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LOCTITE

Technical Data Sheet

LOCTITE® SI 5607™

Known as LOCTITE® 5607™
May 2014

PRODUCT DESCRIPTION

LOCTITE® SI 5607™ provides the following product characteristics:

Technology	Silicone
Chemical Type	Alkoxy silicone
Appearance - Part A	White paste[LMS]
Appearance - Part B	Gray paste[LMS]
Appearance (Mixture)	Gray
Components	Two component - requires mixing
Mix Ratio, by volume - Part A: Part B	2 : 1
Viscosity	Thixotropic
Cure	Room temperature cure Atmospheric moisture
Application	Bonding and Sealing

LOCTITE® SI 5607™ is a two-part, neutral curing silicone with medium cure speed. Typical applications include bonding and sealing in the appliance market and general applications where a long working life after dispensing is required.

TYPICAL PROPERTIES OF UNCURED MATERIAL

Part A:

Specific Gravity @ 25 °C 1.2 to 1.35[LMS]

Viscosity, Brookfield - RVT, 25 °C, mPas :

Spindle 6, speed 10 rpm 25,000 to 60,000

Flash Point - See SDS

Part B:

Specific Gravity @ 25 °C 1.6 to 1.8[LMS]

Viscosity, Cone & Plate, 25 °C, mPas :

Shear rate 20 s^{-1} 20,000 to 35,000

Flash Point - See SDS

Mixed:

Flash Point - See SDS

TYPICAL CURING PERFORMANCE

The mix of part A and part B initiates the reaction. There is a secondary cure with atmospheric moisture that promotes full cure over 7 days.

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 25 to 70[LMS]

Fixture Time

Fixture time is defined as the time to develop a shear strength of 0.1 N/mm² .

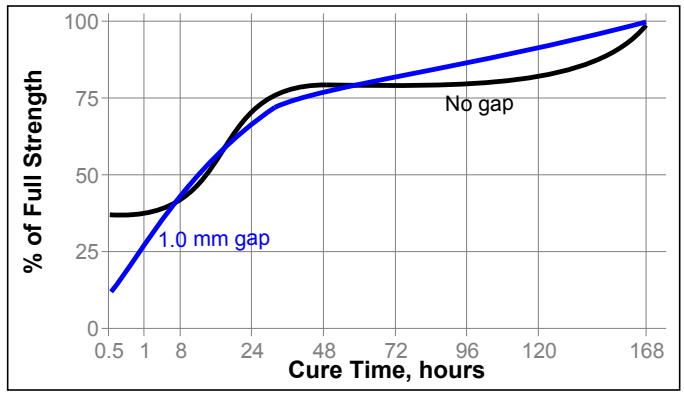
Fixture Time, ISO 4587, minutes:

Steel @ 25 °C 10 to 15

Aluminium Alclad @ 25 °C 15 to 20

Cure Speed vs. Time

The graph below shows the shear strength developed over time at 22 °C / 50 % RH on aluminum (Alclad) and tested according to ISO 4587.



TYPICAL PROPERTIES OF CURED MATERIAL

Cured for 24 hours @ 22 °C / 50% RH

Physical Properties:

Shore Hardness, ISO 868, Shore A 30 to 50[LMS]

Tensile Strength, ISO 527-3 N/mm² ≥1.0[LMS] (psi) (≥145)

Elongation, at break, ISO 527-3, % ≥80[LMS]

Cured for 7 days @ 22 °C / 50% RH

Physical Properties:

Coefficient of Thermal Expansion, ISO 11359-2, K^{-1}:

Post Tg 2.0×10^{-04}

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Tensile Strength, ISO 527-3	N/mm² (psi)	2 (290)
Tensile Modulus, ISO 527-3	N/mm² (psi)	0.6 (100)
Elongation, at break, ISO 527-3, %		180
Tear Strength, ISO 34-1 , Die C	N/mm (lb./in.)	7.4 (42)

