

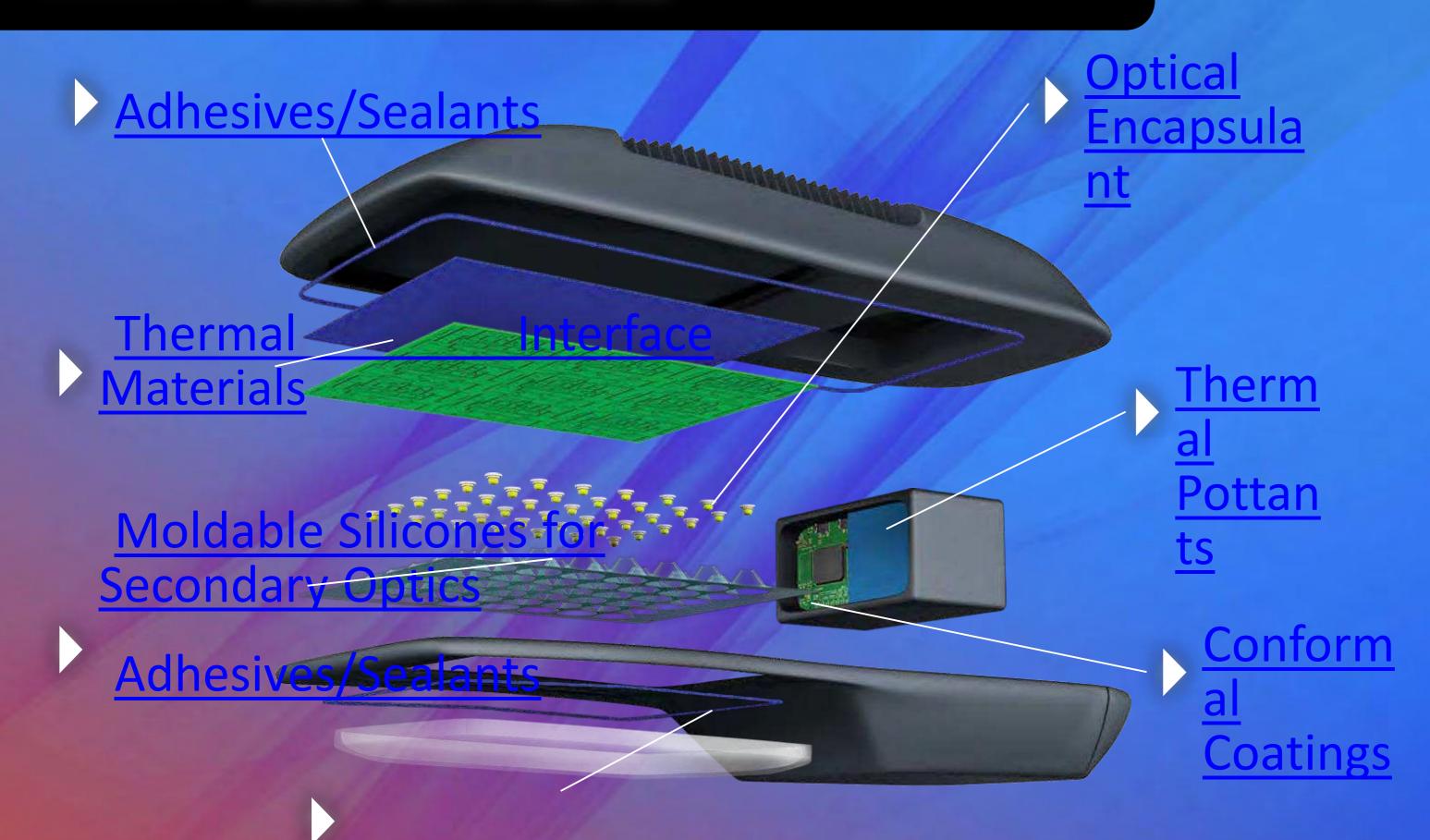
Protection, Assembly and Optical Materials



Brighter, more energy-efficient and longer-lasting lighting systems

The demand is everywhere. Innovative materials can help you meet that demand.

Learn how high-performance silicones from Dow Corning – and our lighting, technical, optical and process expertise – can help make your ideas brighter.





