Technical Data Sheet

LOCTITE® SI 5612™

Known as LOCTITE® 5612™
December 2023

PRODUCT DESCRIPTION

LOCTITE® SI 5612™ provides the following product characteristics:

Technology	Silicone
Chemical Type	Silicone
Appearance,Resin (Component A)	Red paste[LMS]
Appearance, Hardener (Component B)	White paste[LMS]
Appearance (Mixture)	Red paste
Components	Two components - requires mixing
Mix Ratio by volume: Part A: Part B	4 : 1
Viscosity	Thixotropic
Cure	Room temperature cure and Atmospheric moisture
Application	Bonding and Sealing

LOCTITE® SI 5612™ is a two part, fast cure silicone with excellent bond strength to glass, metals and Ceran®. The product adheres well to glass and metal and can be exposed to a temperature of 220°C after complete cure. LOCTITE® SI 5612™ is used for bonding/sealing applications in the heating engineering industry, for industrial ovens and household electrical equipment.

TYPICAL PROPERTIES OF UNCURED MATERIAL

Part A Properties:

Density @ 25 °C	1.35 to 1.65[LMS]
Viscosity, mPa·s	
Rheometer @20 1/s	30,000 to 85,000
Flash Point - See SDS	

Part B Properties:

Density @ 25 °C	1.5 to 1.7[LMS]
Specific Gravity @ 25 °C	1.7
Viscosity, mPa·s	
Rheometer @20 1/s	10,000 to 120,000
Flash Point - See SDS	

Mixed Properties:

Pot life , minutes	6

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	22

Fixture Time

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

Fixture Time, minutes	20 to 60

TYPICAL PROPERTIES OF CURED MATERIAL

Cured for 7 days @ 22 °C / 50% RH

Physical Properties:

Coefficient of Thermal Conductivity, ISO 8302, W/(m·K)		0.87
Coefficient of Thermal Expansion, K^{-1}		290×10^{-6}
Elongation, at break, ISO 527-3, %		180
Shore Hardness, ISO 868 , Durometer A		45
Tensile Strength, ISO 527-3	N/mm²	2.0
	(psi)	(290)
Tensile Modulus, ISO 37	N/mm²	1.8
	(psi)	(260)

Electrical Properties:

Surface Resistivity, IEC 60093, Ω	96×10^{15}
Volume Resistivity, IEC 60093, Ω·cm	300×10^{15}

TYPICAL PERFORMANCE OF CURED MATERIAL

Adhesive Properties

Cured for 7 days @ 22°C / 50% RH

Lap Shear Strength :

Aluminum (Alclad)	N/mm²	2.8
	(psi)	(410)
Mild steel (grit blasted)	N/mm²	2.5
	(psi)	(360)
Stainless steel	N/mm²	2.8
	(psi)	(410)
Copper	N/mm²	3.3
	(psi)	(480)
Brass	N/mm²	2.7
	(psi)	(390)
Polycarbonate	N/mm²	2.2
	(psi)	(320)
PVC	N/mm²	0.9
	(psi)	(120)
Perspex	N/mm²	0.1
	(psi)	(15)
PET	N/mm²	0.8
	(psi)	(120)

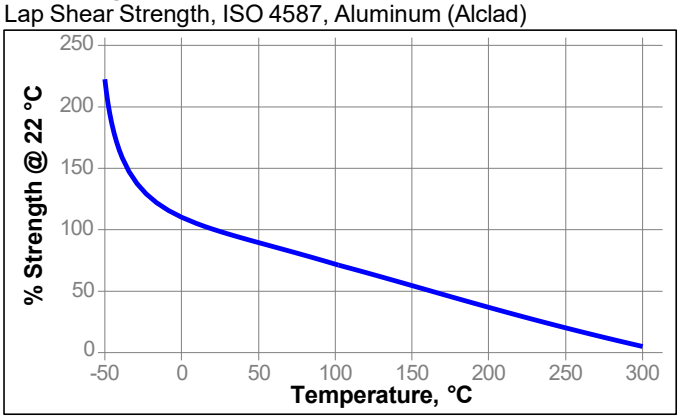
Nylon 66	N/mm²	1.1
	(psi)	(160)
GRP	N/mm²	2.4
	(psi)	(350)
Wood (teak)	N/mm²	1.9
	(psi)	(280)
ABS	N/mm²	0.1
	(psi)	(15)

