Technical Data Sheet

LOCTITE® SI 5092™

Known as LOCTITE® 5092™
November 2015

PRODUCT DESCRIPTION

LOCTITE® SI 5092™ provides the following product characteristics:

Technology	Silicone
Chemical Type	Alkoxy silicone
Appearance (uncured)	Yellow to green liquid[LMS]
Fluorescence	Positive under UV light[LMS]
Components	One component - requires no mixing
Cure	Ultraviolet (UV) light
Secondary Cure	Moisture for shadowed areas
Application	Potting, Coating or Sealing
Self-leveling	Uniform cavity fill
Flexibility	Highly flexible. Enhances load bearing & shock absorbing characteristics of the bond area.
Specific Benefit	Non-corrosive
Strength	Medium

LOCTITE® SI 5092™ is used for potting, coating and sealing of various automotive, electronic, military and industrial components.

TYPICAL PROPERTIES OF UNCURED MATERIAL

Specific Gravity @ 25 °C	0.99
Solids/Non-Volatile Content, %	>95
Flash Point - See SDS	
Viscosity, Brookfield - RVT, 25 °C, mPa·s (cP):	
Spindle 3, speed 10 rpm	4,000 to 7,500[LMS]

TYPICAL CURING PERFORMANCE

Normal processing conditions will include exposure to sufficient UV light irradiance to effectively cure the material. Surface and/or atmospheric moisture will promote the cure of material in shadowed regions. Although functional strength is developed almost instantly due to the UV curing nature of LOCTITE® SI 5092™, increased cure properties are developed during 72 hours at ambient conditions.

Surface Cure

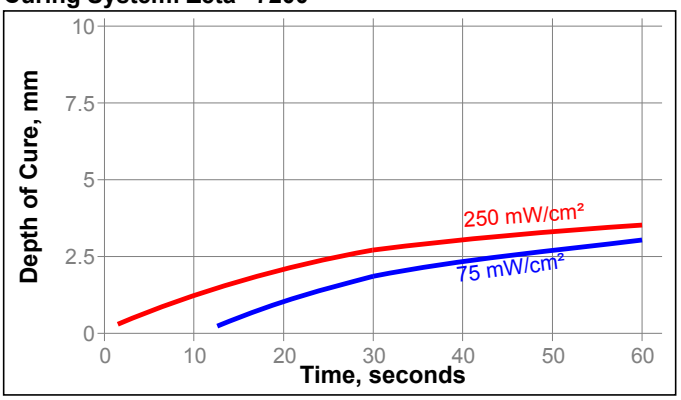
When curing with sufficient UV light irradiance, exposed material cures dry to the touch in seconds. Atmospheric moisture cures material not exposed to UV light.

Tack Free Time, seconds:	
Electrodeless, D bulb:	
75 mW/cm² ,	270 to 600
250 mW/cm² ,	75 to 90
Electrodeless, H bulb:	
75 mW/cm² ,	60 to 75
250 mW/cm² ,	20 to 30
Zeta® 7200:	
75 mW/cm² ,	≤90[LMS]
250 mW/cm² ,	10 to 20
Skin Over Time, minutes:	
Moisture cure only	≤300[LMS]

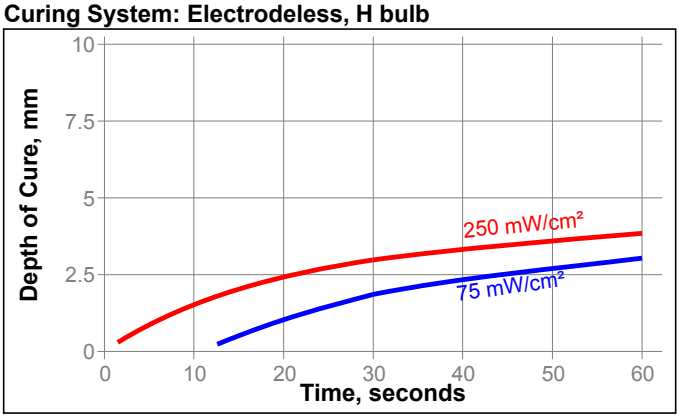
Depth of Cure

Shadowed areas rely on surface and/or atmospheric moisture to effect cure. Depth of cure is limited to approximately 6 millimeters and will take at least 24 hours to develop. Rapid depth of cure can be attained with focused UV light. The graph(s) below show the depth of cure obtained up to 60 seconds at two different levels of UV irradiance.

