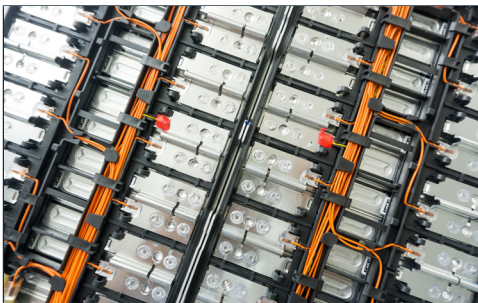


COOLTHERM® MATERIALS

for Energy Storage

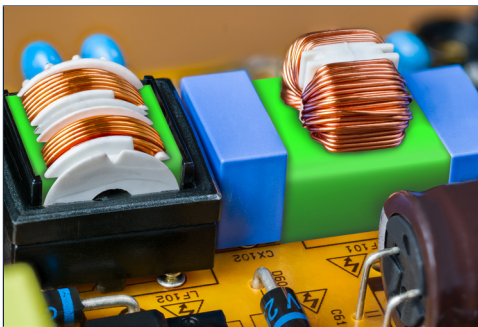
As our world continues to shift towards renewable energy sources, the importance of efficient and reliable energy storage has never been greater. Our cutting-edge thermal management materials, coatings and adhesives are meticulously engineered to optimize the performance, enhance the safety and extend the lifespan of energy storage systems.

Whether you're seeking solutions for a compact residential battery setup or a large-scale commercial energy storage facility, we provide a range of proven, high-quality materials to meet your specific needs. Explore our offerings and discover how we can help you harness the power of energy storage more effectively and efficiently.



Battery Packs

As battery technology evolves towards increased energy density, the ability to manage heat during charge and discharge cycles is crucial for optimizing performance. Our CoolTherm thermal management materials are fully customizable and compatible with cylindrical, pouch and prismatic battery cells.



Inverters & Converters

In order to extend the life of your power electronics like converters and inverters, you need to maintain low thermal resistance and protect components from shock, moisture and debris. CoolTherm® low viscosity, highly thermally conductive potting materials provide a robust thermal interface, as well as protect delicate electrical components.



Battery Enclosures

Battery enclosures are designed to protect the battery from various external factors such as physical damage, temperature variations and moisture. Dielectric coatings and structural adhesives can greatly enhance the performance and safety of these battery enclosures by providing electrical insulation and structural integrity.

Gap Fillers

Get the best performance out of your batteries by filling in surface imperfections with a thermally conductive gap filler designed with energy storage applications in mind. Our gap fillers are available in a range of options, from flexible, low-strength options that ensure serviceability, to products with higher tensile strength and adhesion properties, providing increased strength and structure upon full cure. We also offer low ppm siloxane solutions for sensitive electronic applications.

GAP FILLERS	PRODUCT	CHEMISTRY	THERMAL CONDUCTIVITY (W/m-K)	SHORE HARDNESS (OO)	DENSITY (g/cm ³)
	CoolTherm® SC-3000 LD	Silicone	3.0	75	2.4
	CoolTherm SC-1600	Silicone	3.7	89	3.3
	CoolTherm SC-2000 SLW	Silicone	2.0	65	2.0
	CoolTherm UR-2000	Urethane	2.0	D55	2.6

- Two-Component
- Low Outgas Options
- Room Temperature and Heat Curing
- Electrically Isolative
- 1:1 Mix Ratio
- Protect Against Shock
- Damp Vibration

Adhesives

Formulated for dispensability, either in high flow rate environments in MMD equipment or manually dispensed via cartridge or convenience packaging, our adhesives provide rigidity, structural integrity and a thermal connection where heat is a problem. With our adhesives, you are no longer constrained by mechanical fixtures and can bond a variety of substrates, which can simplify your overall battery pack design.

ADHESIVES	PRODUCT	CHEMISTRY	THERMAL CONDUCTIVITY (W/m-K)	LAP SHEAR STRENGTH (MPa)
	LORD® 852S/25GB	Acrylic	–	18.1 on aluminum
	LORD 5206/55GB	Acrylic	–	19.3 on aluminum
	LORD 7545-A/B	Urethane	–	16.2 on e-coated steel
	CoolTherm TC-2002	Acrylic	1.0	15.8 on aluminum

- Variable Cure Speeds
- Electrically Isolative
- Improve Design Flexibility
- Reduce Complexity
- Room Temperature and Heat Curing

Coatings

Depend on strong, cost-effective coatings to provide insulating barriers for energy storage applications. Our LORD JMC-700K thermally-conductive dielectric coating is used to coat magnets, heat sinks and cooling plates in EVs. Sipiol UV single-component dielectric coating cures in seconds with UV light and is ideal for battery cells.

COATINGS	PRODUCT	CHEMISTRY	THERMAL CONDUCTIVITY (W/m-K)	DIELECTRIC STRENGTH (kV/mm)	TEMPERATURE RANGE (°C)
	LORD JMC-700K	Epoxy	0.4-0.5	100 @ 50 µm	-40 to +180
	Sipiol® UV	Acrylic	0.2-0.5	>90 @ 100 µm	-40 to +120

- Heat and UV Curing
- Electrically Isolative
- High Adhesion and Flexibility

Potting & Encapsulants

Our encapsulants facilitate optimum heat transfer because of their high thermal conductivity and low viscosity. Additionally, potting and encapsulants provide protection from dust, moisture and vibration. Our two-component encapsulants exhibit minimal shrinkage during cure, high dielectric strength and thermal conductivity.

POTTING	PRODUCT	CHEMISTRY	THERMAL CONDUCTIVITY (W/m-K)	VISCOSITY (cP @25°C)	DENSITY (g/cm ³)
	CoolTherm SC-309	Silicone	1.0	3,600	1.7
	CoolTherm SC-320	Silicone	3.2	22,000	3.1
	CoolTherm SC-324	Silicone	4.0	30,000	3.2
	CoolTherm UR-389	Urethane	0.7	14,000	1.5

- Room Temperature and Heat Curing
- Electrically Isolative
- 1:1 Mix Ratio
- Improve Performance
- Protect Electronics
- Reduce Component Stress

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