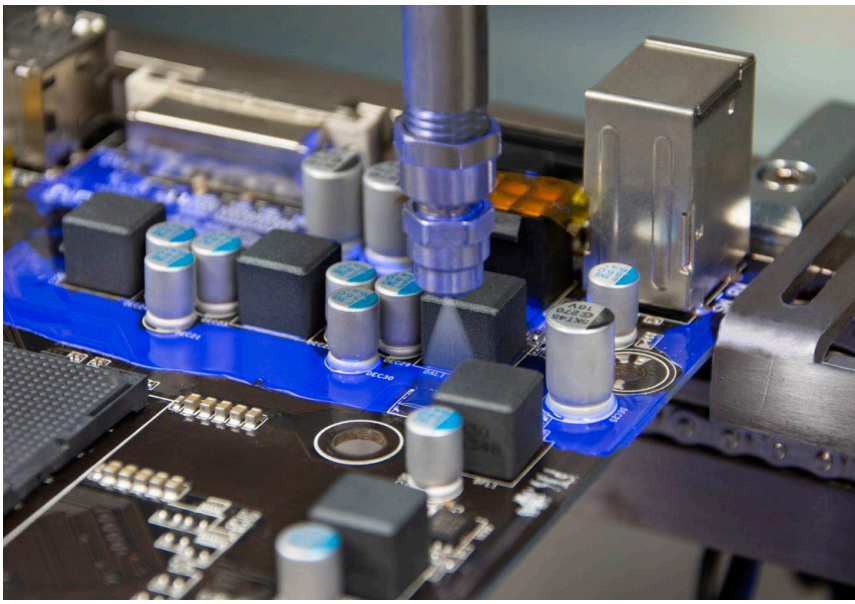
ELECTROLUBE

Delivering enhanced reliability to the automotive industry

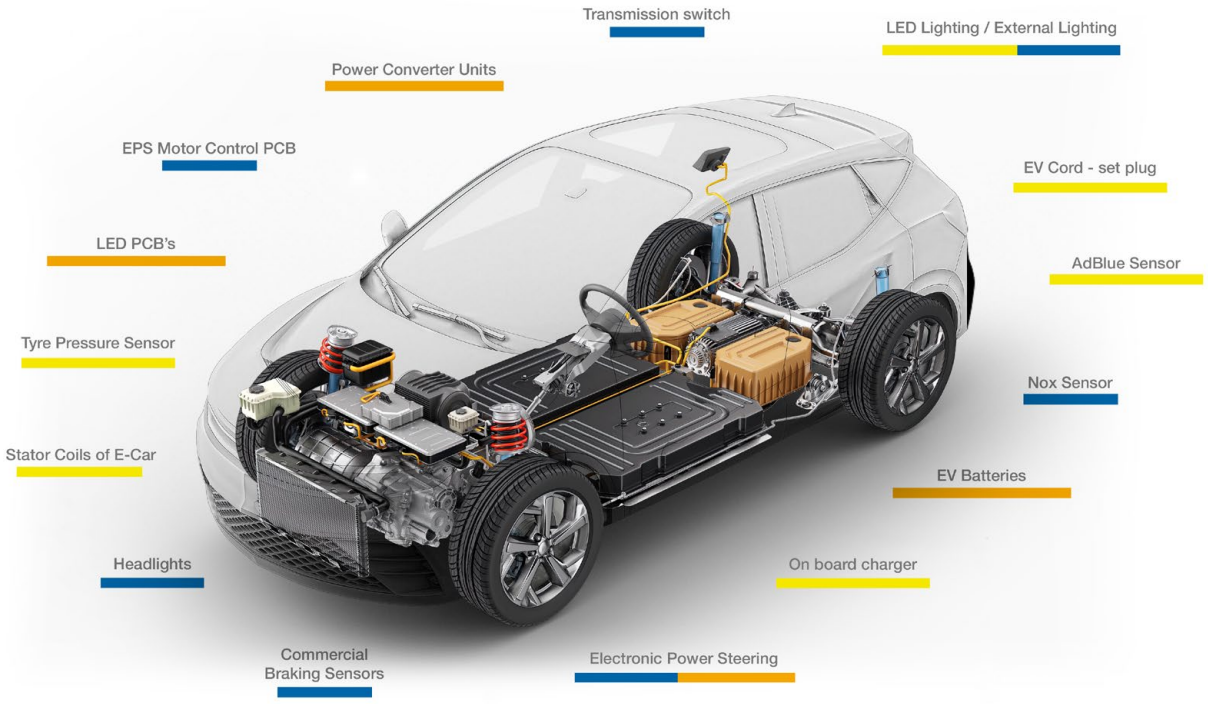





MacDermid Alpha
ELECTRONICS SOLUTIONS

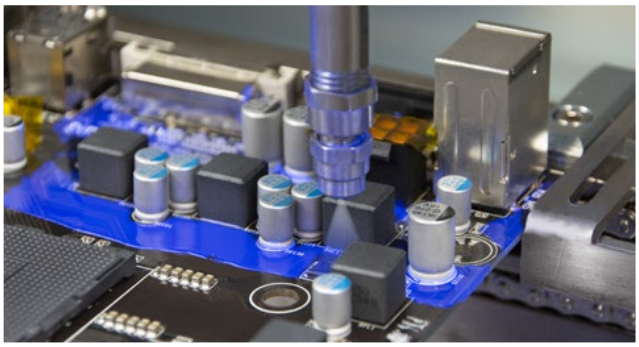
Electrolube provides first class technologies to enhance the reliability and performance of automotive electronics. Our three primary product areas are:

Conformal Coatings | **Encapsulation Resins** | **Thermal Management**



Conformal Coatings

Conformal Coatings are thin, protective polymeric coatings that are used to provide environmental protection, without an excessive cost or weight increase. They are typically applied at 25-300µm and 'conform' to the contours of the board allowing for excellent protection and coverage which ultimately extends the life of the PCB. They can be applied by dipping or spraying and can be cured using a variety of methods including UV, heat, and room temperature.



Chemistry Types

Acrylic, Polyurethane, Modified Alkyd, UV, Solvent Based, 100% Solids, Fluoropolymer, 2K

Protection

Humidity, Salt Mist, Surface Insulation, Thermal Shock, Corrosive Gas, IP, Dust and Debris

Case Study 1

AFA - Aromatic free acrylic conformal coating provides the best protection against humidity in our range. This Electrolube coating was selected by an automotive company for use on their electronic processors of power circuits. AFA is flame retardant, approved to UL94 V-0 and free from aromatic solvents, reducing operational hazards. AFA also has a fast touch dry time at room temperature allowing quick throughput in production.

Case Study 2

UVCL - UV cure conformal coating typically applied between 100 - 200µm. This product was selected by the customer with the intention to increase the protection level of the board compared to solvent based conformal coatings while maintaining a low level of material needed to achieve this protection level. UVCL is a solvent free, 100% solids conformal coating. This product combines a rapid UV cure system with a secondary moisture (RTV) cure mechanism for complete cure even in shadow areas.It provides a high level of resistance against many chemicals and solvents, and a good protection and flexibility during thermal cycling and thermal aging tests.

Encapsulation Resins

Encapsulation resins offer enhanced protection and electrical insulation performance in very challenging environments by fully encasing the electronics. They are 100% solid two-part systems that cure on mixing without producing harmful waste products and can be applied by dispensing machines for inline production.

Chemistry Types

Polyurethane, Epoxy, Silicone

Protection

Full Water Immersion, Chemical Resistance, Vibration, Thermal Shock, Electrical Insulation, Impact Resistance, High Temperature, Thermally Conductive, IP

Case Study 1

UR5608 - Selected for its ability to increase the performance of an on-board changer in electric vehicles, this Electrolube resin has excellent vibration resistance and thermally conductivity. UR5608 is also approved to UL94 V-0 meaning that this, coupled with its first-rate flexibility and resistance to thermal shock makes it especially good at withstanding the rigors of automotive testing.

Case Study 2

ER2220 - This thermally conductive epoxy resin, was selected to protect and an enhance EV battery application. ER2220 has high thermal conductivity and significantly improved the heat dissipation in the unit. Additionally, this is a NON CMR resin, according to CLP, which was key to the customer's requirements, enabling them to use the resin at all their European production sites.

Thermal Interface Materials

Thermal Interface Materials work to transfer heat away from electronic components and systems, increasing reliability and operational lifetimes. Applied in key areas between two interfaces where heat transfer is needed, different chemistry types ensure that the best possible thermal transfer is achieved for each application. Accurate dispense is achievable for high volume production ensuring repeatable results.

Chemistry Types

Thermal Interface Materials (TIMs), Phase Change, RTV, Gap Filler, Silicone, Gap Pad, Putty, Non-Silicone, Curing, Non-Curing, 1K and 2K systems

Purpose

Transfer of heat from components to the Heatsink

Case Study 1

HTCPX_LV – One component gap filling thermal paste using a new technology of various metal oxide (ceramic) powders. This Electrolube thermal management solution was selected by an automotive company to enhance their onboard power charging unit systems. This product is based on non-silicone oil which was a requirement of the user in order to avoid any contamination issues with silicone and LMW siloxane migration. HTCPX_LV is a non-curing paste to allow potential re-work and has been developed with increased thermal stability in order to reduce "pump-out effect" exhibited by traditional thermal pastes.

Case Study 2

GF400 – Two component, liquid silicone thermal gap filler. This Electrolube thermal management solution was selected by a company in the Power Industry to improve the management of heat generated by their current converter units. After curing GF400 forms a low modulus elastomer with exceptional thermal performance which helps prevent the "pump-out phenomenon". In addition to this, the ability to shorten the cure time by heat curing greatly improved production throughput.

Find out more

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