Technical Data Sheet

LOCTITE® SI 5615™

Known as LOCTITE®5615™
May 2014

PRODUCT DESCRIPTION

LOCTITE® SI 5615™ provides the following product characteristics:

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

LOCTITE® SI 5615™ is a two part, fast cure silicone with excellent bond strength to glass, metals and Ceran®. LOCTITE® SI 5615™ has excellent hot strength up to 180 °C with the capability to resist higher temperatures for short-term exposure. Typical applications include sealing/bonding glass stovetop assemblies, weld and rivet reduction in high temperature applications, and other high temperature bonding applications.

TYPICAL PROPERTIES OF UNCURED MATERIAL

Part A:

Density, g/cm³	1.15 to 1.35 LMS
Viscosity, Cone & Plate, mPa·s (cP):	
Spindle CP20-2 Deg @ 20 s^{-1}	30,000 to 100,000 LMS
Flash Point - See SDS	

Part B:

Density, g/cm³	1.55 to 1.75 LMS
Viscosity, Cone & Plate, mPa·s (cP):	
Spindle CP20-2 Deg @ 20 s^{-1}	10,000 to 70,000 LMS
Flash Point - See SDS	

Mixed:

Pot life , minutes	5

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	12

Fixture Time

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

Fixture Time, ISO 4587, minutes	12

TYPICAL PROPERTIES OF CURED MATERIAL

Cured for 7 days @ 22 °C / 50% RH

Physical Properties:

Coefficient of Thermal Conductivity, ISO 8302, W/(m·K)	0.64	
Coefficient of Thermal Expansion, , K^{-1}	66×10^{-6}	
Elongation, at break, ISO 527-3, %	230	
Shore Hardness, ISO 868, Durometer A	34	
Tensile Strength, ISO 527-3	N/mm²	1.28
	(psi)	(185)
Tensile Modulus, ISO 37	N/mm²	1.26
	(psi)	(182)

Electrical Properties:

Surface Resistivity, IEC 60093, Ω	19×10^{15}
Volume Resistivity, IEC 60093, Ω·cm	38×10^{15}

TYPICAL PERFORMANCE OF CURED MATERIAL

Adhesive Properties

Cured for 7 days @ 22 °C / 50% RH

Lap Shear Strength, ISO 4587:

Aluminum (Alclad)	N/mm²	1.8
	(psi)	(260)
Mild steel (grit blasted)	N/mm²	1.7
	(psi)	(250)
Stainless steel	N/mm²	1.8
	(psi)	(260)

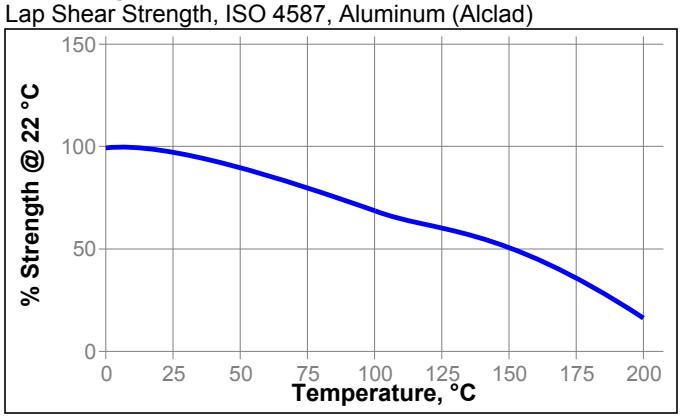
Copper	N/mm² (psi)	1.7 (250)
Brass	N/mm² (psi)	1.6 (230)
Polycarbonate	N/mm² (psi)	1.5 (220)
PVC	N/mm² (psi)	1.5 (220)
PMMA	N/mm² (psi)	0.4 (60)
PET	N/mm² (psi)	0.9 (130)
Nylon 66	N/mm² (psi)	1.3 (190)
GRP	N/mm² (psi)	1.7 (250)
Phenolic	N/mm² (psi)	1.5 (220)
Wood (teak)	N/mm² (psi)	1.0 (145)
EPDM	N/mm² (psi)	0.1 (14)
ABS	N/mm² (psi)	0.7 (101)

TYPICAL ENVIRONMENTAL RESISTANCE

Cured for 7 days @ 22 °C

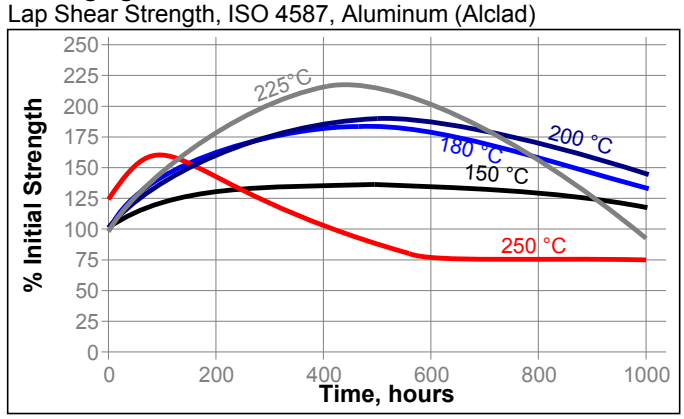
Hot Strength

Lap Shear Strength, ISO 4587, Aluminum (Alclad)

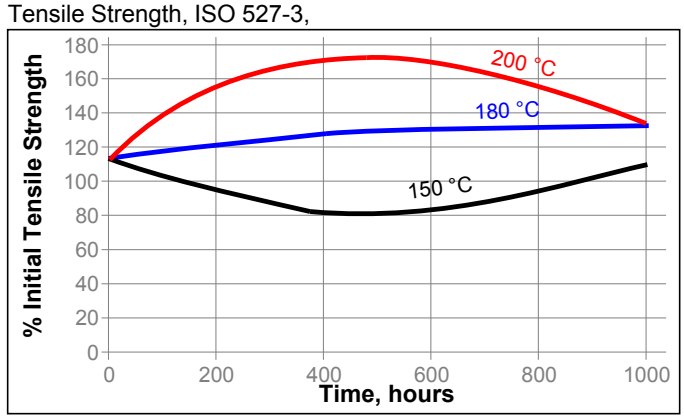


Heat Aging

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	30	30	30
IRM 902	150	45	70	85
Water/glycol	120	15	20	45
Water	60	65	70	90
Water	90	40	55	65

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 June 8, 2010 (Part A) and LMS dated June 8, 2010 (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 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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