

LOCTITE® SI 5980™

February 2013

PRODUCT DESCRIPTION

LOCTITE® SI 5980™ provides the following product characteristics:

Technology	Silicone
Chemical Type	Alkoxy silicone
Appearance (uncured)	Black paste and lump free ^{LMS}
Components	One component - requires no mixing
Thixotropic	Reduced migration of liquid product after application to substrate
Cure	Room temperature vulcanizing (RTV)
Application	Gasketing
Specific Benefit	Excellent resistance to automotive engine oils

LOCTITE® SI 5980™ has been designed specifically for gasketing applications. It withstands on line, low pressure tests carried out before product begins to cure. 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.

TYPICAL PROPERTIES OF UNCURED MATERIAL

Density @ 25 °C, g/cm ³	1.2 to 1.4 ^{LMS}
Flash Point - See MSDS	
Extrusion Rate, g/min:	
Pressure 0.62 MPa, temperature 25 °C:	
Semco Cartridge	120 to 325 ^{LMS}
Solids/Non-Volatile Content, %	99.75

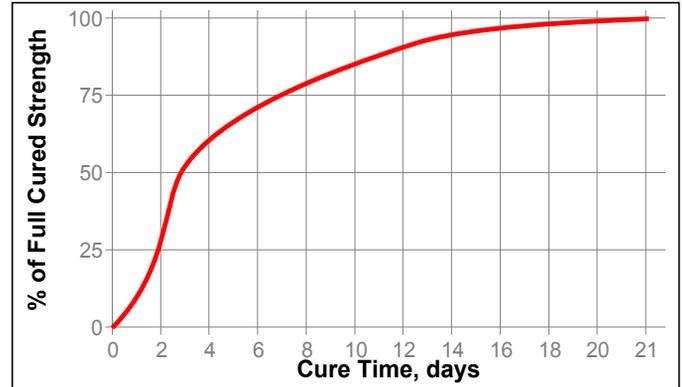
TYPICAL CURING PERFORMANCE

Tack Free Time

Tack Free Time, minutes	15 to 45 ^{LMS}
-------------------------	-------------------------

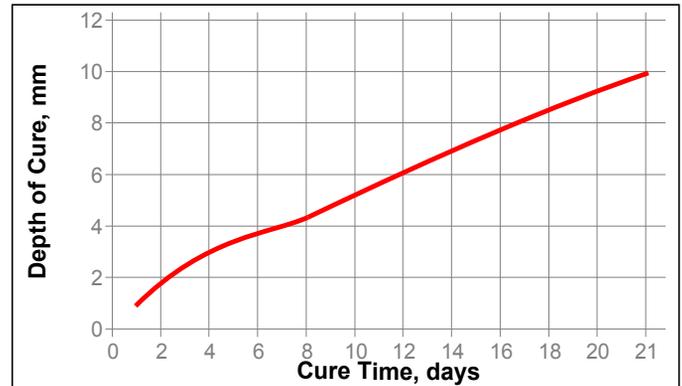
Cure Speed

The graph below shows the shear strength developed over time at 22 °C / 50 % RH on Aluminum and tested 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

Physical Properties:

Shore Hardness, ISO 868, Durometer A	27
Coefficient of Thermal Expansion, ISO 11359-2, K ⁻¹	240×10 ⁻⁶
Volume Shrinkage, ISO 1675, %	3.0
Linear Shrinkage, ISO 1675, %	1.0
Elongation, at break, ISO 37, %	290
Tensile Strength, ISO 37	N/mm ² 1.6 (psi) (230)
Tensile Modulus, ISO 37	N/mm ² 1.0 (psi) (145)

Electrical Properties:

Surface Resistivity, IEC 60093, Ω 28×10^{15}
 Volume Resistivity, IEC 60093, $\Omega \cdot \text{cm}$ 50×10^{15}

TYPICAL PERFORMANCE OF CURED MATERIAL

Adhesive Properties

Cured for 21 days @ 23 °C / 50±5 % RH

Lap Shear Strength, ISO 4587:

Mild steel (grit blasted)	N/mm ²	1.4
	(psi)	(200)
Aluminum	N/mm ²	2.2
	(psi)	(320)
Alclad	N/mm ²	2.0
	(psi)	(290)
Stainless steel	N/mm ²	1.7
	(psi)	(250)
Copper	N/mm ²	1.5
	(psi)	(220)
Brass	N/mm ²	1.3
	(psi)	(190)
Polycarbonate	N/mm ²	1.3
	(psi)	(190)
ABS	N/mm ²	0.6
	(psi)	(90)
Phenolic	N/mm ²	0.8
	(psi)	(120)
PMMA	N/mm ²	0.5
	(psi)	(70)
PET	N/mm ²	0.6
	(psi)	(90)
PA66	N/mm ²	1.1
	(psi)	(160)
PVC	N/mm ²	1.7
	(psi)	(250)
Nitrile	N/mm ²	0.3
	(psi)	(40)
NBR	N/mm ²	0.3
	(psi)	(40)