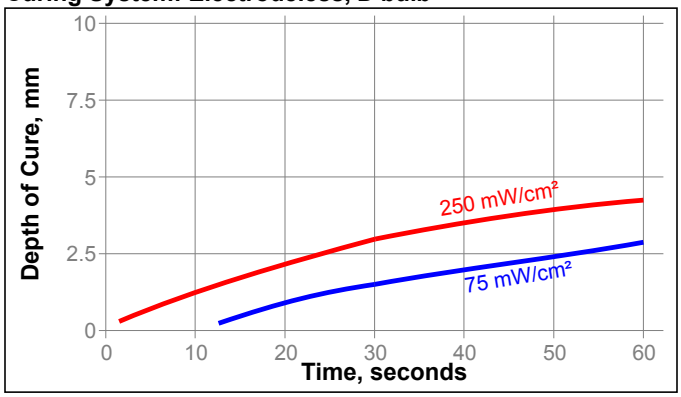
Curing System: Zeta® 7200



Curing System: Electrodeless, H bulb



Curing System: Electrodeless, D bulb



TYPICAL PROPERTIES OF CURED MATERIAL

Cured @ 70 mW/cm² , measured @ 365 nm, for 60 seconds per side plus 7 days @ 25 °C / 50% RH

Physical Properties:

Coefficient of Thermal Expansion, ISO 11359-2, K^{-1}		460×10^{-6}
Water Absorption, %		0.6
Water Vapor Trans. Rate, ASTM E96, g/(h·m²)		60.08
Shrinkage, %		1.4
Shore Hardness, ISO 868, Durometer A:		
22 °C control		42
Aged @ 150 °C for 24 hours		44
Aged @ 260 °C for 24 hours		50
Elongation, ISO 37, %:		
22 °C control		75
Aged @ 150 °C for 24 hours		75
Aged @ 260 °C for 24 hours		41
Tensile Strength, ISO 37:		
22 °C control	N/mm² (psi)	1.6 (230)
Aged @ 150 °C for 24 hours	N/mm² (psi)	1.9 (275)
Aged @ 260 °C for 24 hours	N/mm² (psi)	0.9 (130)
Tear Strength, ISO 34-1 , Die B	N/mm (lb./in.)	2 (11)

Electrical Properties:

Volume Resistivity, IEC 60093, Ω·cm	64×10^{12}
Dielectric Breakdown Strength, IEC 60243-1, kV/mm	22
Dielectric Constant / Dissipation Factor, IEC 60250:	
100 Hz	3.179 / 0.0045
100 kHz	3.175 / 0.0045

Cured @ 75 mW/cm² , for 60 secondsper side plus 7 days @ 25 °C / 50% RH

Physical Properties:

Shore Hardness, ISO 868, Durometer A		32 to 50[LMS]
Elongation, ISO 37, %		≥75[LMS]
Tensile Strength, ISO 37	N/mm² (psi)	≥0.6[LMS] (≥87)

Cured @ 180 mW/cm² , for 30 seconds per side

Physical Properties:

UV Depth of Cure, mm	≥2[LMS]

TYPICAL PERFORMANCE OF CURED MATERIAL

Cured @ 70 mW/cm² , for 60 seconds, plus 7 days post UV Cure @ 25 °C / 50% RH, (samples with 0.25 mm gap)

Shear Strength

Lap Shear Strength, ISO 4587:

Aluminum to Glass	N/mm² (psi)	0.52 (75)
Steel to Glass	N/mm² (psi)	0.63 (90)
Glass to Glass	N/mm² (psi)	1.52 (220)
Polybutylene Terephthalate (PBT) DR51 to Glass	N/mm² (psi)	1.14 (165)
Tin(bright) to Glass	N/mm² (psi)	1.26 (183)
Tin(dull) to Glass	N/mm² (psi)	1.33 (193)
Brass to Glass	N/mm² (psi)	1.28 (185)
Amodel® AS-1566 to Glass	N/mm² (psi)	1.74 (252)
Amodel® A-1133 to Glass	N/mm² (psi)	1.67 (242)

GENERAL INFORMATION

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

Directions for use:

1. For best performance bond surfaces should be clean and free from grease.
2. The product is designed to be initially cured with UV light at a minimum irradiance of 70 mW/cm² for approximately 20 seconds, increased exposure may be required for curing deeper sections.
3. Functional strength is achieved almost instantly.
4. Full performance properties will develop over 72 hours.
5. Moisture curing begins immediately after the product is exposed to the atmosphere, therefore parts to be assembled should be mated within a few minutes after the product is dispensed.
6. Excess material can be easily wiped away with non-polar solvents.

Loctite Material Specification[LMS]

LMS dated October 02, 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: 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

Note:
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