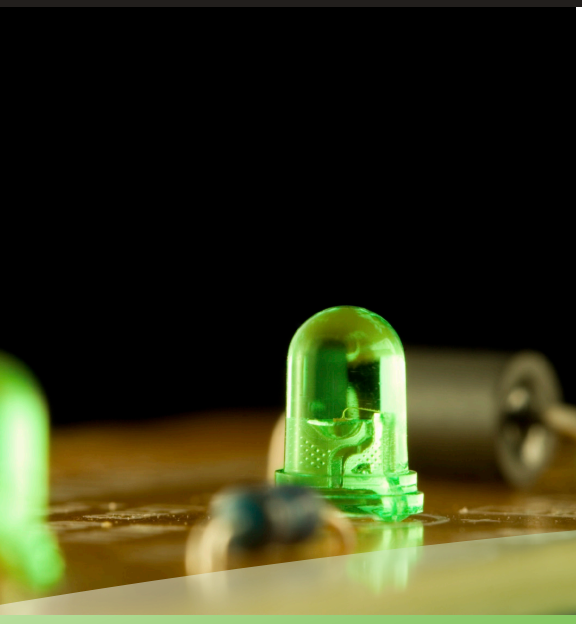
CSL649 | LED Silicone Sealant



Benefits

- Resists moisture, vibration, and temperature extremes
- UV stable
- Non-corrosive
- Self-bonding
- Easy to use and repair

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LED potting, encapsulating and bonding

Light-emitting diodes (LEDs) are a semiconductor light source that is increasingly used in applications as diverse as aviation lighting, automotive lighting, advertising, traffic signals, outdoor display screens, advanced communication technologies and general lighting.

Encapsulation, potting, bonding, coating and sealing in many of the applications, offers protection for the lighting device from moisture ingress and other harsh environmental hazards.

In automotive and aviation applications it offers additional protection from vibration and heat, improved performance over a wide range of operating temperatures and high degree of reliability and longevity.

Why do silicones excel in LED applications?

Silicone elastomers can be formulated to meet many of the physical properties required by designers working with LED's. Silicone sealants for LEDs:

- are easy to use and repair
- have excellent electrical and heat management properties
- are flexible and absorb mechanical shock and vibration
- resist ultra-violet rays, ozone, and weathering
- are resistant to humidity, moisture, and are water repellent
- have excellent thermal stability
- have low ionic content minimizing corrosion potential

CSL649 100% Silicone LED Encapsulating, Potting and Bonding Sealant

CSL649 is a uniquely formulated one-part, RTV (Room Temperature Vulcanizing) silicone sealant for use in a variety of LED applications.

CSL649 does not generate corrosive by-products during cure, making it ideal for use in corrosion-sensitive LED lighting packages with no adverse effects.

CSL649 has a wide operating temperature range of -40˚C to 200˚C (-40˚F to 392˚F) enabling the LED packages to pass common industry reliability tests.

CSL649 will not yellow due to UV exposure causing no detrimental effects on the light output of the LED.

CSL649 has a low modulus and a high Coefficient of Thermal Expansion (CTE) to protect the delicate wire connections between PCB and diode from mechanical stress.

CSL649 is self-bonding to a wide range of substrates without the use of a primer resulting in improved delamination resistance and device reliability.

... CSL649 Product Characteristics

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Typical Applications

- Outdoor signage, display and lighting
- Automotive interior and backlighting
- Sealing aviation displays
- Rail & road signaling systems
- Liquid crystal display (LCDs) backlighting
- Cell phone flash modules
- Broad general lighting such as architectural, airport, street, theatre, domestic, industrial machine, and medical

Features

- **Neutral cure formulation will not corrode copper, brass or silver**
- **Excellent hydrophobicity**
- **Can be applied by spray, flow and brush techniques**

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CSL649 Intended Uses

CSL649 can be used for a broad range of LED lighting applications. It is particularly effective for display screens made up of thousands of LEDs that need to be potted for protection from the environment.

Since CSL649 can also be formulated in various colors including black it is particularly effective for improving LED definition, for concealing supporting electronic components, and for reducing unwanted light reflection in outdoor applications.

CSL649 Typical Properties‡

Cure System	One part RTV/Oxime
Flowability	Pourable Liquid
Viscosity [cP]	250 - 300
Skin Over Time at Standard Conditions[2] [min]	5-15
Cure Time at Standard Conditions[1] - 10 mil [hours]	1
Hardness[2] ASTM D2240 [points]	30 Shore A
Dielectric Strength[2] ASTM D149 [V/mil]	963.17 (379.2 kV/mil)
Volume Resisitivity[2] ASTM D257 [ohm.cm]	>1.72 x 10^{12}

‡Data is subject to change without notice. These values are not intended for use in preparing specifications. For more complete information, please refer to the current Technical Data Sheets for these products.

NOTES
1 Standard Conditions are 25˚C (77˚F) and 50% relative humidity
2 Cured for 7 days at Standard Conditions[1]

CSL649 Availability

Colors¥

Clear	000

¥The color chips are only representations of actual colors and should not be considered an exact color match to finished product.

CSL649 is available in clear.

Custom colors may be available upon request.

Packaging

CSL649 is available in 3.8L (1 US gallon) cans, 19L (5 US gallon) pails and 189L (50 US gallon) drums.

Shelf Life and Storage

CSL649 has a shelf life of twelve months from date of manufacture when stored in the original unopened container in dry, shaded conditions, away from sources of heat or ignition, and stored at or below 90˚F (32˚C).