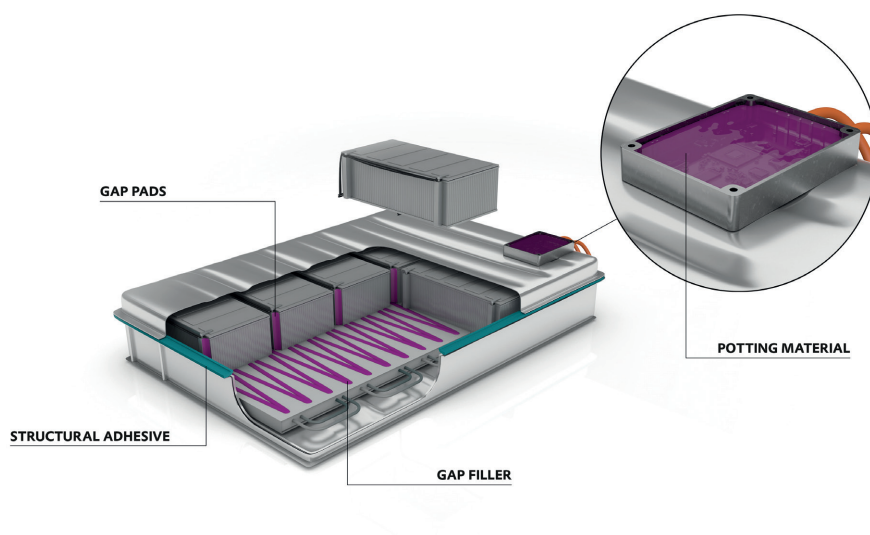


GAP FILLERS, GAP PADS, ADHESIVES AND POTTING MATERIAL FOR BATTERY THERMAL MANAGEMENT



Evonik is a global leader in specialty chemicals. As a worldwide manufacturer of high-quality base polymers and performance & process additives, we offer a broad range of raw materials for the design of various formulations for EV and Electronics industry.

The toolbox comprises silicone and SMP building blocks used in thermal interface materials like EV-gap fillers and pottling materials for control- and power electronics.

CHOOSE THE RIGHT POLYMER MATRIX FOR YOUR NEEDS – NOT VICE VERSA.

A-SILICONES ADDITION CURING

- Industry standard for high performance gap fillers
- Broad property range
- Allows high loading levels for high thermal conductivity
- Resistant to high temperatures, temperature cycling, chemicals, moisture
- No by-products, no shrinkage

C-SILICONES CONDENSATION CURING

- Offers inherently better adhesion in comparison to A-Silicones

SMP SILANE-MODIFIED POYMERS

- Silicone-free technology
- Better adhesion for additional vibration requirements
- Methanol-free SMP technology

Our full portfolio of silicone and SMP raw materials provide high flexibility to build your formulation: The combination of the specialty silicone products allows thermally conductive soft gels with desired processing viscosities, curing speed, hardness and high performance.

EXAMPLES AND HIGHLIGHTS OF THE EVONIK PORTFOLIO:

Low process viscosity at high filler loadings/high thermal conductivity

- Wide range of PDMS polymers (Polymer VS), crosslinkers and chain extenders enable formulations with filler loadings > 90%
- Chain extenders (Modifier 700 series) allow for low processing viscosity, but high flexibility upon curing
- VQM 900 series can address challenging mechanical requirements including vibrational stress

Particle treatment and flame resistance

- Long term experience with compounding of hydroxidic fillers
- Surface treatment of particles for homogenous filler distribution

Ask our experts: Guideline formulations and technical support

- Guideline recipes
- Customized recipes according to your product specifications
- Advisory service during and after development

- Application technology lab with decades of experience
- Evonik is a raw materials supplier and therefore no competitor in the end-market

Evonik is eager to support you with technical expertise and guideline formulations for tailor-made formulations like EV gap fillers, adhesives, potting materials for control and power electronic applications or sealants and protective coatings.

SILICONE PORTFOLIO FOR ADDITION CURING A-SILICONES

PRODUCT	APPLICATION
Polymer VS silicones	Vinyl-terminated silicone portfolio with broad range viscosity starting from 20 mPas
Crosslinkers	Full range with different SiH contents & viscosity
Modifier 7** series	Chain extender; Difunctional SiH structure to reduce crosslinking density & hardness
VQM 9xx series	Vinyl-functional QM resin for high mechanical properties and transparent formulations
TEGOSIL® Heatban	Heat stabilizer to improve formulation heat resistance up to impressive 300 °C
TEGOSIL® FR 1000	Flame retardant co-compound for higher flame retardancy standard

SILANE-MODIFIED POYMERS (SMP) PORTFOLIO

PRODUCT	APPLICATION
Polymer ST series	Silane modified polymer for silicone-free gap filler formulations
TEGOPAC® RD1	Reactive diluent with highest elasticity
TEGOPAC® RD2	Reactive diluent with highest mechanical strength
TEGOPAC® RDS1	Reactive diluent with lowest viscosity

SILICONE PORTFOLIO FOR CONDENSATION CURING C-SILICONES ON DEMAND

Beside silicone components, we offer additives and process aids for other matrices used for EV-batteries like acrylics and epoxy.

Disclaimer

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