



Electronic Materials for LED Applications

SELECTOR GUIDE

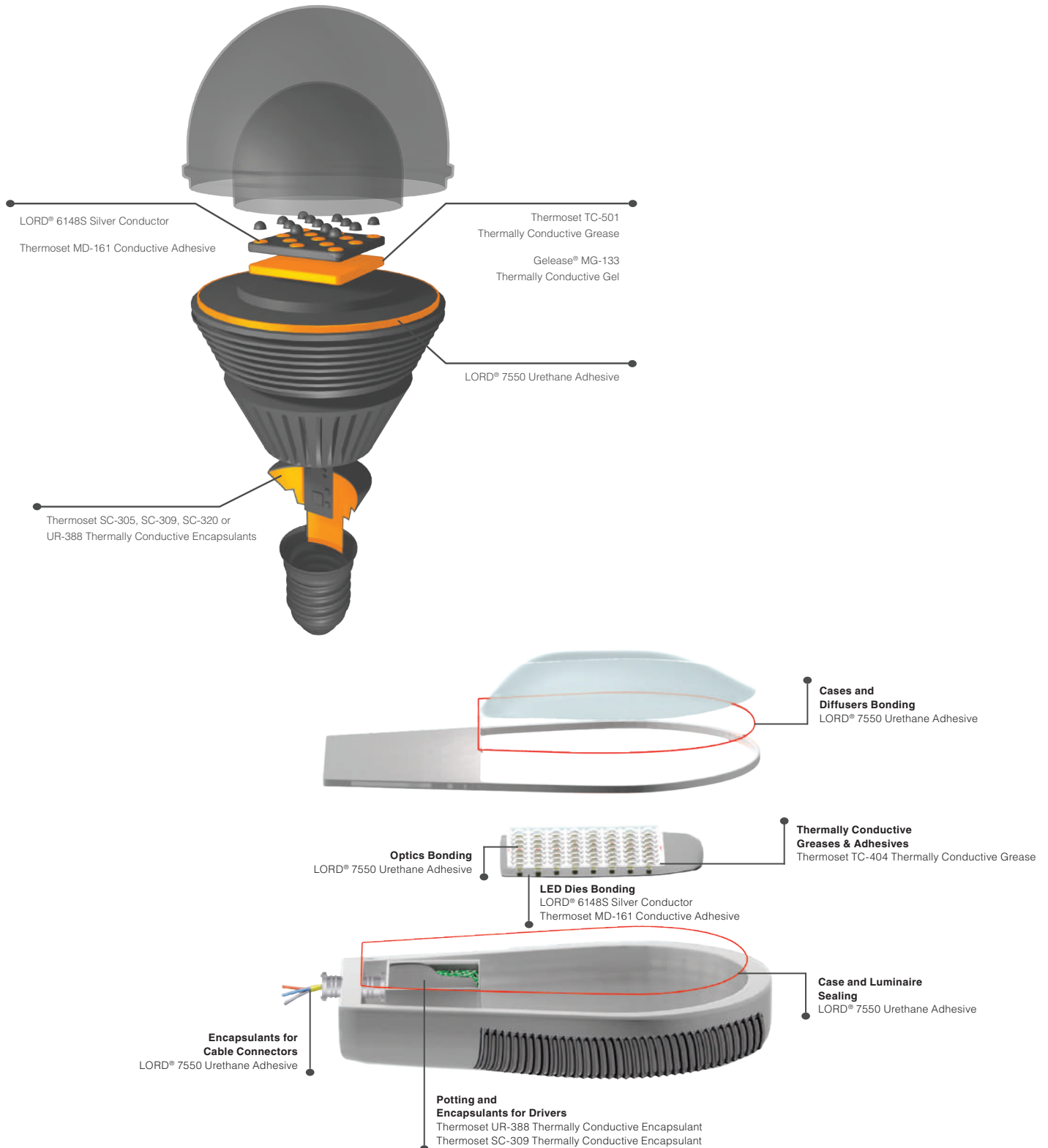
Adhesives

Thermal Management Materials

LORD
AskUsHow™

LORD Corporation specializes in developing world-class adhesives and thermal management materials including gels, greases and encapsulants for demanding LED applications. Our experience in electronic materials spans more than 40 years. We incorporate this vast experience in developing solutions for new applications to help ensure our customers' success.

TYPICAL APPLICATIONS



ADHESIVES

LORD adhesives have been specified for challenging LED applications requiring superior strength over a wide range of temperatures. Our technology allows us to achieve superior performance at competitive costs by minimizing the amount of costly raw material components.

| PRODUCT | Thermoset MD-140SP | Thermoset MD-161 | Thermoset MT-125 | Thermoset MT-815 | LORD® PCC40579 | Circalok™ 6150 |
|----------------------------|--|------------------|---------------------------------|---|----------------|----------------------------------|
| CHEMISTRY | Epoxy | Epoxy | Epoxy | Epoxy | Epoxy | Epoxy |
| UL APPROVED | — | — | — | — | — | — |
| VISCOSITY, cps @ 25°C | 30,000 | 40,000 | 100,000 | 50,000 | 7,000 | 145,000 |
| THERMAL CONDUCTIVITY, W/mK | 12 | 1.9 | 2.4 | 12 | 6.2 | 0.6 |
| FILLER TYPE | Metal | Metal | Metal | Metal | Metal | Mineral |
| SHELF LIFE, MONTHS | 12 @ -40°C | 6 @ -30°C | 6 @ -30°C | 6 @ 0°C | 6 @ -40°C | 3 @ 5°C |
| WORKING LIFE @ 25°C | 72 hr | 120 hr | 2 wk | 24 hr | 72 hr | 1 mo |
| CURE SCHEDULE | 5–10 min @ 120°C 3–5 min @ 150°C 1–3 min @ 180°C | 60 min @ 150°C | 30 min @ 100°C 8 min @ 150°C | 40 min ramp from room temperature to 160°C with 60 min dwell time @ 160°C | 5 min @ 150°C | 30 min @ 121°C 10 min @ 177°C |

