

LOCTITE® SI 5135™

August 2016

PRODUCT DESCRIPTION

LOCTITE® SI 5135™ provides the following product characteristics:

Technology	Silicone
Chemical Type	Acetoxy silicone
Appearance (uncured)	Gray paste
Components	One component - requires no mixing
Cure	Room temperature vulcanizing (RTV)
Application	Gasketing
Specific Benefit	Excellent resistance to automotive engine oils

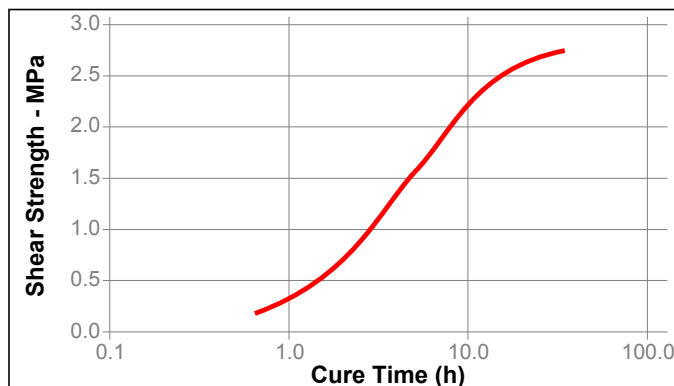
LOCTITE® SI 5135™ is a single component, room temperature vulcanizing compound designed to provide an excellent adhesive sealant for mechanical assemblies. Typical applications include use in valve covers, timing gear covers, differential covers, oil pans, transmission pans, water pumps and thermostat housings.

TYPICAL PROPERTIES OF UNCURED MATERIAL

Specific Gravity @ 25 °C	1.12
Flash Point - See SDS	
Extrusion Rate, g/min	360
Solids/Non-Volatile Content, %	98.1

Cure Speed vs. Substrate

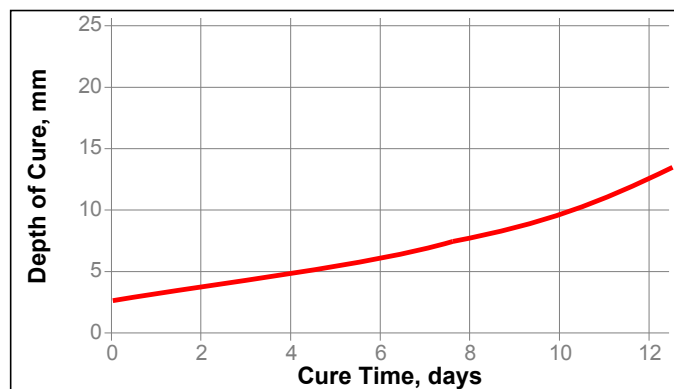
The graph below shows the shear strength developed with time on aluminum lap shears and tested according to ISO 4587.



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	49
Elongation, ISO 37, %	258
Tensile Strength, ISO 37, MPa	2.97
Tensile Modulus, MPa	2.1
Coefficient of Thermal Expansion, , 10 ⁻⁶ K ⁻¹	257

Electrical Properties:

Surface Resistivity, IEC 60093, Ω	230
Volume Resistivity, IEC 60093, Ω·cm	120

TYPICAL PERFORMANCE OF CURED MATERIAL

Adhesive Properties

Cured for 21 days @ 23 °C / 50% RH, and 0.5 mm gap

Lap Shear Strength, ISO 4587:

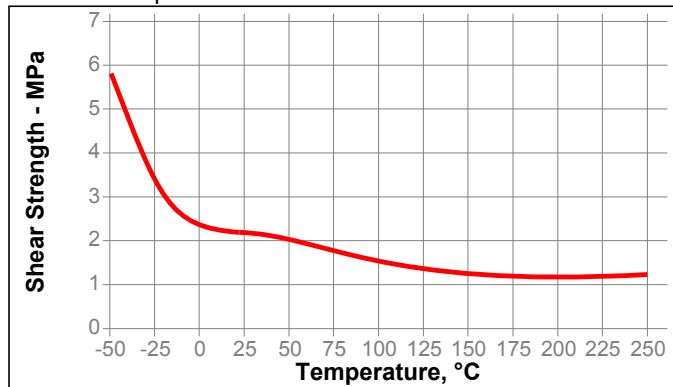
Aluminum (Alclad)	N/mm ²	2.6
	(psi)	(377)
Aluminum (grit blasted)	N/mm ²	2.8
	(psi)	(406)
Mild steel (grit blasted)	N/mm ²	1.4
	(psi)	(203)
Stainless Steel	N/mm ²	1.6
	(psi)	(232)
Steel (e-coated)	N/mm ²	2.4
	(psi)	(348)
ABS	N/mm ²	0.1
	(psi)	(14.5)
Polycarbonate	N/mm ²	0.1
	(psi)	(14.5)

TYPICAL ENVIRONMENTAL RESISTANCE

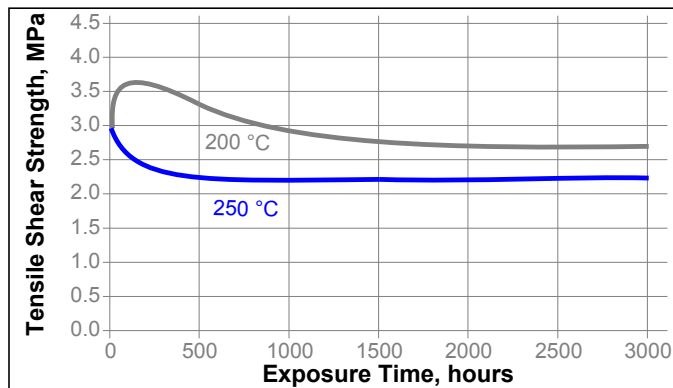
Cured for 21 days @ 23±2 °C / 50±5% RH and 0.5 mm gap
Lap Shear Strength, ISO 4587:
Alclad

Hot Strength

Tested at temperature

**Heat Aging**

Aged at temperature indicated and tested @ 22 °C

**Chemical/Solvent Resistance**

Aged under conditions indicated and tested @ 22°C.

Physical Properties, Tensile Strength, ISO 37

Environment	°C	% of initial strength			
		100 h	500 h	1000 h	3000 h
Motor Oil - Shell Helix Ultra	120	75	70	65	50
Motor Oil - Shell Helix Ultra	150	100	55	45	35
Water/glycol 50/50	120	125	85	75	30
Water/glycol 50/50	100	115	120	100	75
Water	60	115	110	110	110
Water	90	115	115	100	85
ATF	120	80	25	10	
Mineral Oil	150	100	60	35	30

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.

Loctite Material Specification^{LMS}

LMS dated May 15, 2001. 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. Storage conditions are for long term product storage. Transit and interim storage situations (i.e. receiving) are not encompassed by Henkel's storage requirements. It should be noted however that all efforts should be made to store material as required, as soon as possible. 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

$(^{\circ}\text{C} \times 1.8) + 32 = ^{\circ}\text{F}$
 $\text{kV/mm} \times 25.4 = \text{V/mil}$
 $\text{mm} / 25.4 = \text{inches}$
 $\mu\text{m} / 25.4 = \text{mil}$
 $\text{N} \times 0.225 = \text{lb}$
 $\text{N/mm} \times 5.71 = \text{lb/in}$
 $\text{N/mm}^2 \times 145 = \text{psi}$
 $\text{MPa} \times 145 = \text{psi}$
 $\text{N}\cdot\text{m} \times 8.851 = \text{lb}\cdot\text{in}$
 $\text{N}\cdot\text{m} \times 0.738 = \text{lb}\cdot\text{ft}$
 $\text{N}\cdot\text{mm} \times 0.142 = \text{oz}\cdot\text{in}$
 $\text{mPa}\cdot\text{s} = \text{cP}$

Reference 0.0

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.