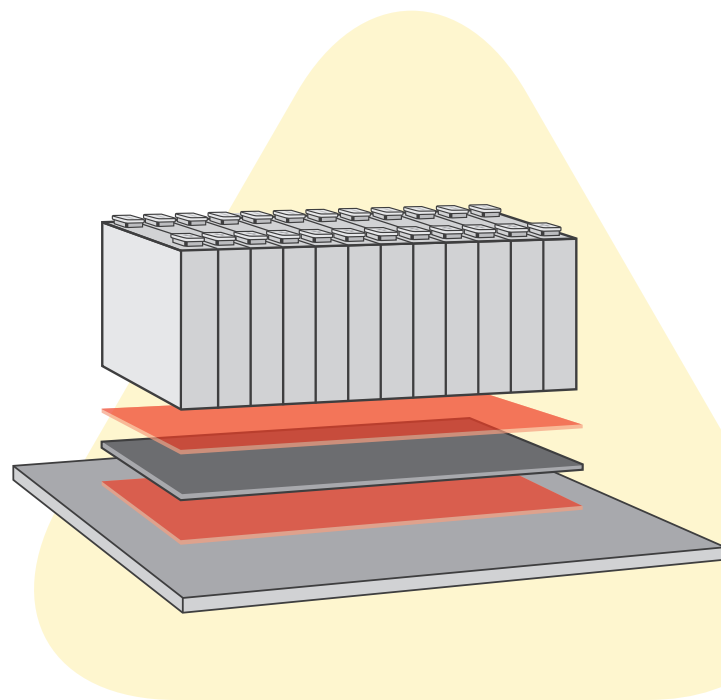


# Thermal Interface Materials (TIMs) | EV Battery Solutions

Thermal interface materials (TIMs) facilitate the transfer of heat between components in EV Battery assemblies.

Avery Dennison offers multiple adhesive solutions – for TIMs bonded to either heat sink or chiller plate materials – to assist with battery cell and battery module cooling. These include:

- High wet out adhesives to lower thermal impedance between TIM and heat source
- Silicone-based, pressure-sensitive adhesive offering excellent adhesion to silicone TIMs
- Acrylic-based pressure-sensitive adhesives offering excellent adhesion to non-silicone based TIMs
- Flame-retardant adhesives, tested in accordance with UL® 94 V-0, are also available



## Thermal Interface Materials (TIMs) Tape Product Portfolio

Application	Product	Adhesive Type	Construction	Thickness without liner (mils)	Thickness without liner (µm)	Core Series™ Portfolio Item (Converter Use)*
<b>Thermal Interface Material Bonding</b>	FT 1135	Flame Tough™ Rubber	Transfer Tape	2.2	54	
	FT 3075	Flame Tough™ Silicone	Double Liner Transfer Tape	2.3	56	
	FT 3014	General Purpose Acrylic	Double Liner Transfer Tape	4.0	98	
	FT 1123		Transfer Tape	3.3	81	•
	HPA™ 1905	High Performance Acrylic	Transfer Tape	4.9	120	•

\* The Core Series™ Portfolio is designed to make it easy for converters to quickly identify a product recommendation for their customers.

## Avery Dennison EV Battery Tape Product Portfolio

The Avery Dennison EV Battery Portfolio includes a wide range of functional bonding and protection tapes, built on multiple pressure-sensitive adhesive technologies. These are engineered to make EV batteries safer, more efficient, and easier to assemble.

The portfolio can help you solve for some of the most common challenges in battery design and construction.



### Reducing flammability

Acrylic- and silicone-based adhesives with Flame Tough™ flame-retardant properties that allow composites and materials to meet UL® 94 V-0 and other flame requirements.



