as reference only and are not considered specifications for the product. Product specifications are located on the Certificate of Analysis or please contact Henkel representative.

Approval and certificate

Please contact Henkel representative for related approval or certificate of this product.

Data ranges

The data contained herein may be reported as a typical value. Values are based on actual test data and are verified on a periodic basis.

Temperature/Humidity Ranges: 23°C / 50% RH = 23±2°C / 50±5% RH

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

Disclaimer
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Reference 1.4