Electrical Properties:

Dielectric Constant / Dissipation Factor, IEC 60250:	
1 kHz	3.92 / 0.023
1 MHz	3.89 / 0.003
Volume Resistivity, IEC 60093, Ω·cm	2.1×10^{14}
Dielectric Breakdown Strength, IEC 60243-1, kV/mm	19.8

TYPICAL PERFORMANCE OF CURED MATERIAL

Cured for 24 hours @ 22 °C / 50% RH

Shear Strength:

Lap Shear Strength, ISO 4587:		
Aluminum (Alclad)	N/mm² (psi)	≥1.0[LMS] (145)

Cured for 7 days @ 22 °C / 50% RH

Adhesive Properties

180° Peel Strength ISO 8510-2:		
Steel	N/mm (lb/in)	5.4 (30)
Impact Strength, ISO 9653, J:		
Aluminum (Alclad), no gap		2.3
Aluminum (Alclad), 1 mm gap		2.2

Shear Strength:

Lap Shear Strength, ISO 4587:		
Stainless Steel:		
0 gap	N/mm² (psi)	1.4 (210)
1.0 mm gap	N/mm² (psi)	1.1 (165)
Galvanized Steel:		
0 gap	N/mm² (psi)	1.6 (225)
1.0 mm gap	N/mm² (psi)	1 (150)
Polycarbonate:		
0 gap	N/mm² (psi)	2 (290)
1.0 mm gap	N/mm² (psi)	0.6 (85)
Valox®:		
0 gap	N/mm² (psi)	1.2 (170)
1.0 mm gap	N/mm² (psi)	0.7 (105)
Nylon:		
0 gap	N/mm² (psi)	1.2 (170)
1.0 mm gap	N/mm² (psi)	0.9 (135)
Wood (Pine):		
0 gap	N/mm² (psi)	1.2 (180)
1.0 mm gap	N/mm² (psi)	0.9 (125)

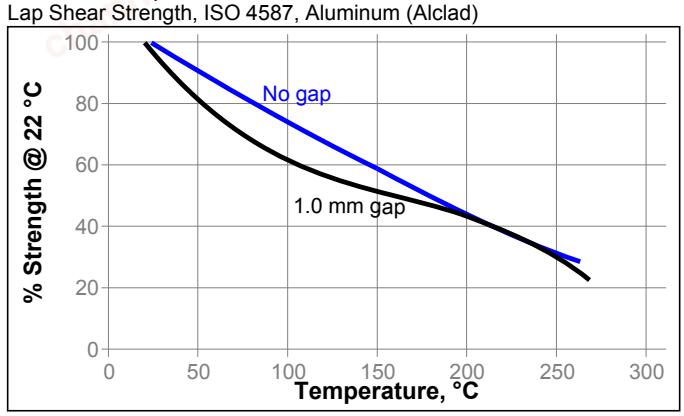
TYPICAL ENVIRONMENTAL RESISTANCE

Cured for 7 days @ 22 °C / 50% RH

Hot Strength

Tested at temperature

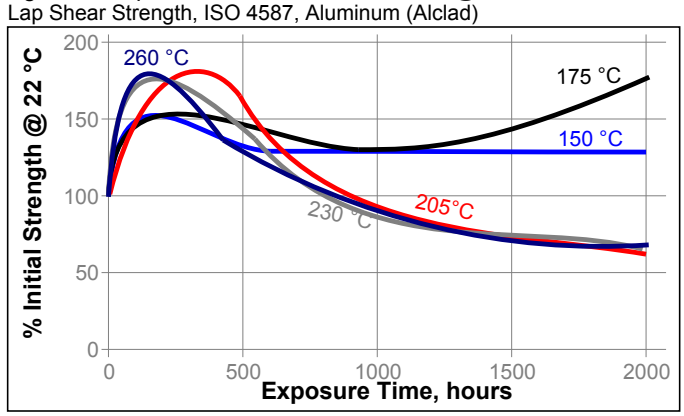
Lap Shear Strength, ISO 4587, Aluminum (Alclad)



