

LOCTITE® SI 5700™

September 2014

PRODUCT DESCRIPTION

LOCTITE® SI 5700™ provides the following product characteristics:

Technology	Silicone
Chemical Type	Polyaddition Silicone
Appearance, Resin (Component A)	Clear liquid
Appearance, Hardener (Component B)	Clear liquid
Appearance (Mixture)	Clear liquid
Components	Two component - requires mixing
Mix Ratio, by volume - Part A: Part B	1 : 1
Viscosity	Low
Cure	Room temperature cure
Application	Potting

LOCTITE® SI 5700™ is an ultra clear, two-part silicone which cures at room temperature and can be accelerated by heat. Thanks to polyaddition technology, the product releases no by-products, has low shrinkage, is non-corrosive and health and safety friendly. LOCTITE® SI 5700™ provides high transparency with a high transmission rate and is used for potting applications in the Lighting, Electrical and Optical industries for LED channel or lenses, optical sensors or coating processes.

TYPICAL PROPERTIES OF UNCURED MATERIAL

Part A:

Density, g/cm³ 1.0

Viscosity, Plate to Plate, 25 °C, mPa·s (cP):
Shear rate 30 s⁻¹ 4,700

Flash Point - See SDS

Part B:

Density, g/cm³ 1.0

Viscosity, Plate to Plate, 25 °C, mPa·s (cP):
Shear rate 30 s⁻¹ 8,600

Flash Point - See SDS

Mixed:

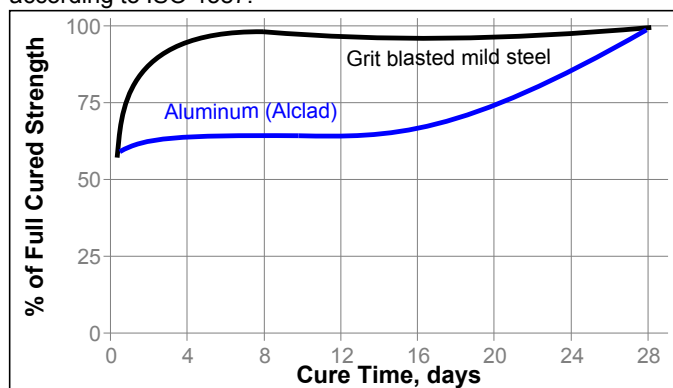
Density, g/cm³ 1.0

TYPICAL CURING PERFORMANCE

Gel Time @ 25 °C, minutes	43
Tack Free Time, minutes	~220
Total Mass Loss, %	0.36

Cure Speed vs. Substrate

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



TYPICAL PROPERTIES OF CURED MATERIAL

Cured for 28 days @ 22 °C / 50% RH

Physical Properties:

Shore Hardness, ISO 868, Durometer A	32
Water Absorption, %	0.16
Linear Shrinkage, %	0.75
Volume Shrinkage, %	2.2
Coefficient of Thermal Expansion, K ⁻¹	72×10 ⁻⁶
Elongation, at break, ISO 527-3, %	155
Tensile Strength, ISO 527-3	N/mm ² 2.8 (psi) (405)
Tensile Modulus, ISO 37	N/mm ² 0.9 (psi) (130)

Electrical Properties:

Surface Resistivity, IEC 60093, ohms	3×10 ¹⁵
Volume Resistivity, IEC 60093, ohm·cm	50×10 ¹²

Refractive Index

1.4

Color Analysis (CIE Chromaticity scale):

Chromaticity: X-Coordinate	0.3349
Chromaticity: Y-Coordinate	0.3504

TYPICAL PERFORMANCE OF CURED MATERIAL**Adhesive Properties**

Cured for 28 days @ 22 °C / 50% RH

Lap Shear Strength, ISO 4587:

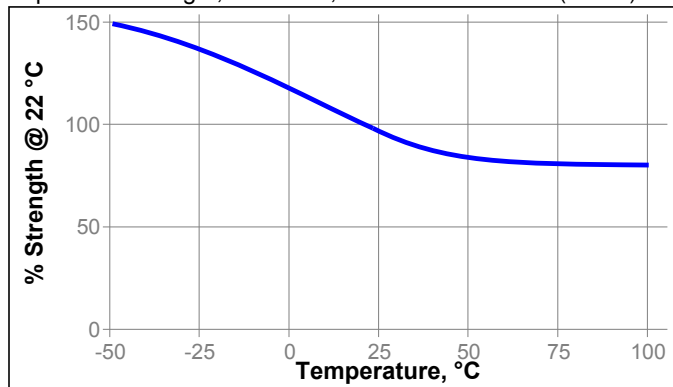
Aluminum (Alclad)	N/mm ²	1.0
	(psi)	(150)
Mild steel (grit blasted)	N/mm ²	0.7
	(psi)	(96)
Stainless steel	N/mm ²	0.9
	(psi)	(130)
Glass	N/mm ²	0.7
	(psi)	(100)
Polycarbonate	N/mm ²	0.2
	(psi)	(33)
PVC	N/mm ²	0.3
	(psi)	(42)
PMMA	N/mm ²	0.4
	(psi)	(52)
Nylon	N/mm ²	0.5
	(psi)	(70)
ABS	N/mm ²	0.3
	(psi)	(36)

TYPICAL ENVIRONMENTAL RESISTANCE

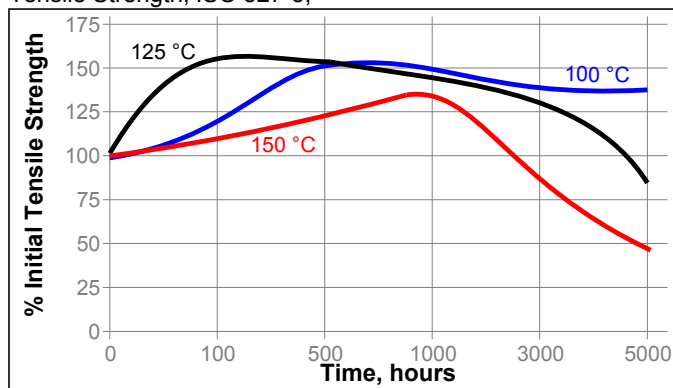
Cured for 28 days @ 22 °C

Hot Strength

Lap Shear Strength, ISO 4587, Grit Blasted Mild Steel (GBMS)



Tensile Strength, ISO 527-3,

**Chemical/Solvent Resistance**

Tensile Strength, ISO 527-3,

Environment	°C	% of initial strength			
		100 h	1000 h	3000 h	5000 h
2% Ammonia/Water	150	80	80	85	85
Isopropanol	150	65	75	80	80
Motor oil (5W40 -Synthetic)	120	85	50	35	15
Water	22	75	105	95	80
Water	60	100	195	95	90
Water	90	110	105	100	100
Water/glycol 50/50	100	115	95	95	95
Water/glycol 50/50	120	110	115	80	70

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. Special surface treatments can increase the bond strength and durability.
3. Best results are achieved utilizing a helix 8mm diameter, 24 element mix nozzle.
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.
5. Excess uncured adhesive can be wiped away with organic solvent (e.g. Acetone).
6. Certain materials can inhibit the curing of LOCTITE® SI 5700™, such as organotin compounds, sulfur-containing materials and amine-containing materials.

Not for product specifications

The technical data contained herein are intended as reference only. Please contact your local quality department for assistance and recommendations on specifications for this product.

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

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

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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Reference 0.1