LED lamps and luminaires are challenging incumbent incandescent and fluorescent light sources in applications from architecture to automotive to general lighting. Yet solid-state lighting faces challenges of its own. New LED lighting designs must deliver more lumen density and power, withstand wider temperature ranges, simplify assembly and minimize the footprint, weight and cost of next-generation lighting systems.

Dow Corning’s extensive portfolio of optical silicone materials and design support can help address these tough industry demands, and offer a competitive edge at every point in the lighting value chain. Contact us to learn how our advanced silicone technology can enable lamp and luminaire designs that:

- **Optimize efficiency** by employing optically ultra-clear, easily shaped silicones for primary and secondary optical elements, and white silicone for reflectors.
- **Resist yellowing and physical degradation** from high heat and high lumen density (150°C+) to ensure high-brightness LED sources retain superb optical stability up to 50,000-hour lifetime.
- **Protect sensitive LED electronics** from thermal cycling stress and perform reliably at extreme temperatures ranging from -45°C to 200°C.
- **Push design boundaries** by enabling LED sources to feature more complex shapes, micro-scale optical structures, multifunction parts and even undercuts that are difficult to achieve with organic polymers or glass.
- **Simplify and speed processing** by exploring our silicone portfolio’s broad range of properties to enable easier and faster manufacturing.

Do not allow materials to define the limits of your LED lamp and luminaire design. Dow Corning’s broad portfolio of advanced silicones can help you push those limits, and innovate the next generation of advanced solid-state light sources.

The Best of Both Worlds

Silicone’s unique properties combine some of the very best qualities of glass and plastic.

Like glass, silicones provide high transparency to wavelengths in the visible spectrum, strong dielectric insulation and powerful resistance to moisture, chemicals and extreme temperatures.

Like plastics and other carbon-based organic polymers, silicones merge superb moldability with mechanical strength. They can also take many forms — from low-viscosity gels to flexible elastomers to stiff polymers.

By changing the size or structure of silicone molecules or by attaching different functional groups, Dow Corning can enhance or change material behavior and performance. In other words, we can tailor our silicones to deliver an amazing range of performance properties to benefit your LED lamp or luminaire design.
About Dow Corning

Established in 1943 specifically to explore and expand the potential of silicones, Dow Corning has grown to become a global leader in silicones, silicon-based technology and innovation.

To designers and manufacturers of LEDs and LED lamps and luminaires, we offer:
- More than 70 years of game-changing innovation for the global electronics industry
- Specific expertise in the development of performance-enhancing and enabling technologies for advanced lighting solutions
- An expansive materials tool box of traditional, optical-grade and thermally conductive silicone adhesives, gap fillers, encapsulants, gels and compounds

How Can We Help You Today?

Tell us about your design goals, performance demands and manufacturing challenges and we will put our silicone-based materials expertise and processing experience to work for you.

For more information about our materials and capabilities for the LED lighting industry, visit dowcorning.com/lighting.

To discuss how we could work together to meet your specific needs, email electronics@dowcorning.com.

LIMITED WARRANTY INFORMATION – PLEASE READ CAREFULLY

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