Insulation & Thermal Management Materials for Powertrain

Applications – Powertrain Motor

Enclosure

Differential Gear

Cooling Jacket

Stator

Polyimide Varnish for
Coil Coating Material

Expandable Bonding Materials for
Motor Components

Coatings and Adhesives for
Electrical Steel Lamination

Rotor

Enclosure

Gap Pad / Gap Filler / Pottants

Silver Paste

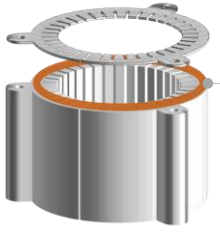
Inverter

Insulation Materials for Motor

With our advanced coating and adhesive materials, electric motor manufacturers can improve efficiency and durability

Applications – Powertrain Motor

Stator



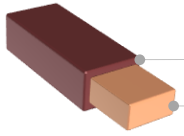
Adhesives
For Steel Lamination

Stator Core

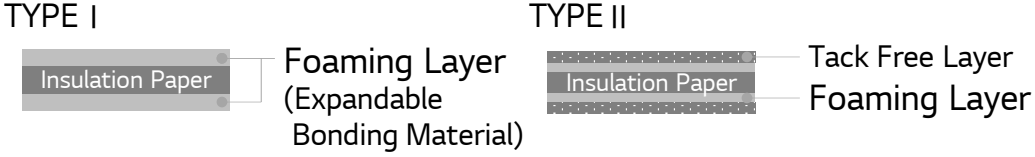
Rotor Core

- Polyimide Varnish for Coil Coating Material
  - Applications : Stator coil for electrical insulation
  - Key Features : High insulation property and high thermal class

Stator Hair Pin Coil



- Expandable Bonding Materials for Motor Components
  - Applications : Insulation paper, Magnet, Motor coil
  - Key Features : Available for wet-less manufacturing process



- Coatings and Adhesives for Electrical Steel Lamination
  - Applications : Stator and rotor core of motor
  - Key Features : Self-bondable, Non-sticky, Strong adhesion force with substrates

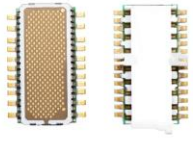
Thermal Management Materials for Inverter

With our thermal management materials, we ensure optimal efficiency & performance of EV electronics under harsh requirements.

Applications – Powertrain Inverter

DC Link Capacitor

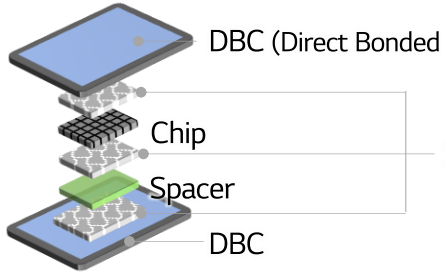
Inverter PCB



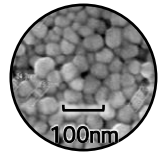
Power Module

- Gap Pad / Gap Filler / Pottant
  - Application : Capacitor, PCB, Power module
  - Material type : Silicone, Epoxy
  - Key Features : Excellent heat dissipation (~8W), Low bond line thickness (>30um)

- Silver Paste
  - Application : Power module die-attach, Substrate attach
  - Material Type : Nano / Micro Paste
  - Key Features : Outstanding reliability, Storage stability (at room temperature)



[Cross-section of Power module]



[SEM Image of Silver Paste]

Adhesives for Battery system

We have a variety of adhesion solutions for EV battery system, support thermal management and safety requirements.

Applications – EV Battery System

[EV Battery]

Potting Resin

[Battery Module]

- Thermally Conductive Adhesive
  - Applications : Adhesion for EV Battery System (Cell to Module, Cell to Pack)
  - Type : Polyurethane-based
  - Key Features
    - High thermal conductivity : Min. 3W/m·K
    - Easy to dispense and curable at room temperature
    - Excellent adhesion with various surfaces
    - Can be hardened to protect the cell from external force
    - Verified reliability and electric insulation
- Potting Resin
  - Applications : Encapsulation of battery System (Cylindrical, Prismatic)
  - Type : Silicon, Urethane Foam
  - Key Features
    - Lightweight with low specific gravity
    - Excellent flame retardancy
    - Low thermal conductivity and good insulation
    - Adjustable curing temperature and working time

Sensor Adhesives

We provide material solutions necessary to assemble ADAS sensor including active alignment, die attach and lens bonding.

Applications – ADAS Sensor module

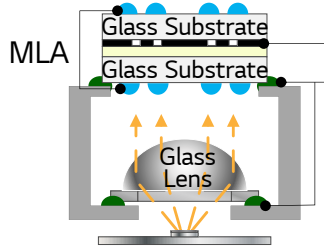
[Camera]

Active Alignment Adhesive
(Lens module + Image sensor)

Die Attach Adhesive
(PCB + Image Sensor)

[LiDAR]

Transmit
(Tx)



Glass Bonding
Holder Mounting

[Cross-section of Tx]

Receive
(Rx)

Active Alignment Adhesive

Die Attach Adhesive

Key Features

Active Alignment Adhesive	Die Attach Adhesive	MLA Glass Bonding & Holder Mounting
- Fast curing at low temperature - Low shrinkage	- Low warpage - High electrical conductivity	- High yellowing resistance

CID(Center Information Display) Glue

Our materials meet customers' requirements for a wide range of CID designs, including larger sizes and various form factors.

Applications – Automotive Display

Cover Glue
(Cover Frame + Display Panel)

Bezel Glue
(Frame + Bezel)

Haptic Component Glue
(Bezel + Haptic Component)

- CID Glue (Cover / Bezel / Haptic Component)
  - Resin Type : Epoxy / Urethane / Silicone
  - Cure Type : Thermal / UV / Room Temperature
  - Key Feature : Adhesion to a wide range of substrates & Reinforcing impact resistance

MLA(Micro Lens Array) Material

We can offer customized UV curable optical material based on our accumulated technology know-hows.

Applications – Lighting & Sensor

Head Lamp

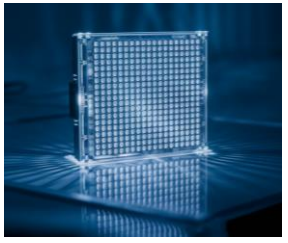
DRL
(Day Running Light)

Indoor Light

LiDAR

Key features

- Excellent Optical Properties
  - Highly transparent over visible range (>90%)
- Superior Reliability
  - Stable optical properties at high temperature, humidity and light exposure
- Processability
  - Non-solvent, Low shrinkage (<2%)



MLA Lens

[Manufacturing Example : Nano Imprinting Process]