TYPICAL ENVIRONMENTAL RESISTANCE

Cured for 7 days @ 22°C

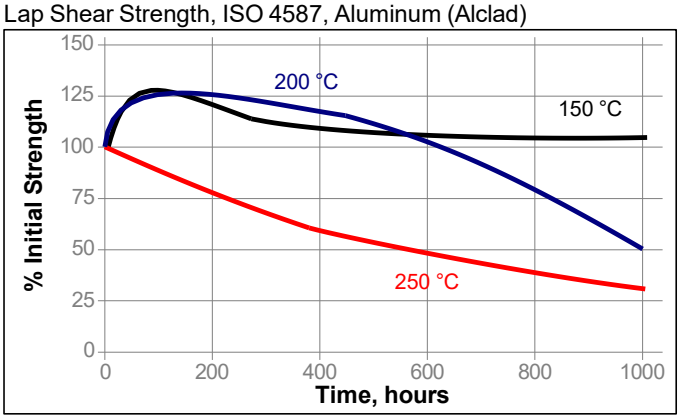
Hot Strength

Lap Shear Strength, ISO 4587, Aluminum (Alclad)

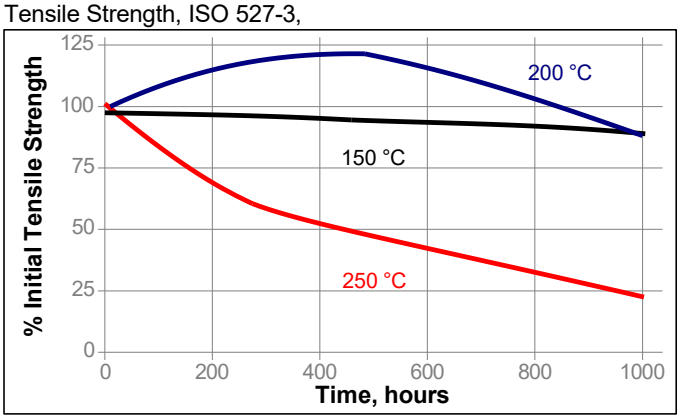


Heat Aging

Lap Shear Strength, ISO 4587, Aluminum (Alclad)



Tensile Strength, ISO 527-3,



Chemical/Solvent Resistance

Lap Shear Strength, ISO 4587, Aluminum (Alclad)

		% of initial strength		
Environment	**°C**	**100 h**	**500 h**	**1000 h**
5W30	150	75	50	60
IRM 902	150	110	80	80
Water/glycol	120	15	20	45
Water	60	85	55	95
Water	90	45	40	55

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 the mating surface should be clean and free of grease.
2. Best results are achieved utilizing a helix 8mm diameter, 24 element mix nozzle.
3. After dispense, mate parts immediately to ensure maximum bond strength.
4. **Dual Cartridges:** Insert the cartridge into the application gun and start the plunger into the cylinders using light pressure on the trigger. Next, remove the cartridge cap and expel a small amount of adhesive to be sure both sides are flowing evenly and freely. Attach the static mixing nozzle to the end of the cartridge and begin dispensing the adhesive. Purge and dispose of the first 3
   - 5 cm from the end of the mix nozzle, as it may not be sufficiently mixed.
   Bulk Containers: Utilize volumetric dispense system to ensure proper mix ratio and utilize mix nozzle to obtain adequate mixing.

Loctite Material Specification[LMS]

LMS dated January 31, 2012 (Part A) and LMS dated January 31, 2012 (Part B). 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 Loctite 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 Henkel 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

Disclaimer

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Reference 0.4