Technical Data Sheet

LOCTITE® SI 5989B

March 2022

PRODUCT DESCRIPTION

LOCTITE® SI 5989B provides the following product characteristics:

Technology	Silicone
Chemical Type	Oxime Silicone
Appearance (uncured)	Smooth, black paste
Components	One component - requires no mixing
Thixotropic	Reduced migration of liquid product after application to substrate
Cure	Room temperature vulcanizing (RTV)
Application	Sealing
Specific Benefits	Excellent resistance to various automotive fluids.

TYPICAL APPLICATIONS

LOCTITE® SI 5989B is a non-slumping, non-corrosive silicone adhesive/sealant. It is designed primarily for flange sealing for general powertrain applications.

TYPICAL PROPERTIES OF UNCURED MATERIAL

Specific Gravity @ 25 °C	1.3 to 1.4[LMS]
Extrusion Rate @ 25 °C, 0.6 MPa:	
Semco #440 nozzle	250 to 400[LMS]

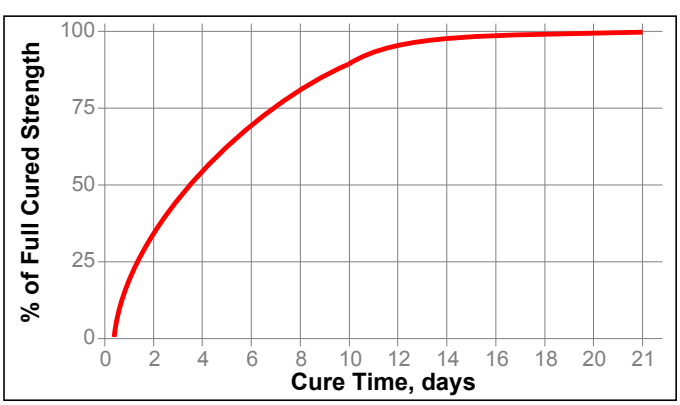
TYPICAL CURING PERFORMANCE

Skin Over Time

Skin Over Time, Cured @ 25 °C/45 to 55% RH	8 to 20 [LMS]

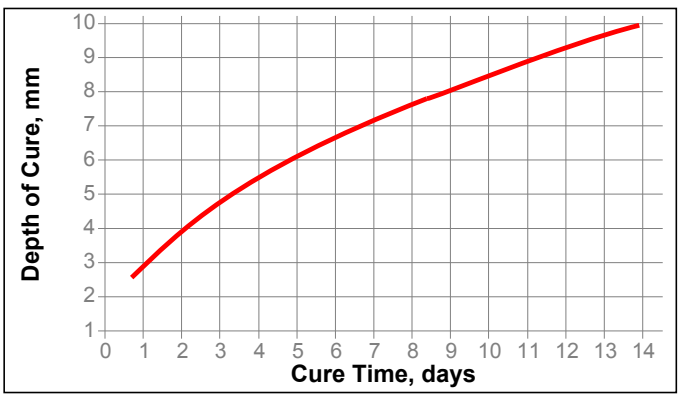
Cure Speed vs. Substrate

The graph below shows the shear strength developed with time on grit blasted mild steel lap shears at a bond gap of 0.5 mm. Cure condition 23±2°C, 50±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 @ 23 °C / 50% RH

Physical Properties:

Shore Hardness, ISO 868, Durometer A		35 to 55[LMS]
Elongation, ISO 527-3, %		≥200[LMS]
Tensile Strength, ISO 37	N/mm²	≥1.7[LMS]
	(psi)	(≥247)

TYPICAL PERFORMANCE OF CURED MATERIAL

Adhesive Properties

Cured for 7 days @ 23 °C / 50% RH

Shear Strength:

Lap Shear Strength ISO 4587:

Steel 0.2 mm gap	N/mm²	≥1.5
	(psi)	(≥218)
Aluminum 2024-T3 1.0 mm gap	N/mm²	≥1.5
	(psi)	(≥218)

Typical Fluid Immersion Properties

Cured for 21 days @ 23°C/ 50±5 % RH

Physical Properties:

Shore Hardness, ISO 868, Durometer A

		% of initial strength	
Environment	**°C**	**100 h**	**300 h**
Motor oil (5W30)	150	60	60
Gear oil (75W90)	120	90	80
Gear oil (85W140)	120	80	70

Elongation ISO 527-3

		% of initial strength	
Environment	**°C**	**100 h**	**300 h**
Motor oil (5W30)	150	100	105
Gear oil (75W90)	120	105	115
Gear oil (85W140)	120	125	135

Tensile Strength, ISO 527-3

		% of initial strength	
Environment	**°C**	**100 h**	**300 h**
Motor oil (5W30)	150	80	70
Gear oil (75W90)	120	100	90
Gear oil (85W140)	120	90	70

Lap Shear Strength, ISO 4587
Aluminum 2024-T3 (grit blasted):
1.0 mm gap

		% of initial strength	
Environment	**°C**	**100 h**	**300 h**
Motor oil (5W30)	150	75	65
Gear oil (75W90)	120	80	70
Gear oil (85W140)	120	90	80

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 the surfaces should be clean and free from grease.
2. This product is moisture cure. Exposure to environmental moisture should be kept to a minimum during storage and handling.
3. Full performance properties will develop over hours.
4. 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.
5. Excess material can be easily wiped away with non-polar solvents.

Loctite Material Specification[LMS]

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 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 Henkel representative.

Product Specification

The technical data contained herein are intended as reference only and are not considered specifications for the product. Product specifications are located on the Certificate of Analysis or please contact Henkel representative.

Approval and Certificate

Please contact a Henkel representative for related approval or certificate of this product.

Data Ranges

The data contained herein may be reported as a typical value and/or range. Values are based on actual test data and are verified on a periodic basis.

Temperature/Humidity Ranges: 23 °C / 50% RH = 23+2 °C / 50+5% RH.

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

Disclaimer

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