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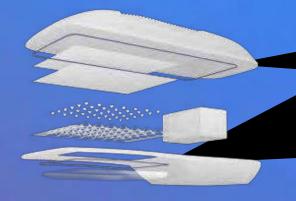


<u>LED</u> <u>Luminaires</u>









Adhesives/Sealants

By forming durable, low-stress elastomers, Dow Corning® brand thermal silicone adhesives and sealants increase your design flexibility, while providing reliable longterm performance. They offer excellent bonds and seals between a variety of common LED lamp and luminaire materials.

Dow Corning® 832 Multi-Surface Adhesive Sealant

Dow Corning® EA-2900 Sealant

Dow Corning® 3140 RTV Coating

Dow Corning® 3165 Fast Tack RTV Adhesive Sealant

Dow Corning® 3-1944 RTV Coating

Dow Corning® EA-4900 White RTV Adhesive

Dow Corning® 7091 Adhesive Sealant Dow Corning®
SE 9186 Adhesive Dow Corning® SE 9187 L Adhesive

Dow Corning® SE 9189 L RTV Adhesive

How can Dow Corning silicones help you meet your LED challenges? Talk to a member of the Dow Corning team.



Home



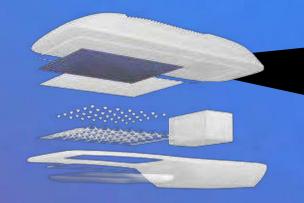
<u>LED</u> <u>Luminaires</u>



LED Packaging







Thermal Interface Materials

Nothing shortens lifespan more than heat ... and LED electronics generate a lot of it. By designing with Dow Corning® brand silicone thermal interface materials, you have more heat management options.

Thermal Adhesives form thermally stable bonds to most LED PCB substrates and deliver excellent thermal conductivity. Their low volatility means no adverse impact on components or light output.

Dispensable Thermal Pads allow you to quickly and precisely print thermally conductive silicone pads in controllable thicknesses on complex substrate shapes. They offer you enhanced thermal performance and can accelerate production and, in many cases, reduce system costs.

Dow Corning® SE 4485 Thermally Conductive Adhesive

Dow Corning® TC-5026 Thermally Conductive Compound

Dow Corning® 3-6752 Thermally Conductive Adhesive Dow

Corning® TC-5080 Thermally Conductive Compound Dow

Corning® 1-4173 Thermally Conductive Adhesive

Dow Corning® SE 4486 Thermally Conductive Adhesive

Dow Corning® TC-5629 Thermally Conductive Compound

Dow Corning® TC-4025 Dispensable Thermal Pad

Dow Corning® EA-9189 H RTV Adhesive

To Learn More

How can Dow Corning silicones help you meet your LED challenges? Talk to a member of the Dow Corning team.



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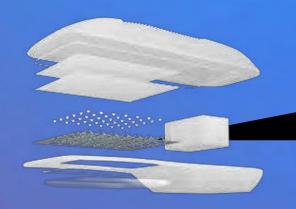
<u>LED</u> <u>Luminaires</u>



LED Packaging







Moldable Silicones for Secondary Optics

You will find an unprecedented level of design freedom with moldable optical silicones from Dow Corning. They allow you to explore more complex architectures - often while simplifying the manufacturing process.

They can also boost the long-term performance of your design. Not only do they offer excellent optical properties, they are more resistant to impact damage and degradation from UV, heat and environmental extremes than traditional optical materials - delivering high lumen density while remaining stable over time.

Dow Corning® El-1184 Optical Encapsulant

Dow Corning® MS-0002 Moldable Silicone

Dow Corning® MS-1001 Moldable Silicone
Dow Corning® MS-1002 Moldable Silicone
Dow Corning® MS-1003 Moldable Silicone

Dow Corning® MS-4002 Moldable Silicone

How can Dow Corning silicones help you meet your LED challenges? Talk to a member of the Dow Corning team.



