

## LOCTITE® SI 5901™

Known as LOCTITE® 5901  
November 2018

### PRODUCT DESCRIPTION

LOCTITE® SI 5901™ provides the following product characteristics:

<b>Technology</b>	Silicone
<b>Chemical Type</b>	Oxime silicone
<b>Appearance (uncured)</b>	Grey paste <sup>LMS</sup>
<b>Components</b>	One component - requires no mixing
<b>Thixotropic</b>	Reduced migration of liquid product after application to substrate
<b>Cure</b>	Room temperature vulcanizing (RTV)
<b>Application</b>	Sealing
<b>Specific Benefit</b>	Excellent resistance to automotive engine oils.

Typical applications include stamped sheet metal covers (timing covers and oil sumps) where good oil resistance and the ability to withstand high joint-movement is required. It withstands on line, low pressure tests carried out before product begins to cure.

### TYPICAL PROPERTIES OF UNCURED MATERIAL

Specific Gravity @ 20 °C	1.3 to 1.37 <sup>LMS</sup>
Extrusion Rate, g/min:	
Pressure 0.62 MPa, time 15 seconds, temperature 25 °C:	
Semco Cartridge	20 to 50 <sup>LMS</sup>
Flow, ISO 7390, mm:	
After 2 minutes	0.2 <sup>LMS</sup>
Flash Point - See SDS	

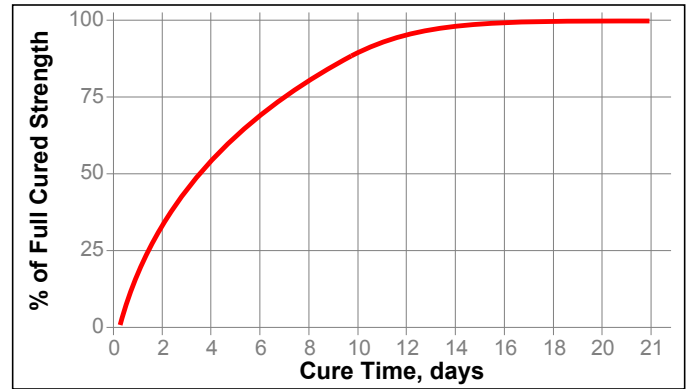
### TYPICAL CURING PERFORMANCE

#### Surface Cure

Tack Free Time, minutes:	
Cured @ 25 °C / 50±5 % RH	7 to 24 <sup>LMS</sup>

#### Cure Speed

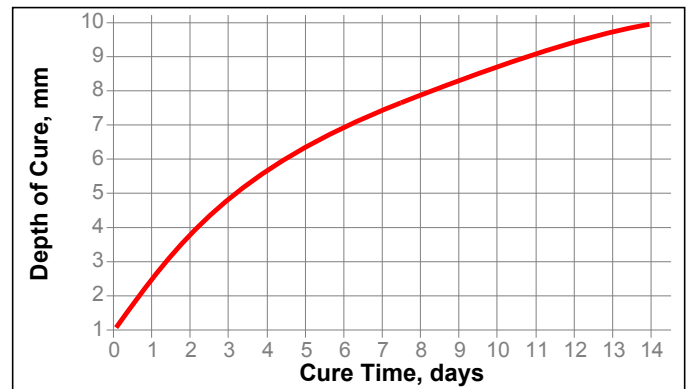
The graph below shows shear strength developed with time on Aluminum lapshears at a bond gap of 0.5 mm. Cure condition 23±2 °C, 60±5% RH. Strength is determined according to ISO 4587.



#### Depth of Cure

The depth of cure depends on temperature and humidity. Depth of cure was measured on strip pulled from a ramped PTFE mold (maximum depth 10 mm).

The graph below shows the increase in depth of cure with time at 23±2 °C / 50±5 % RH.



**TYPICAL PROPERTIES OF CURED MATERIAL**

Cured for 1 week @ 25 °C / 50±5 % RH

**Physical Properties:**

Tensile Strength, ISO 37	N/mm <sup>2</sup>	≥1.7 <sup>LMS</sup>
	(psi)	(≥246)
Elongation, ISO 37, %		≥400 <sup>LMS</sup>
Shore Hardness, ISO 868, Durometer A		31 to 46 <sup>LMS</sup>
Non-Volatile Content, ASTM D 2369, %		≤0.5 <sup>LMS</sup>

**Electrical Properties:**

Dielectric Constant / Dissipation Factor, IEC 60250:

1 kHz	5.05 / 0.048
100 kHz	4.29 / 0.042
1 MHz	4.13 / 0.023
10 MHz	4.12 / 0.013

Volume Resistivity, IEC 60093, Ω·cm 6.7×10<sup>13</sup>Surface Resistivity, IEC 60093, Ω 4.35×10<sup>15</sup>**TYPICAL PERFORMANCE OF CURED MATERIAL****Adhesive Properties**

