

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/mm ²	0.1
	(psi)	(15)
Steel to Polycarbonate	N/mm ²	0.1
	(psi)	(15)
Polycarbonate to Polycarbonate	N/mm ²	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

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 of Henkel Corporation in the U.S. and elsewhere. ® denotes a trademark registered in the U.S. Patent and Trademark Office.

Reference 1.3