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<u>Luminaires</u>



LED Packaging

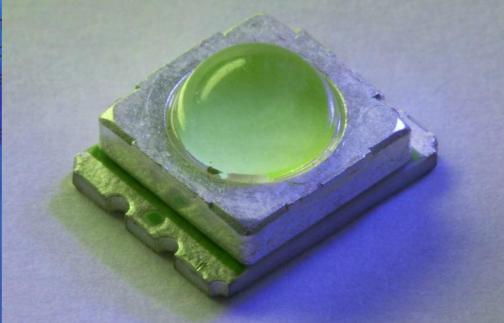






Optical Encapsulant

One way to realize greater efficiency and lower total cost of own that can perform multiple functions. Our secondary optics encap opportunity. Besides providing superior protection from moisture and impact, it offers excellent optical performance. You can couland degradation and consistent light quality over the product life.



Dow Corning® OE-7643 Optical Encapsulant

To Learn More

How can Dow Corning silicones help you meet your LED challenges? Talk to a member of the Dow Corning team.



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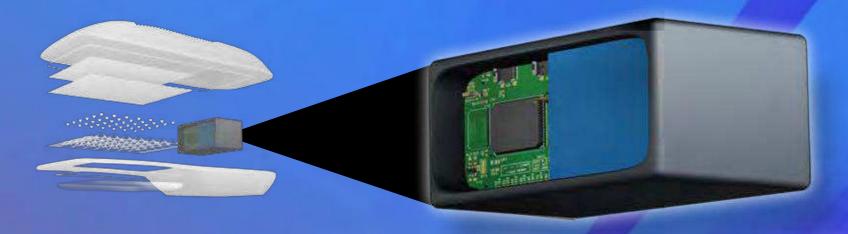
<u>LED</u> <u>Luminaires</u>



LED Packaging







Thermal Pottants

Environmental contamination and thermal damage are two of the biggest threats to the long-term reliability of your LED lamp or luminaire. *Dow Corning*® and *Sylgard*® brand thermal silicone pottants protect LED drivers from moisture and dust while dissipating heat and absorbing component noise.

Sylgard® 160 Silicone Elastomer Sylgard® 164
Silicone Elastomer Sylgard® 170 Silicone
Elastomer

Sylgard® 170 Fast Cure Silicone Elastomer
Sylgard® 567 Primerless Silicone Encapsulant
Dow Corning® CN-8760 Thermally Conductive
Encapsulant

To Learn More

How can Dow Corning silicones help you meet your LED challenges? Talk to a member of the Dow Corning team.



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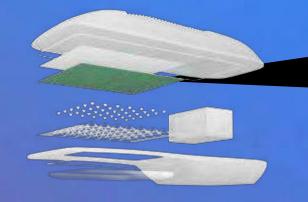
<u>LED</u> <u>Luminaires</u>



LED Packaging







Conformal Coatings

Delicate electronics need protection from humidity, moisture and physical stress. Dow Corning® brand silicone conformal coatings provide that protection - and deliver excellent insulation against shock and short circuits. They provide excellent unprimed adhesion to many common LED materials.

Dow Corning® 1-2577 Conformal Coating

Dow Corning® 1-2577 Low VOC Conformal Coating

Dow Corning® 1-2620 Low VOC Conformal Coating

Dow Corning® 1-4105 Conformal Coating

Dow Corning® 3-1944 RTV Coating

Dow Corning® 3-1953 Conformal Coating

Dow Corning® 3140 RTV Coating

Dow Corning® CC-2570 Conformal Coating

Dow Corning® CC-2571 Conformal Coating

How can Dow Corning silicones help you meet your LED challenges? Talk to a member of the Dow Corning team.