After 21 days @ 23 °C / 50±5 % RH and 0.5 mm gap

Lap Shear Strength, ISO 4587:

Mild steel	N/mm <sup>2</sup>	1 to 1.4
	(psi)	(145 to 200)
Aluminum 2024-T3	N/mm <sup>2</sup>	0.7 to 1.3
	(psi)	(100 to 190)
Alclad	N/mm <sup>2</sup>	1 to 1.5
	(psi)	(145 to 215)
Zinc dichromate	N/mm <sup>2</sup>	1 to 2
	(psi)	(145 to 290)

**TYPICAL ENVIRONMENTAL RESISTANCE**

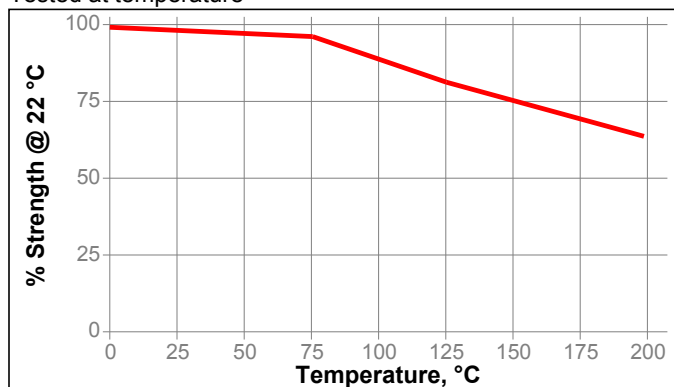
Cured for 21 days @ 23 °C / 60±5% RH

Lap Shear Strength, ISO 4587:

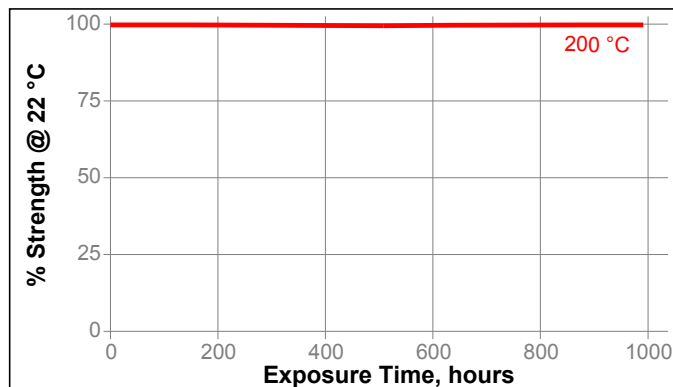
Alclad

**Hot Strength**

Tested at temperature

**Heat Aging**

Aged at temperature indicated and tested @ 22 °C

**Environmental Aging - Effect on bulk properties**

Cured for 21 days @ 23±2 °C / 60±5% RH, 2 mm thick film

Tensile strength, ISO 37, N/mm<sup>2</sup> (Elongation, at break, %):

Environment	100 h	500 h	1000 h
22 °C	2.0(570)	2.3(580)	2.0(570)
150 °C	2.4(350)	1.8(570)	2.1(350)
175 °C	1.8(340)	1.7(320)	1.6(320)
200 °C	1.8(350)	1.8(310)	1.3(220)
5W40 oil, 120 °C	1.9(500)	2.3(460)	2.3(570)
Motor oil, 150 °C	1.7(440)	1.5(430)	1.9(530)
Water/glycol	1.1(620)	0.6(470)	0.7(430)

**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. For best performance bond surfaces should be clean and free from grease.
2. 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.
3. The bond should be allowed to cure (e.g. seven days), before subjecting to heavy service loads.
4. Excess material can be easily wiped away with non-polar solvents.
5. For full automatic applications a volumetric dispensing system is recommended.

**Loctite Material Specification<sup>LMS</sup>**

LMS dated January 28, 2005. 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: 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.

**Conversions**

$(^{\circ}\text{C} \times 1.8) + 32 = ^{\circ}\text{F}$

$\text{kV/mm} \times 25.4 = \text{V/mil}$

$\text{mm} / 25.4 = \text{inches}$

$\mu\text{m} / 25.4 = \text{mil}$

$\text{N} \times 0.225 = \text{lb}$

$\text{N/mm} \times 5.71 = \text{lb/in}$

$\text{N/mm}^2 \times 145 = \text{psi}$

$\text{MPa} \times 145 = \text{psi}$

$\text{N}\cdot\text{m} \times 8.851 = \text{lb}\cdot\text{in}$

$\text{N}\cdot\text{m} \times 0.738 = \text{lb}\cdot\text{ft}$

$\text{N}\cdot\text{mm} \times 0.142 = \text{oz}\cdot\text{in}$

$\text{mPa}\cdot\text{s} = \text{cP}$

**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.

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Reference 1.4