

# Thermal Management Catalog

## P-THERM® Thermal Interface Materials

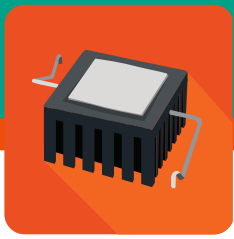
Polymer Science, Inc. offers a complete thermal management product line. Our P-THERM® Thermal Interface Materials are designed to efficiently and effectively aid in the conduction of heat to meet the growing thermal management requirements of today's advanced electronic designs.

### P-THERM® Advantages

- Improved Material Yield
- Consistent High Quality
- Strong Technical Support
- Custom Web Coating
  - Thickness
  - Width
  - Color

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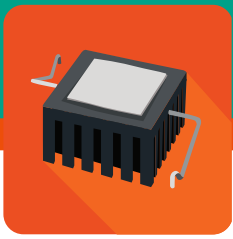


# P-THERM® Gap Fillers - Pad Products

Polymer Science offers a variety of thermally conductive gap filler materials in many formats including silicone, non-silicone, pads, putty and dispensable. P-THERM® Gap Filler materials offer a range of thermal conductivities, hardnesses and thicknesses.

Material Number & Description	Color	Thermal Conductivity	Durometer (Shore 00)	Thickness Range	Flammability Rating
<b>PS-1513</b> hyper-soft silicone based gap filler	Green	3.0 W/m K	20	0.25mm - 5.0 mm	V-0
<b>PS-1514</b> hyper-soft silicone based gap filler	Orange	4.0 W/m K	30	0.25mm - 5.0 mm	V-0*
<b>PS-1515</b> hyper-soft silicone based gap filler	Gold	5.0 W/m K	40	0.25mm - 5.0 mm	V-0*
<b>PS-1541</b> ultra-soft silicone based gap filler	Gray	1.0 W/m K	5	0.25mm - 5.0 mm	V-0
<b>PS-1542</b> ultra-soft silicone based gap filler	Blue	2.0 W/m K	35	0.5mm - 5.0 mm	V-0
<b>PS-1543</b> ultra-soft silicone based gap filler	Green	3.0 W/m K	35	0.25mm - 5.0 mm	V-0
<b>PS-1545</b> ultra-soft silicone based gap filler	Gold	5.0 W/m K	45	0.25mm - 5.0 mm	V-0
<b>PS-1561</b> silicone based gap filler	Gray	1.0 W/m K	30	0.25mm - 5.0 mm	V-0
<b>PS-1562</b> silicone based gap filler	Blue	2.0 W/m K	70	0.5mm - 5.0mm	V-0
<b>PS-1563</b> soft silicone based gap filler	Green	3.0 W/m K	45	0.5mm - 5.0mm	V-0
<b>PS-1581</b> non-silicone gap filler	Tan	1.0 W/m K	45	0.25mm - 2.0 mm	V-0
<b>PS-1582</b> non-silicone gap filler	Tan	2.0 W/m K	80	0.25mm - 2.0 mm	V-0
<b>PS-1911</b> non-silicone calendared putty gap filler	White with Black Specks	2.85 W/m K	20	1.0mm - 5.0mm	V-0*

\*V-0 based on internal test methods

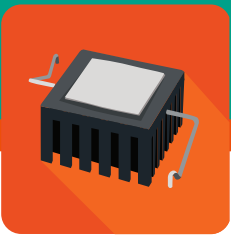


## P-THERM® Gap Fillers - Dispensable Products

Our line of P-THERM® Gap Filler materials have been designed to achieve minimal bond lines and thermal resistance between electrical components to enhance performance and improve the usable life.

Material Number & Description	Color	Thermal Conductivity	Durometer (Shore 00)	Viscosity (as mixed)	Flammability Rating
<b>PS-1913</b> non-silicone putty gap filler	White with Black Specks	2.9 W/m K	20	n/a	V-0*
<b>PS-1931</b> 2-part dispensable silicone gap filler	Gray	1.0 W/m K	5	64000 cP	V-0*
<b>PS-1933</b> 2-part dispensable silicone gap filler	Green	3.0 W/m K	35	105000 cP	V-0*
<b>PS-1983</b> 2-part HV dispensable silicone gap filler	Green	3.0 W/m K	35	230000 cP	V-0*

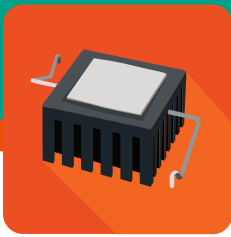
\*V-0 based on internal test methods



## P-THERM® Phase Change

P-THERM® thermally conductive Phase Change Materials perform like thermal grease with the convenience of a thermal pad. At 55°C materials begin to soften and flow, filling in irregular areas of the thermal interface surfaces reducing the natural thermal resistance. They are made of a non-silicone polymer blend. The material is tacky, making it easy to convert and place into the electrical assembly.