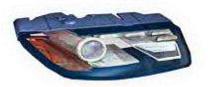
Home



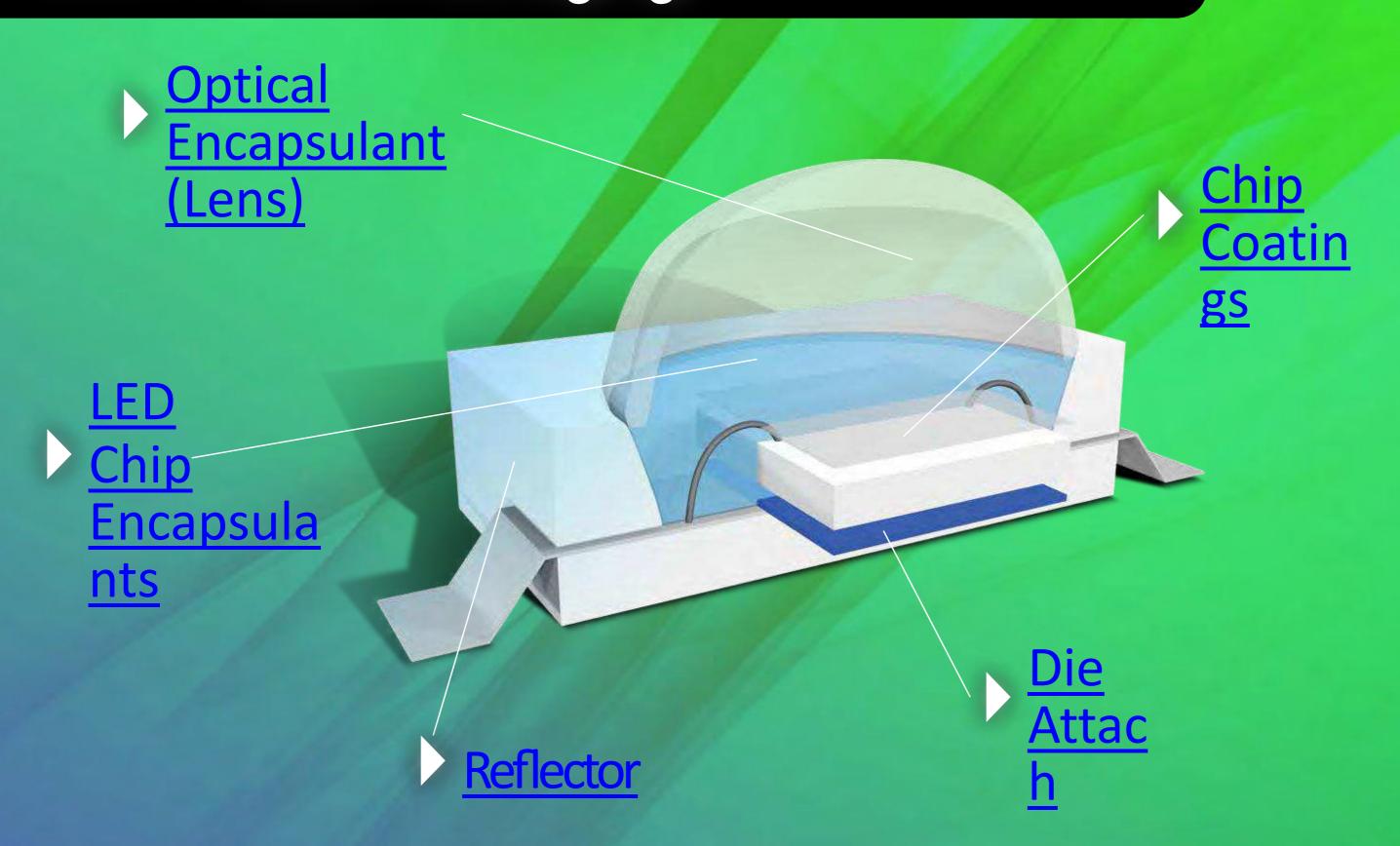
<u>LED</u> <u>Luminaires</u>



LED Packaging









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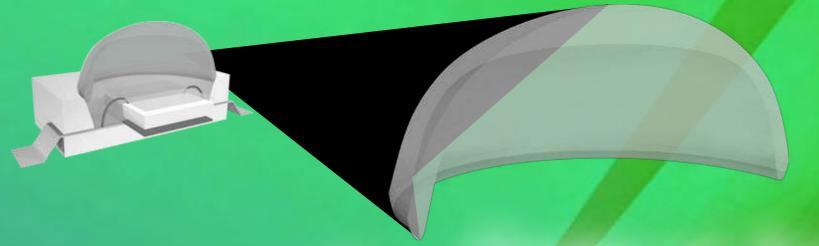
<u>LED</u> <u>Luminaires</u>



LED Packaging







Optical Encapsulant (Lens)

Dow Corning offers optical-grade encapsulants for LED packaging in optimized refractive index values, from 1.41 Normal Refractive Index (NRI) to high performance 1.54 High Refractive Index (HRI). Our innovative HRI encapsulants extract at least 7% more light from the LED package or chip for greater brightness. Our broad optical encapsulant product line has a tailored solution to meet the needs of a variety of LED device architectures that will help in maximizing both device performance and value.

