

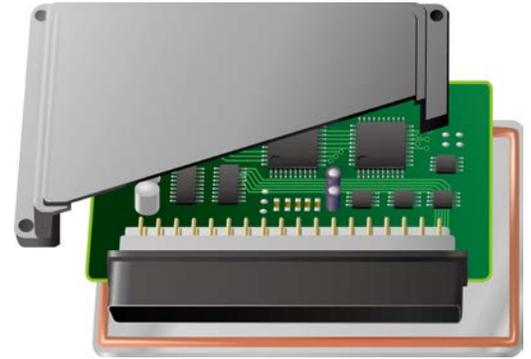
FOR IMMEDIATE RELEASE:

SILICONE SOLUTIONS FOR LiDAR EVOLUTION:

SHIN-ETSU SILICONES TO SHOWCASE ESSENTIAL AUTO-BASED THERMAL MANAGEMENT SENSOR APPLICATION PRODUCTS AT AUTOMOTIVE LiDAR CONFERENCE 2019.

Akron, OH—September 2019

LiDAR (Light Detection and Ranging) is a surveying technology that measures distance by illuminating a target with a pulse of light. In use for over 60 years in military, aerospace, robotics, and meteorological fields, it is experiencing a boom of interest due to the expectation that it will be one of the main types of sensors to enable autonomous, or ‘self-driving’, cars.



In an effort to advance silicones for automotive LiDAR applications, Shin-Etsu Silicones of America, Inc. (SESA: A U.S. subsidiary of Shin-Etsu Chemical Co. Ltd., Japan) will exhibit (Table #12) at the second annual Automotive LiDAR 2019 Conference and Exhibition (The Henry Hotel, Dearborn, MI: September 25-26). Additionally, SESA will sponsor a breakfast on Thursday, September 26th, followed by a conference presentation from 9:45-9:55 am.

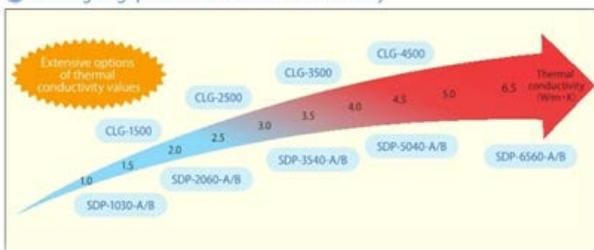
SESA’s focus for LiDAR and automotive sensors will be their silicone TIMs (Thermal Interface Materials), visible light blocking encapsulants, UV curable, low modulus adhesives and anti-smudge (AS) coatings.

Known for their broad silicone TIM grease product line in the automotive sensor market, SESA combines other RTV silicone to see where innovations are most needed in a myriad of these unique application arenas. Notably, SESA has recently advanced its TIM product line with thermal conductivity values of 1 W/m*K to 10 W/m*K to dissipate as much heat from sensors and other delicate components.

Key LiDAR-based application products Shin-Etsu Silicones will showcase include:

SDP GAP FILLER SERIES: SDP-1030-A/B, SDP-2060-A/B, SDP-3540-A/B, SDP-5040-A/B, SDP-6560-A/B, SDP-8070-A/B, and SDP-9550-A/B

Ranking of gap filler and thermal conductivity



The SDP Gap Filler series materials are ideal for cooling automotive electronics, power converters, LED lighting modules, communications modules, and other electronics. In addition to sensors, notable automotive market applications include; hybrids, ECUs (engine control units), and can be used for heat dissipation of electric batteries.

Each product comes as separate A and B components that must be mixed together in a 1:1 ratio to initiate the curing reaction. The thermal interface materials cure at room temperature when the two components are mixed. The cure time can be reduced with the addition of heat.

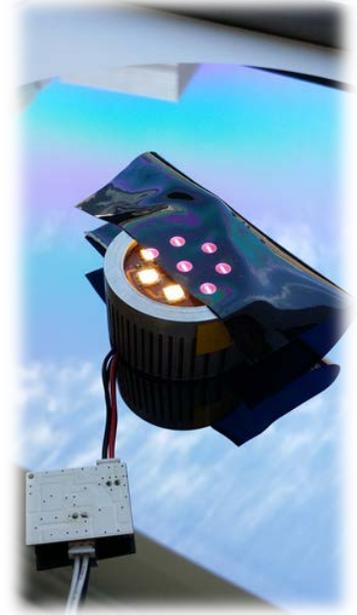
Before curing, the material has a grease-like consistency that easily fills voids in any shape between heat sources and heat sinks. By displacing the air from these nooks-and-crannies, a lower thermal resistance is achieved. Notably, the Gap Filler material can be applied only where you need it, thereby minimizing waste. The SDP series ranges in thermal conductivity from 1.0–9.5 W/mK.

AIR ENCAPSULANT SERIES: AIR-7070-A/B, AIR-7052F-A/B

This silicone-based polymer packaging material provides infrared ray (IR) transparency, visible light absorption for infrared ray devices such as Vertical Cavity Surface Emitting Lasers (VCSELS), detectors, photodiodes, etc. Providing higher reliability than epoxy products, they offer high hardness after cure (good for dicing/singulation processes), and are good for both dispensing into packages and mold processes. Notably, they provide high heat resistance and heat elongation for resistance to cracking.

SHIN-ESTU SUBELYNTM™: ANTI-SMUDGE COATING FOR DISPLAYS

This anti-smudge (AS) coating is ideal for inside the vehicle for touchscreens, and outside of LiDAR plastic displays to offer repellency with dust, oil, and water build-up. Very thin (10nm AS layer will work); it is applicable for glass and plastics—offering protective coating from dust and debris.



SESA / LIDAR CONCLUSION:

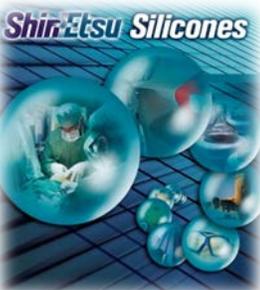
As autonomous vehicles' five-stages of self-driving evolution continues, automotive manufacturing entities have already identified approximately 200 sensor areas around the vehicle that will be instrumental in its realization and safety goals.

According to SESA's Thermal Interface Materials Western Regional Manager, Chad Kobylanski, "Shin-Etsu's depth of experience and knowledge as a silicone material leader in automotive sensor market has provided a spring board for us to invest in the future of key LiDAR market segments. We strive to be at the forefront of this, by developing essential RTV & TIM products and solutions for these unique and demanding applications."

Kobylanski also noted that many LiDAR-based SESA products are already in the mainstream including their SDP-6560-A/B, which is being used around engine control units (ECU's) to dissipate heat from the autopilot chips. Additionally, SESA has recently developed a new 9.5 W/m²K thermally conductive gap filler and is becoming the proven technology leader for silicone.

For more detailed information, visit the Shin-Etsu Silicones web site at:

www.shinetsusilicones.com or email event questions to LiDAR@hinetsusilicones.com



CORPORATE PROFILE:

A U.S. subsidiary of Shin-Etsu Chemical Co. Ltd., Japan, Shin-Etsu Silicones of America Inc. offers vast technical and capital resources to formulate solutions as a major supplier of silicone materials to North America's medical, automotive, electronics, aerospace, cosmetics, and manufacturing industries. Shin-Etsu's premium silicone compounds incorporate leading-edge technology, staff expertise, and value-added service; offering customers the highest levels of quality and consistency in specialty silicone materials.

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