Data is typical and not to be used for specification purposes.

| PRODUCT | Thermoset EP-937 | Thermoset ME-456 | LORD® 6100HV | LORD® 6148S | LORD® 7550 |
|----------------------------|------------------|------------------|-------------------|----------------|--------------------------|
| CHEMISTRY | Epoxy | Epoxy | Epoxy | Epoxy | Urethane |
| UL APPROVED | — | — | — | — | — |
| VISCOSITY, cps @ 25°C | 39,000–56,800 | 1,200,000 | 345,000 | 10,000 | 6,000 |
| THERMAL CONDUCTIVITY, W/mK | <0.5 | 0.6 | N/A | 7.5 | N/A |
| FILLER TYPE | Mineral | Mineral | Metal | Metal | N/A |
| SHELF LIFE, MONTHS | 6 @ 0–5°C | 6 @ -40°C | 6 @ -20°C | 3 @ -20°C | 6 @ 21–27°C |
| WORKING LIFE @ 25°C | 1 mo | 36 hr | N/A | 8 hr | 3–5 min |
| CURE SCHEDULE | 20 min @ 150°C | 30 min @ 150°C | 30-60 min @ 150°C | 15 min @ 125°C | 72 hr @ room temperature |

Data is typical and not to be used for specification purposes.

THERMAL MANAGEMENT MATERIALS

LORD thermally conductive materials are easily applied and have high thermal conductivity/low thermal resistance to improve device reliability.

| PRODUCT | GELS | | GREASES | | | ENCAPSULANTS | | | |
|----------------------------|--|----------------------------------|------------------|------------------|------------------|--|--|---|--|
| | Gelease® MG-121 | Gelease® MG-133 | Thermoset TC-404 | Thermoset TC-405 | Thermoset TC-501 | Thermoset SC-305 | Thermoset SC-309 | Thermoset SC-320 | Thermoset UR-388 |
| CHEMISTRY | Silicone | Silicone | Silicone | Silicone | Silicone | Silicone | Silicone | Silicone | Urethane |
| UL APPROVED | UL 94 V-0 | — | — | — | — | UL 94 V-0 | UL 94 V-0 | UL 94 V-0 | UL 94 V-0 |
| VISCOSITY, cps @ 25°C | 60,500 | 105,900 | 141,800 | 125,000 | 128,400 | 5,500 (resin) 5,500 (hardener) 5,500 (mixed) | 3,500 (resin) 3,500 (hardener) 3,500 (mixed) | 25,000 (resin) 20,000 (hardener) 25,000 (mixed) | 15,000 (resin) 70 (hardener) 6,000 (mixed) |
| THERMAL CONDUCTIVITY, W/mK | 2.3 | 3.6 | 4.3 | 5.0 | 3.6 | 0.7 | 1.0 | 3.2 | 0.7 |
| SHELF LIFE, MONTHS | 6 @ -30°C | 6 @ -30°C | 6 @ -30°C | 6 @ -30°C | 6 @ -30°C | 6 @ 25°C | 6 @ 25°C | 9 @ 25°C | 6 @ 25°C |
| WORKING LIFE @ 25°C | 8 hr | 8 hr | N/A | N/A | N/A | 60 min | 30 min | 40 min | 30 min |
| CURE SCHEDULE | 2 hr @ 100°C 60 min @ 125°C 30 min @ 150°C | 60 min @ 100°C 30 min @ 120°C | N/A | N/A | N/A | 24 hr @ 25°C 2 hr @ 60°C 30 min @ 100°C | 15 min @ 100°C 10 min @ 120°C | 60 min @ 125°C | 24 hr @ 25°C 6 hr @ 60°C |

Data is typical and not to be used for specification purposes.



Scan with your smartphone.



Values stated herein represent typical values as not all tests are run on each lot of material produced. For formalized product specifications or specific product end uses, contact the Customer Support Center.

Information provided herein is based upon tests believed to be reliable. In as much as LORD Corporation has no control over the manner in which others may use this information, it does not guarantee the results to be obtained. In addition, LORD Corporation does not guarantee the performance of the product or the results obtained from the use of the product or this information where the product has been repackaged by any third party, including but not limited to any product end-user. Nor does the company make any express or implied warranty of merchantability or fitness for a particular purpose concerning the effects or results of such use.

LORD, Circalok, Gelease and "Ask Us How" are trademarks of LORD Corporation or one of its subsidiaries. Cree LED Solution Provider is a trademark of Cree, Inc.

LORD provides valuable expertise in adhesives and coatings, vibration and motion control, and magnetically responsive technologies. Our people work in collaboration with our customers to help them increase the value of their products. Innovative and responsive in an ever-changing marketplace, we are focused on providing solutions for our customers worldwide ... Ask Us How.

LORD Corporation

World Headquarters

111 Lord Drive
Cary, NC 27511-7923
USA

Customer Support Center (in United States & Canada)

+1 877 ASK LORD (275 5673)

www.lord.com

For a listing of our worldwide locations, visit LORD.com.