Dow Corning® OE-7643 Optical Encapsulant

To Learn More

How can Dow Corning silicones help you meet your LED challenges? Talk to a member of the Dow Corning team.



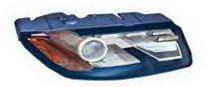
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<u>LED</u> <u>Luminaires</u>



LED Packaging







Chip Coatings

Protect your circuit board and gain extra reliability and long service life with *Dow Corning*® brand conformal coatings. Our proven coatings shield circuitry in severe LED service environments, while reducing stress on components and connections, all with the added benefit of lower lifetime costs.

Dow Corning® OE-6630 Optical Encapsulant

Dow Corning® OE-6636 Optical Encapsulant

Dow Corning® OE-7810 Optical Encapsulant

To Learn More

How can Dow Corning silicones help you meet your LED challenges? Talk to a member of the <u>Dow Corning team.</u>

LED Headlamp Assemblies



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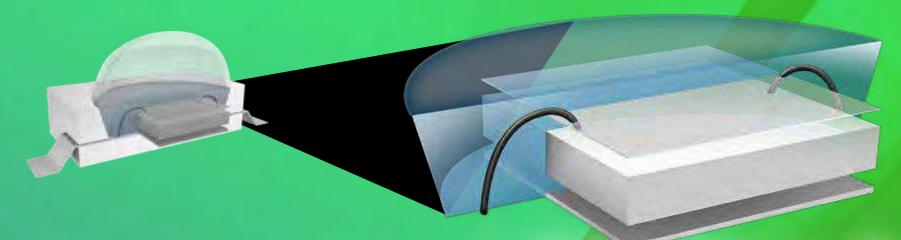
<u>LED</u> <u>Luminaires</u>



LED Packaging







LED Chip Encapsulants

Dow Corning® brand optical encapsulants offer higher thermal stability, enabling longer maintenance of light quality. In addition, our phenyl-based encapsulants offer a comparatively stronger gas barrier than methyl technology to minimize degradation of light output efficiency by protecting delicate silver-plated LED electrodes from sulfur attack, while our methyl-based materials offer slightly greater photothermal stability to minimize yellowing and degradation in performance after long exposure to high heat and strong light.

<u>Dow Corning® OE-6370 HF Optical Encapsulant</u>

Dow Corning® OE-6370 M Optical Encapsulant

Dow Corning® OE-6630 Optical Encapsulant Dow

Corning ® OE-6636 Optical Encapsulant

Dow Corning® OE-6650 Optical Encapsulant Dow

Corning® OE-7651 N Optical Encapsulant Dow

Corning® OE-7662 Optical Encapsulant Dow

Corning® OE-7810 Optical Encapsulant Dow

Corning® OE-7820 Optical Encapsulant Dow

Corning® OE-7840 Optical Encapsulant Dow

Corning® OE-7841 Optical Encapsulant Dow

Corning® OE-7843 Optical Encapsulant

To Learn More



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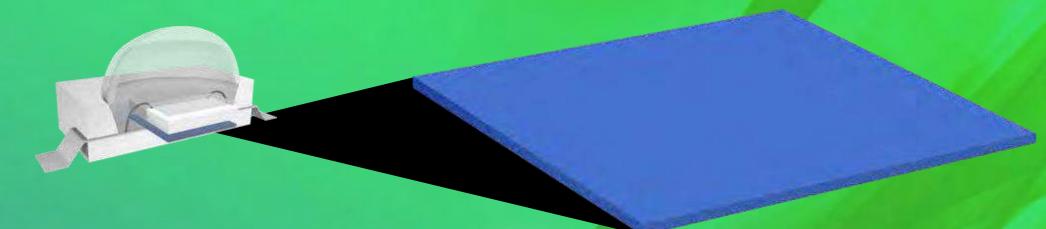
<u>LED</u> <u>Luminaires</u>





Assemblies





Die Attach

Dow Corning® brand silicone-based adhesives offer excellent photo and thermal stability characteristics, with high adhesion strength over a wide range of temperatures. Our transparent LED die attach solutions will help you meet the needs of ever-demanding LED packages.