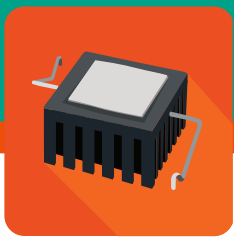
Material Number & Description	Color	Thermal Conductivity	Phase Change Temperature	Thickness Range
<b>PS-1595</b> tacky phase change	Yellow	4.0 W/m K	55 C	0.1mm - 0.5mm
<b>PS-1596</b> tacky phase change on PI carrier	Yellow	4.0 W/m K	55 C	0.1mm - 0.5mm



# P-THERM® Heat Spreaders

Proper heat dissipation is critical in today's compact electronic devices. P-THERM® Heat Spreaders allow for quick dissipation of heat in the x-y direction. Thermally conductive Acrylic PSA secures the thin conductive heat spreader material to the heat source for efficient heat dissipation.

Material Number & Description	Color	Thermal Conductivity	Support Substrate	Thickness	Adhesive Peel Strength (to SUS)
<b>PS-1520</b> aluminum foil with naturally tacky non-silicone coating	White	1.0 W/m K (z-axis)	Aluminum Foil	0.10mm - 0.25mm	40 g/25mm
<b>PS-1688</b> aluminum foil with conductive acrylic PSA	Gray	12 W/m K (x-y axis)	Aluminum Foil	0.045mm	>1000 g/25mm
<b>PS-1689</b> copper foil with soft conductive acrylic PSA with conductive acrylic PSA	Polished Copper	>100 W/m K (x-y axis)	Copper Foil	0.045mm	>1000 g/25mm
<b>PS-1691</b> aluminum heat spreader with conductive acrylic PSA	Silver	50 W/m K (x-y axis)	Polyester	0.06mm	700 g/25mm
<b>PS-1692</b> copper heat spreader with conductive acrylic PSA	Copper	100 W/m K (x-y axis)	Copper Foil	0.06mm	800 g/25mm
<b>PS-1693</b> aluminum heat spreader with conductive acrylic PSA	Silver	100 W/m K (x-y axis)	Polyester	0.15mm	1000 g/25mm
<b>PS-1694</b> polyester electrically insulating vertical heat spreader with conductive acrylic PSA	White	0.8 W/m K (z-axis)	Polyester	0.25mm	1500 g/25mm



## P-THERM® Pressure Sensitive Adhesives

All P-THERM® tapes and adhesives offer reliable adhesion and conductive properties at continuous high temperatures. Transfer adhesives, double and single-faced tapes are available.

Material Number & Description	Color	Thermal Conductivity	Adhesive Peel Strength (to SUS)	Total Thickness	Flammability Rating
<b>PS-0266</b> thermally conductive PSA	White	0.55 W/m K	2270 g/25mm	0.05mm	V-0*
<b>PS-1651</b> thermally conductive PSA coated to aluminum	White	0.55 W/m K	2270 g/25mm	0.15mm	V-0*
<b>PS-1652</b> thermally conductive PSA coated to fiberglass	White	0.55 W/m K	2270 g/25mm	0.25mm	V-0*

\*V-0 based on internal test methods



# P-THERM® Electronic Control Interface Materials -Dielectric Pads

P-THERM® ECIs offer good dielectric and thermally conductive properties without the worry of flow or mess associated with thermal grease. The natural tack of the materials mitigate movement during assembly.

Material Number & Description	Color	Thermal Conductivity	Dielectric Breakdown Strength	Total Thickness	Flammability Rating
<b>PS-1522</b> non-silicone dielectric pad coated onto PET	White	0.4 W/m K	>5000 Vac	0.1mm - 0.25mm	V-0
<b>PS-1523</b> thermally conductive PSA coated to polyimide film	Gold	0.75 W/m K	>5000 Vac	0.1mm-0.25mm	V-0
<b>PS-1524</b> thermally conductive PSA coated to fiberglass	White	0.7 W/m K	>5000 Vac	0.25mm	V-0

## Company Overview

Polymer Science, Inc. was established in 1998 to service the medical device and electronics industries worldwide. Our strengths include high quality products, strong technical support and commitment to our customers. Our diverse team of engineers and technical staff, along with our state of the art equipment provide the capabilities necessary to develop a quality custom adhesive material consistent with application requirements.

## Other Material Offerings



### **P-DERM® Medical Grade Skin Contact Adhesive Materials**

Silicone Gels, Skin-Contact Acrylic, Hydrogel



### **P-SHIELD® EMI Shielding & Grounding Materials for Electronics**

Conductive Fabric, Foams, Foils, and Film Tapes



### **General Purpose Tapes, Films, Fabrics, and Filters**

Release Liners, Films, Transfer Adhesives, Double and Single-Coated PSA's

## Worldwide

### **Polymer Science, Inc.**

Monticello, IN

### **Polymer Science Europe GmbH**

Stuhr, Germany

### **Suzhou Polymer Science Advanced Materials Co., Ltd**

Suzhou, China

### **Polymer Science Co., Ltd**

Gyeonggi-do, South Korea



*Specific tests should be performed by the end user on materials listed in this catalog in order to determine the product suitability for the particular application.*

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**POLYMER**  
**SCIENCE, INC.**