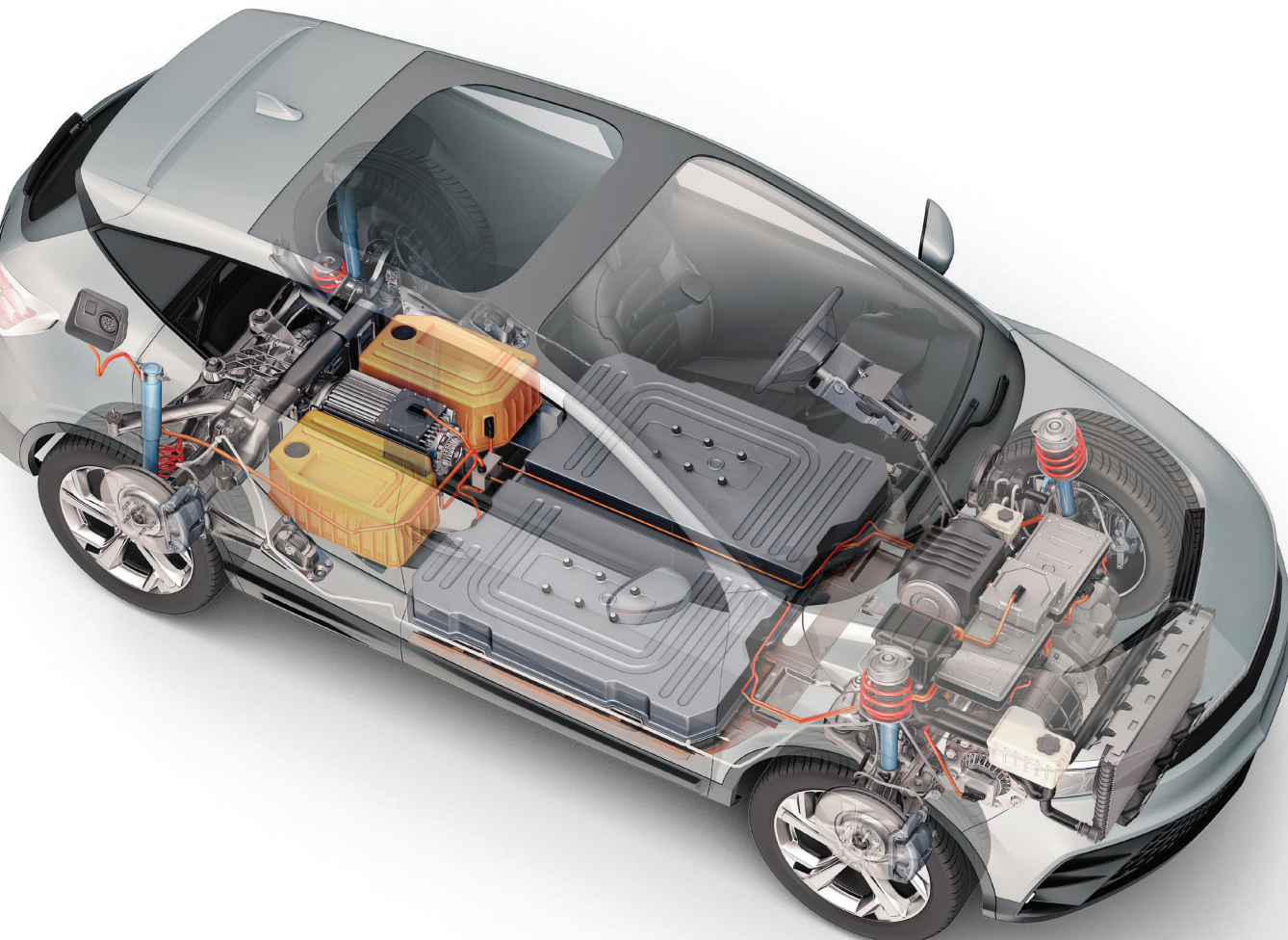
### Boosting dielectric strength

Single- and double-coated tapes that incorporate dielectric films. Our materials and adhesives are tested for breakdown voltage and dielectric strength requirements using GB/T 1408.1-2016 and ASTM D3755 test methods.



### Optimizing design and assembly

Functional tapes that can replace mechanical fastening methods while offering a thinner profile, lighter weight, repositionability and instant bond.