Dow Corning® OE-8001 Die Attach Adhesive

Dow Corning® OE-8002 Die Attach Adhesive

Dow Corning® OE-8011 Die Attach Adhesive

To Learn More

How can Dow Corning silicones help you meet your LED challenges? Talk to a member of the Dow Corning team.



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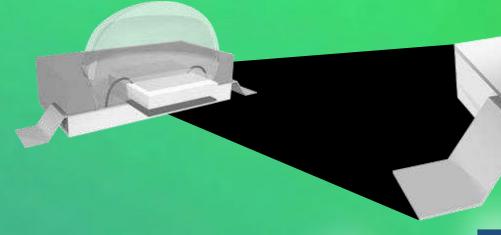
LED Luminaires



LED Packaging







Reflector

Improving reflectivity begins at the source – the LED die packaging. However, because packaging materials are located so close to the heat of the LED die, high thermal- and photo-stability is nearly as critical as high reflectivity.

Unlike conventional organic materials, *Dow Corning*[®] brand reflective silicones will not physically or optically degrade after prolonged exposure to high lumen density or temperatures reaching 200 °C. As a result, they help improve light extraction while delivering excellent photo and thermal stability and high initial light output (LOP).

Dow Corning® WR-6000 White Reflective Coating

To Learn More

How can Dow Corning silicones help you meet your LED challenges? Talk to a member of the Dow Corning team.



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LED Packaging









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LED Packaging







Lens/Assembly

This is the business end of your headlamp assembly. Silicone adhesives, optics and reflective coatings from Dow Corning offer you new freedom of design and increased performance – thanks to the unique properties of silicones and our global network of experts.

Adhesives & Sealants

Moldable Optical Silicones

Reflective Coatings

LED Headlamp

To Learn More

How can Dow Corning silicones help you meet your LED challenges? Talk to a member of the Dow Corning team.



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LED Packaging



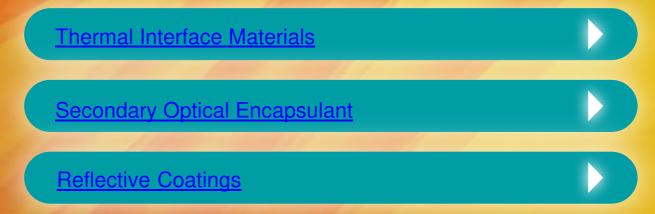
Assemblies





LED Board

The nerve center of your LED assembly, the PCB has unique needs. Silicone thermal interface materials, encapsulants and coatings from Dow Corning can help you meet them – and increase performance while opening up new design possibilities.



To Learn More

How can Dow Corning silicones help you meet your LED challenges? Talk to a member of the Dow Corning team.



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<u>LED</u> <u>Luminaires</u>









Control/Heat Sink

Heat management is one of the most vital considerations in your LED headlamp design. Silicone thermal management materials from Dow Corning offer you highly stable and versatile options to manage heat.

Conformal Coatings/Gels

Thermal Interface Materials

Thermally Conductive Pottants

To Learn More

How can Dow Corning silicones help you meet your LED challenges? Talk to a member of the Dow Corning team.



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<u>LED</u> <u>Luminaires</u>









Housing

Your assembly depends on the integrity of its housing. *Dow Corning* brand silicone adhesives and sealants help you maintain a moisture-, dust- and dirt-proof environment with long-lasting adhesion under the most demanding conditions.

Adhesives/Sealants



To Learn More

How can Dow Corning silicones help you meet your LED challenges? Talk to a member of the Dow Corning team.



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<u>LED</u> <u>Luminaires</u>









Lens/Assembly Adhesives & Sealants

By forming durable, low-stress elastomers, *Dow Corning*® brand thermal silicone adhesives and sealants increase your design flexibility, while providing reliable long-term performance. They offer excellent bonds and seals between a variety of common LED lamp and luminaire materials. Corning® 3140 RTV Coating

Dow Corning® 3165 Fast Tack RTV Adhesive Sealant

Dow Corning® 3-1944 RTV Coating

Dow Corning® EA-4900 White RTV Adhesive

Dow Corning® 7091 Adhesive Sealant Dow Corning®

SE 9186 Adhesive Dow Corning® SE 9187 L Adhesive

Dow Corning® SE 9189 L RTV Adhesive

To Learn More

How can Dow Corning silicones help you meet your LED challenges? Talk to a member of the **Dow Corning team**.







