

LOCTITE SI 5290

July 2018

PRODUCT DESCRIPTION

LOCTITE SI 5290 provides the following product characteristics:

Technology	Silicone
Chemical Type	Alkoxy silicone
Appearance (uncured)	Transparent amber to yellow liquid ^{LMS}
Components	One component - requires no mixing
Cure	Ultraviolet (UV) light
Secondary Cure	Moisture for shadowed areas
Application	Conformal coating
Flexibility	Enhances load bearing & shock absorbing characteristics of the bond area.

LOCTITE SI 5290 is used for protecting printed circuit boards and other sensitive electronic components. It is designed to provide environmental protection. This product is typically used in applications with an operating range of -53 °C to 204 °C.

TYPICAL PROPERTIES OF UNCURED MATERIAL

Specific Gravity @ 25 °C	1.0
Solids/Non-Volatile Content, %	≥92 ^{LMS}
Flash Point - See SDS	
Viscosity, Brookfield - RVT, 25°C, mPa·s (cP):	
Spindle 1, speed 10 rpm	100 to 350 ^{LMS}

TYPICAL CURING PERFORMANCE

Normal processing conditions will include exposure to sufficient UV light irradiance to effectively cure the material. Surface and/or atmospheric moisture will promote the cure of material in shadowed regions. Although functional strength is developed almost instantly due to the UV curing nature of LOCTITE SI 5290, increased cure properties are developed during 72 hours at ambient conditions.

Surface Cure

Tack Free Time, hours:	
Cured @ 25 °C / 50±5 % RH	≤18.3 ^{LMS}
Tack Free Time, seconds:	
Medium pressure mercury arc:	
70 mW/cm ² ,	20 to 40

TYPICAL PROPERTIES OF CURED MATERIAL

Cured @ 40 mW/cm² , for 60 seconds per side plus 7 days @ 22 °C / 50% RH

Physical Properties:

Coefficient of Thermal Expansion, ISO 11359-2, K ⁻¹	2.39×10 ⁻⁴
Coefficient of Thermal Conductivity, ISO 8302, W/(m·K)	0.15
Glass Transition Temperature, °C	-45
Water Absorption, ISO 62, %:	
24 hours in water @ 23 °C	0
Water Vapor Trans. Rate, ASTM E96, g/(h·m ²)	1.7
Elongation, ISO 37, %	15
Tensile Strength, ISO 37	N/mm ² 0.5
	(psi) (70)
Tear Strength, ISO 34-1 , Die B	N/mm 0.8
	(lb./in.) (5)

Cured @ 70 mW/cm² , for 60 seconds per side

Physical Properties:

Shore Hardness, ISO 868, Durometer OO	70 to 85 ^{LMS}
UV Depth of Cure, mm	≥0.9 ^{LMS}

Cured @ 70 mW/cm² , for 60 seconds plus 72 hours @ 22 °C

Electrical Properties:

Dielectric Constant / Dissipation Factor, IEC 60250:	
100 Hz	2.9 / 0.006
1 kHz	3.15 / 0.003
1 MHz	3.19 / 0.009
Volume Resistivity, IEC 60093, Ω·cm	2×10 ¹⁴
Surface Resistivity, IEC 60093, Ω	8×10 ¹⁶
Dielectric Breakdown Strength, IEC 60243-1, kV/mm	18

GENERAL INFORMATION

For safe handling information on this product, consult the Safety Data Sheet (SDS).

Directions for use:

1. For best performance bond surfaces should be clean and free from grease.
2. The product is designed to be initially cured with UV light at a minimum irradiance of 70 mW/cm² for approximately 20 seconds, increased exposure may be required for curing deeper sections.
3. Functional strength is achieved almost instantly.
4. Full performance properties will develop over 72 hours.
5. 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.
6. Excess material can be easily wiped away with non-polar solvents.

Loctite Material Specification^{LMS}

LMS dated February 27, 1997. 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: 2 °C to 8 °C. Storage below 2 °C or greater than 8 °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

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