## Avery Dennison EV Battery Tape Product Portfolio

Application	Product	Adhesive Type	Construction	Thickness without liner (mils)	Thickness without liner (µm)	Core Series™ Portfolio Item (Converter Use)*
<b>Cell to Cell Bonding</b>	AFB™ 6111B	Acrylic Foam Bond	Double Coated Acrylic Foam	43.3	1057	
	AFB™ 6180B		Double Coated Acrylic Foam	31.5	769	
	FT 8065	Flame Tough™ Acrylic	Double Coated Flame Tough™ PET	5.6	137	
	FT 1165		Transfer Tape	2.2	54	
	FBA 8960	General Purpose Acrylic	Double Coated PET	4.0	98	•
	FT 3014		Double Liner Transfer Tape	4.0	98	
	FT 1123		Transfer Tape	3.3	81	•
	HPA™ 1905	High Performance Acrylic	Transfer Tape	4.9	120	•
<b>Compression Pad Bonding</b>	FT 8065	Flame Tough™ Acrylic	Double Coated Flame Tough™ PET	5.6	137	
	FT 3065		Double Liner Transfer Tape	2.2	54	
	FT 1165		Transfer Tape	2.2	54	
	FT 8076	Flame Tough™ Differential	Double Coated Flame Tough™ PET	6.0	146	
	FT 8035	Flame Tough™ Rubber	Double Coated Flame Tough™ PET	5.6	137	
	FT 1135		Transfer Tape	2.2	54	
	FT 3075	Flame Tough™ Silicone	Double Liner Transfer Tape	2.3	56	
	FBA 8960	General Purpose Acrylic	Double Coated PET	4.0	98	•
FT 1123		Transfer Tape	3.3	81	•	
<b>Electrical Insulation and Cell Wrapping</b>	FT 0065	Flame Tough™ Acrylic	Single Coated Flame Tough™ PET	3.6	88	
	FT 0965		Single Coated Flame Tough™ PI	3.2	78	
	FT 0975	Flame Tough™ Silicone	Single Coated Flame Tough™ PI	3.3	81	
	FT 0072	General Purpose Acrylic	Single Coated Conformable PU	5.2	127	
	FT 0045		Single Coated PET	1.6	39	
<b>Flexible Busbar Bonding</b>	FT 8065	Flame Tough™ Acrylic	Double Coated Flame Tough™ PET	5.6	137	
	FT 8076	Flame Tough™ Differential	Double Coated Flame Tough™ PET	6.0	146	
	FT 8035	Flame Tough™ Rubber	Double Coated Flame Tough™ PET	5.6	137	
	FBA 8960	General Purpose Acrylic	Double Coated PET	4.0	98	•

\* The Core Series™ Portfolio is designed to make it easy for converters to quickly identify a product recommendation for their customers.

Table continues next page

## Avery Dennison EV Battery Tape Product Portfolio (continued)

Application	Product	Adhesive Type	Construction	Thickness without liner (mils)	Thickness without liner (µm)	Core Series™ Portfolio Item (Converter Use)*
<b>Pack Seal and Gasket Bonding</b>	FT 8065	Flame Tough™ Acrylic	Double Coated Flame Tough™ PET	5.6	137	
	FT 1165		Transfer Tape	2.2	54	
	FBA 8960	General Purpose Acrylic	Double Coated PET	4.0	98	•
	FT 3014		Double Liner Transfer Tape	4.0	98	
	FT 1123		Transfer Tape	3.3	81	•
<b>Heater Film Bonding</b>	FT 1165	Flame Tough™ Acrylic	Transfer Tape	2.2	54	
	FT 1135	Flame Tough™ Rubber	Transfer Tape	2.2	54	
	FT 1123	General Purpose Acrylic	Transfer Tape	3.3	81	•
	HPA™ 1905	High Performance Acrylic	Transfer Tape	4.9	120	•
<b>Thermal Runaway Barrier Bonding and Encapsulation</b>	FT 8065	Flame Tough™ Acrylic	Double Coated Flame Tough™ PET	5.6	137	
	FT 3065		Double Liner Transfer Tape	2.2	54	
	FT 0065		Single Coated Flame Tough™ PET	3.6	88	
	FT 0965		Single Coated Flame Tough™ PI	3.2	78	
	FT 1165		Transfer Tape	2.2	54	
	FT 8035	Flame Tough™ Rubber	Double Coated Flame Tough™ PET	5.6	137	
	FT 1135		Transfer Tape	2.2	54	
	FBA 8960	General Purpose Acrylic	Double Coated PET	4.0	98	•
	FT 3014		Double Liner Transfer Tape	4.0	98	
	FT 8383EZ		General Purpose Rubber	Double Coated PET	3.3	81

\* The Core Series™ Portfolio is designed to make it easy for converters to quickly identify a product recommendation for their customers.

## Go beyond bonding with Avery Dennison: Expansive product selection, plus customization and testing capabilities

The Avery Dennison EV Battery portfolio offers multi-functional solutions that draw from our expansive portfolio of pressure-sensitive tapes and adhesives. We have a long track record in the automotive segment and are relied upon by OEMs and tier suppliers across the industry. Our products meet OEM specifications for a wide range of applications.

Beyond bonding means we also welcome the opportunity to collaborate with automotive OEMs and tier suppliers to develop custom tape solutions. You'll enjoy access to testing facilities and pressure-sensitive adhesive experts who understand the challenges engineers face. We can work together to produce one-of-a-kind products that give you the advantage you seek.

### Collaboration

- Global reach
- New product development for custom solutions for applications
- Business development and specification support for emerging applications
- Application engineering and technical support

### Testing

- ISO 17025 certified laboratory
- Online tool offering easy access to our database of OEM certifications
- Industry-standard testing and custom application testing
- Traditional pressure-sensitive adhesive bulk property testing (peel, tack and shear)
- Environmental conditioning (temperature, humidity, UV, chemical and more)
- Flame performance and dielectric strength testing at the tape and composite level



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