TYPICAL ENVIRONMENTAL RESISTANCE

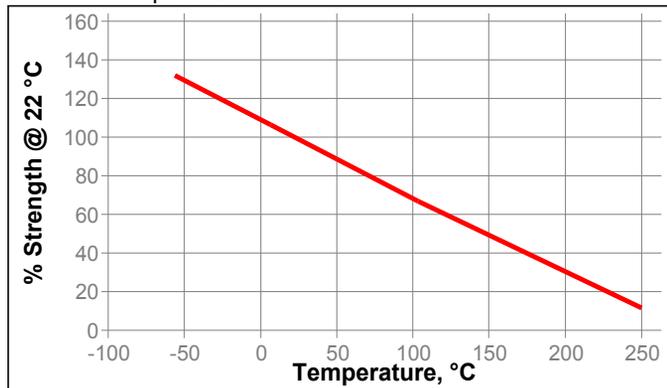
Cured for 21 days @ 23±2 °C / 50±5% RH

Lap Shear Strength, ISO 4587:

Aluminum

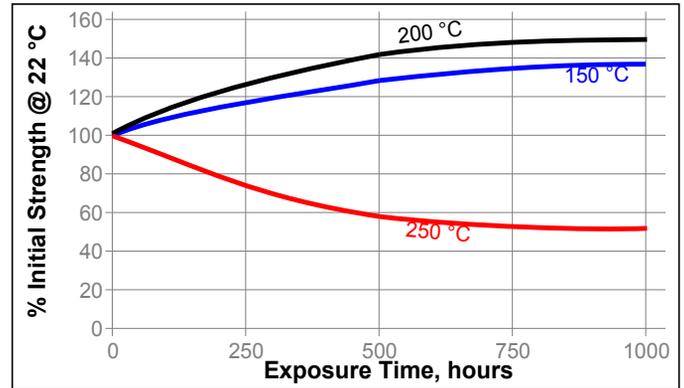
Hot Strength

Tested at temperature

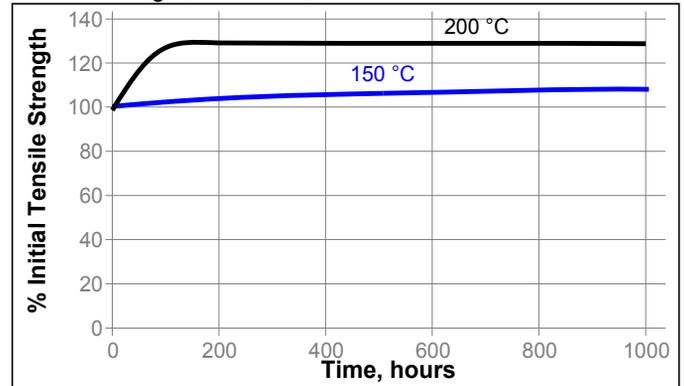


Heat Aging

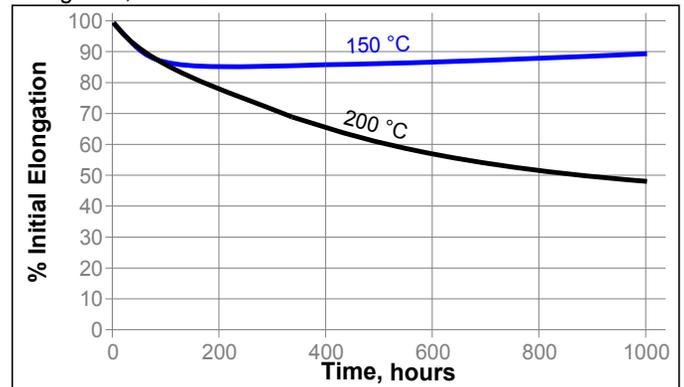
Aged at temperature indicated and tested @ 22 °C



Tensile Strength, ISO 527-3,



Elongation, ISO 527-3



Chemical/Solvent Resistance

Aged under conditions indicated and tested @ 22 °C.

Environment	°C	% of initial strength		
		100 h	500 h	1000 h
Motor oil (5W30)	150	60	45	40
IRM 902	150	65	55	50
Water/glycol 50/50	120	55	45	20
Water	60	70	85	80
Water	90	65	45	40

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 Material Safety Data Sheet (MSDS).

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.

Loctite Material Specification^{LMS}

LMS dated March 09, 2009. 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 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 0.1