Home



Luminaires







Help

Adhesives & Sealants

Moldable **Optical**

Reflective Coatings



Lens/Assembly Moldable Optical Silicones

You will find an unprecedented level of design freedom with moldable optical silicones from Dow Corning. They allow you to explore more complex architectures – often while simplifying the manufacturing process.

They can also boost the long-term performance of your design. Not only do they offer excellent optical properties, they are more resistant to impact damage and degradation from UV, heat and environmental extremes than traditional optical materials – delivering high lumen density while remaining stable over time.

Dow Corning® MS-0002 Moldable Silicone

Dow Corning® MS-1001 Moldable Silicone

Dow Corning® MS-1002 Moldable Silicone

Dow Corning® MS-1003 Moldable Silicone

Dow Corning® MS-2002 Moldable Silicone

Dow Corning® MS-4002 Moldable Silicone

To Learn More

How can Dow Corning silicones help you meet your LED challenges? Talk to a member of the Dow Corning team.





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<u>LED</u> <u>Luminaires</u>







Adhesives & Sealants

Moldable Optical

Silicones

Reflective Coatings



Lens/Assembly Reflective Coatings

Reflective coatings enhance light output and efficiency in reflectors, lightboxes, mixing chambers, backlight units and other surfaces while offering high resistance to environmental aging. They also offer you the other benefits of silicones: protection from humidity, moisture and thermal stress and excellent insulation against high voltages and short circuits. Together, they help you further press the boundaries of design.

Dow Corning® CI-2001 White Reflective Coating

To Learn More

How can Dow Corning silicones help you meet your LED challenges? Talk to a member of the <u>Dow Corning team.</u>



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<u>LED</u> <u>Luminaires</u>



LED Packaging





Adhesives & Sealants

Moldable Optical

Silicones

Reflective Coatings





LED Board Thermal Interface Materials

Nothing shortens lifespan more than heat ... and LED electronics generate a lot of it. By designing with Dow Corning® brand silicone thermal interface materials, you have more heat management options.

Thermal Adhesives form thermally stable bonds to most LED PCB substrates and deliver excellent thermal conductivity. Their low volatility means no adverse impact on components or light output.

Dispensable Thermal Pads allow you to quickly and precisely print thermally conductive silicone pads in controllable thicknesses on complex substrate shapes. They offer you enhanced thermal performance and can accelerate production and, in many cases, reduce system costs.

Dow Corning® SE 4485 Thermally Conductive Adhesive

Dow Corning® TC-5026 Thermally Conductive Compound

Dow Corning® 3-6752 Thermally Conductive Adhesive Dow

Corning® TC-5080 Thermally Conductive Compound Dow

Corning® 1-4173 Thermally Conductive Adhesive

Dow Corning® SE 4486 Thermally Conductive Adhesive

Dow Corning® TC-5629 Thermally Conductive Compound

Dow Corning® TC-4025 Dispensable Thermal Pad

Dow Corning® EA-9189 H RTV Adhesive

Thermal <u>Interface</u>

Secondary **Optical**

Reflective Coatings

To Learn More

How can Dow Corning silicones help you meet your LED challenges? Talk to a member of the Dow Corning team.



Home



Luminaires











LED Board Secondary Optical Encapsulant

One way to realize greater efficiency and lower total cost of own *Dow Corning*® brand optical encapsulants offer you that opport thermal

stress and shock and impact, they offer excellent optical performance. You can count on minimal yellowing and degradation and consistent light quality over the product lifespan.

Dow Corning® EI-1184 Optical Encapsulant

Thermal Interface

Materials

Secondary Optical

Encapsulant

Reflective Coatings

To Learn More

How can Dow Corning silicones help you meet your LED challenges? Talk to a member of the Dow Corning team.





