Technical Data Sheet

LOCTITE® SI 5089™

Known as LOCTITE® 5089™
April 2015

PRODUCT DESCRIPTION

LOCTITE® SI 5089™ provides the following product characteristics:

Technology	Silicone
Chemical Type	Alkoxy silicone
Appearance (uncured)	Straw colored liquid[LMS]
Fluorescence	Positive under UV light[LMS]
Components	One component - requires no mixing
Viscosity	Medium, thixotropic
Cure	Ultraviolet (UV) light
Secondary Cure	Moisture for shadowed areas
Application	Gasketing or Sealing

LOCTITE® SI 5089™ is used for gasketing and sealing applications. Upon exposure to sufficient UV light and/or atmospheric moisture, this product cures to form a durable, flexible rubber sealant. Typical applications include gasketing/sealing of enclosures that require a rapid curing, post-applied sealant that facilitates immediate on-part inspection. The thixotropic nature of LOCTITE® SI 5089™ reduces the migration of liquid product after application to the substrate.

TYPICAL PROPERTIES OF UNCURED MATERIAL

Specific Gravity @ 25 °C	1.05
Flash Point - See SDS	
Viscosity, Brookfield - RVT, 25 °C, mPa·s (cP):	
Spindle 6, speed 2.5 rpm,	80,000 to 125,000[LMS]
Solids/Non-Volatile Content, %	≥95

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 5089™, increased cure properties are developed during 72 hours at ambient conditions.

Depth of Cure

Depth of cure, mm:	
72 hours @ 22 °C	0.58
30 seconds @ 70 mW/cm² , measured @ 365 nm	1.52
60 seconds @ 70 mW/cm² , measured @ 365 nm	1.78
30 seconds @ 200 mW/cm² , measured @ 365 nm	≥1.3[LMS]
60 seconds @ 200 mW/cm² , measured @ 365 nm	2.03

Skin Over Time

Skin over time is the time the surface of the adhesive forms a skin upon exposure to atmospheric moisture at 25 ± 2 °C, 50 ± 5% RH.

Skin Over Time, minutes:	
Cured @ 22 °C	90
Skin Over Time, seconds:	
Cured @ 70 mW/cm² , measured @ 365nm	5 to 10
Cured @ 200 mW/cm² , measured @ 365nm	<5

TYPICAL PROPERTIES OF CURED MATERIAL

Cured @ 70 mW/cm² , measured @ 365 nm, for 60 seconds per side plus 72 hours @ 22 °C / 50 ± 5% RH

Physical Properties:	
Tensile Strength, ISO 37	≥1.0[LMS] (145)
Elongation, ISO 37, %	190
Shore Hardness, ISO 868, Durometer A	≥25[LMS]
Tear Strength, ISO 34-1 , Die B	≥1.5[LMS] (8.57)
Flexibility @ -54 °C, ASTM D 3111, pass/fail:	
Mandrel Diameter:	
12.7 mm	Pass
6.4 mm	Pass
3.2 mm	Pass

Electrical Properties:	
Dielectric Breakdown Strength, IEC 60243-1, kV/mm:	
Cured @ 22 °C	500
Cured @ 70 mW/cm² , measured @ 365 nm, plus 72 hours @ 22 °C	500
Volume Resistivity, IEC 60093, Ω·cm:	
Cured @ 22 °C	1.1×10^{15}
Cured @ 70 mW/cm² , measured @ 365 nm, plus 72 hours @ 22 °C	2.1×10^{15}
Dielectric Constant / Dissipation Factor, IEC 60250:	
Cured @ 22 °C:	
100 Hz	2.9 / 0.001
1 kHz	3.08 / 0.001
1 MHz	2.86 / 0.001
Cured @ 70 mW/cm² , measured @ 365 nm, plus 72 hours @ 22 °C:	
100 Hz	3.04 / 0.001
1 kHz	3.05 / 0.002
1 MHz	3.03 / 0.002

TYPICAL PERFORMANCE OF CURED MATERIAL

Cured @ 70 mW/cm² , measured @ 365 nm, for 60 seconds per side plus 72 hours @ 22 °C / 50 ± 5% RH

Lap Shear Strength, ISO 4587:

Aluminum to Polycarbonate	N/mm²	0.1
	(psi)	(15)
Steel to Polycarbonate	N/mm²	0.1
	(psi)	(15)
Polycarbonate to Polycarbonate	N/mm²	0.07
	(psi)	(10)

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 March 10, 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: 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 1.3