Heat Aging

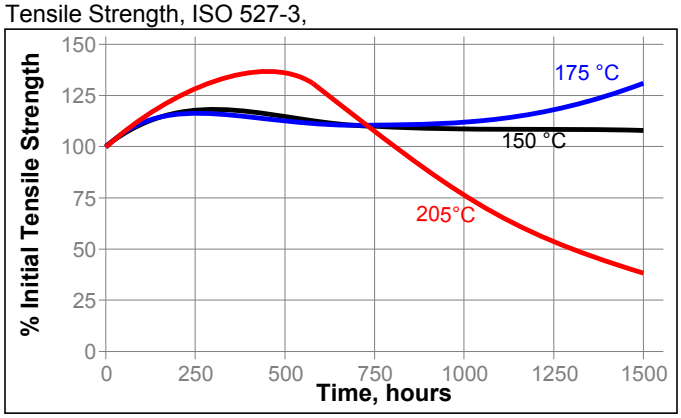
Aged at temperature indicated and tested @ 22 °C

Lap Shear Strength, ISO 4587, Aluminum (Alclad)

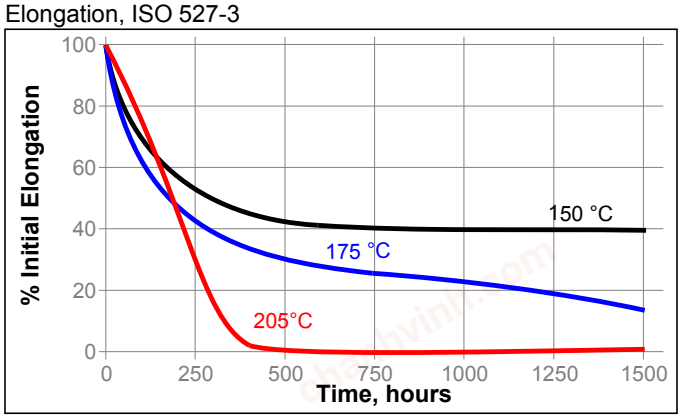


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Tensile Strength, ISO 527-3,



Elongation, ISO 527-3



Chemical/Solvent Resistance
Aged under conditions indicated and tested @ 22°C.
Lap Shear Strength, ISO 4587, Alclad, 1.0 mm gap

		% of initial strength	
Environment	**°C**	**500 h**	**1000 h**
Water	22	73	63
Isopropanol	22	80	74
2% Ammonia/Water	22	70	65
Motor oil (10W30)	22	100	100
Water/glycol 50/50	22	84	76
Gasoline (unleaded)	22	28	28

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 high strength structural bonds, remove surface contaminants such as paint, oxide films, oils, dust, mold release agents and all other surface contaminants.
2. Use gloves to minimize skin contact. DO NOT use solvents for cleaning hands.
3. **Dual Cartridges:** To begin using a new cartridge, remove cartridge cap and dispense a small amount of adhesive, making sure both parts A&B are extruding. Attach nozzle and dispense approximately 25 to 50mm, before applying onto part to be bonded. Partially used cartridges can be stored with the mixing nozzle attached. To reuse, remove and discard old nozzle, attach the new nozzle, dispense approximately 25 to 50mm, before applying onto part to be bonded.
   Bulk Containers: Normally material is dispensed through volumetric metered mixing equipment, attached to static mix nozzles.
4. Application to the substrates should be made as soon as possible. Larger quantities and/or higher temperatures will reduce the working time.
5. Keep assembled parts from moving during cure. The bond should be allowed to develop full strength before subjecting to any service load.
6. Excess material can be easily wiped away with non-polar solvents.

Loctite Material Specification[LMS]
LMS dated November 23, 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
(°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.

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