<u>LED</u> <u>Luminaires</u>



perform multiple functions

nor protection from moisture,







LED Board Reflective Coatings

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Thermal Interface

Materials

<u>Secondary</u> Optical

Encansulant

Reflective Coatings



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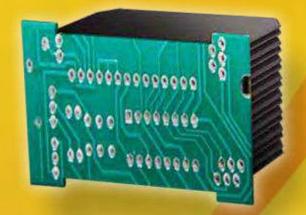


<u>LED</u> <u>Luminaires</u>









Control/Heat Sink Conformal Coatings/Gels

Delicate electronics need protection from heat, humidity, moisture and physical stress. *Dow Cornin* brand silicone conformal coatings provide that protection – and deliver excellent insulat against shock and short circuits. They provide excellent unprimed adhesion to many common LED

Conformal Coatings/Gels

Thermal Interface

Materials

Thermally Conductive

Pottants

Dow Corning® 1-2577 Conformal Coating

Dow Corning® 1-2577 Low VOC Conformal Coating

Dow Corning® 1-2620 Low VOC Conformal Coating

Dow Corning @1-4105 Conformal Coating

Dow Corning® 3-1944 RTV Coating

Dow Corning® 3-1953 Conformal Coating

Dow Corning® 3140 RTV Coating

Dow Corning® CC-2570 Conformal Coating

Dow Corning® CC-2571 Conformal Coating

To Learn More

How can Dow Corning silicones help you meet your LED challenges? Talk to a member of the <u>Dow Corning team.</u>





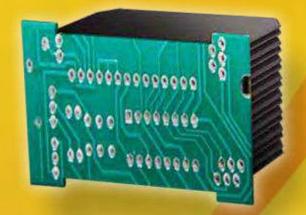












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Dow Corning® TC-5026 Thermally Conductive Compound

Dow Corning® 3-6752 Thermally Conductive Adhesive Dow

Corning® TC-5080 Thermally Conductive Compound

Dow Corning® 1-4173 Thermally Conductive Adhesive

Dow Corning® SE 4486 Thermally Conductive Adhesive

Dow Corning® TC-5629 Thermally Conductive Compound

Dow Corning® TC-4025 Dispensable Thermal Pad

Dow Corning® EA-9189 H RTV Adhesive

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How can Dow Corning silicones help you meet your LED challenges? Talk to a member of the Dow Corning team.





<u>LED</u> Luminaires







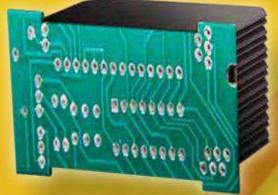
Conformal Coatings/Gels

Thermal Interface

Materials

Thermally Conductive

Pottants



Control/Heat Sink **Thermal Pottants**

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and absorbing component noise.

Sylgard® 160 Silicone Elastomer Sylgard® 164

Silicone Elastomer Sylgard® 170 Silicone

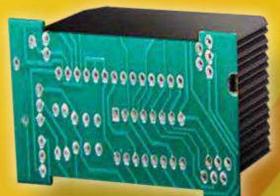
Sylgard® 170 Fast Cure Silicone Elastomer

Sylgard® 567 Primerless Silicone Encapsulant

Dow Corning® CN-8760 Thermally Conductive Encapsulant

To Learn More

How can Dow Corning silicones help you meet your LED challenges? Talk to a member of the Dow Corning team.







Thermal <u>Interface</u>

Thermally

Conductive



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LED Luminaires



LED Packaging







Housing Adhesives/Sealants

By forming durable, low-stress elastomers, *Dow Corning*[®] brand thermal silicone adhesives and sealants increase your design flexibility, while providing reliable long-term performance. They offer excellent bonds and seals between a variety of common LED lamp and luminaire materials.

Dow Corning® 832 Multi-Surface Adhesive Sealant

Dow Corning® EA-2900 Sealant

Dow Corning® 3140 RTV Coating

Dow Corning® 3165 Fast Tack RTV Adhesive Sealant

Dow Corning® 3-1944 RTV Coating

Dow Corning® EA-4900 White RTV Adhesive

Dow Corning® 7091 Adhesive Sealant Dow Corning®

SE 9186 Adhesive Dow Corning® SE 9187 L Adhesive

Dow Corning® SE 9189 L RTV Adhesive





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<u>LED</u> <u>Luminaires</u>



LED Packaging





To Learn More

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