

# THERMAL GAP FILLERS

Tech Etch Tech Therm thermal gap fillers are dependable heat transfer materials that fill air gaps and conduct heat from one heat source to another mating surface or heat sink. When the space existing between two mating surfaces differs due to a variety of conditions, thermal transfer concerns may exist. Tech Etch Tech Therm gap fillers displace the air between these surfaces with highly conductive materials to offer increased cooling.

Tech Therm gap filler solutions are provided in a broad range of thicknesses and formulations and there are adhesive and backing options as well. Thermal gap fillers are a cost-effective solution for some of the most complex and delicate thermal situations in a wide range of applications. Please contact Tech Etch with your thermal application challenges.

## Applications

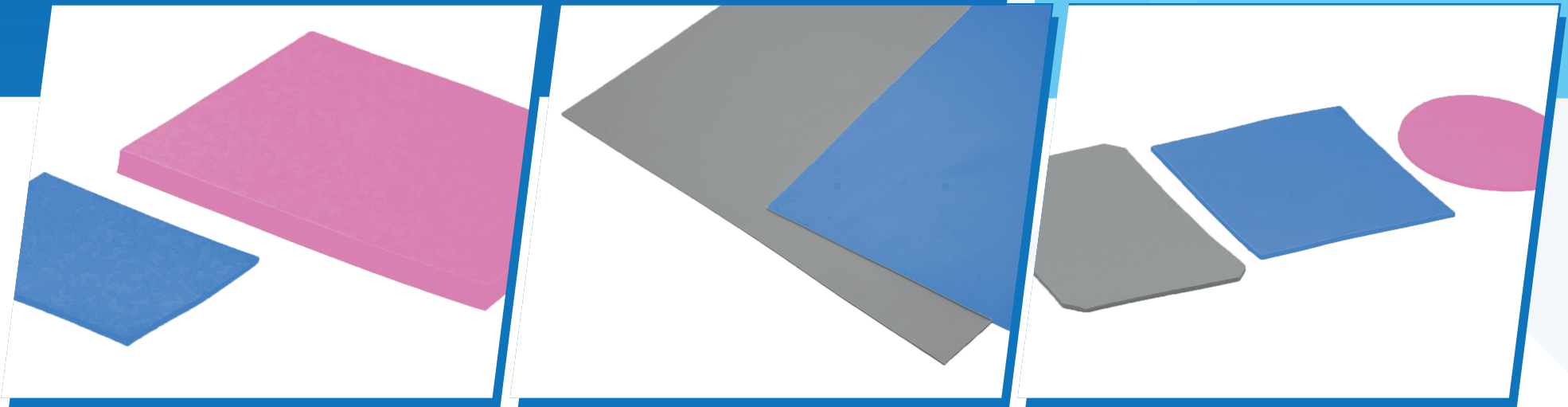
- ❖ Heat Sink Interface
- ❖ Integrated Circuits
- ❖ LED Lighting
- ❖ Micro Processors
- ❖ Mobile Electronics
- ❖ Power Conversions

## Benefits

- ❖ Custom Shapes
- ❖ Increased Reliability
- ❖ Low Cost
- ❖ Self Tacking
- ❖ Short Lead Times
- ❖ UL 94 V-0 Rated
- ❖ Wide Range of Thermal Conductivity

## Materials

- ❖ Aluminum Oxide Filled Silicone



# THERMAL GAP FILLERS

## PROPERTIES

### THERMAL

Tech Etch Product Code		TT010	TT020	TT030	TT030S	TT040	TT050	TT060	TT070	TT080
Thermal Conductivity (W/m-K)	ASTM D 5470	1.00 ± 0.20	2.00 ± 0.20	3.00 ± 0.25	3.00 ± 0.25	4.00 ± 0.25	5.00 ± 0.50	6.00 ± 0.50	7.00 ± 0.50	8.00 ± 0.50
Thermal Resistance (°C•in <sup>2</sup> /W@20PSI/1mm) *(°C•in <sup>2</sup> /W@20PSI/2mm)	ASTM D 5470	≤ 2.0	≤ 1.20	≤ 0.90	≤ 0.70	≤ 0.75	≤ 0.70	≤ 0.50	≤ 0.30	≤ 0.20

### PHYSICAL

Color	Visual	Gray White	Light Blue	Sky Blue	Sky Blue	Purple	White	Gray	Gray	Gray
Thickness (in, (mm))	ASTM D 374	0.008-0.709 (0.2-18.0)	0.012-0.709 (0.3-18.0)	0.012-0.709 (0.3-18.0)	0.039-0.157 (1.0-4.0)	0.020-0.157 (0.5-4.0)	0.020-0.118 (0.5-3.0)	0.020-0.118 (0.5-3.0)	0.020-0.118 (0.5-3.0)	0.020-0.118 (0.5-3.0)
Density (lb/in <sup>3</sup> , (g/cc))	ASTM D 792	0.085 ± 0.018 (2.35 ± 0.5)	0.101 ± 0.018 (2.80 ± 0.5)	0.109 ± 0.018 (3.01 ± 0.5)	0.109 ± 0.018 (3.01 ± 0.5)	0.113 ± 0.018 (3.12 ± 0.5)	0.116 ± 0.018 (3.20 ± 0.5)	0.116 ± 0.018 (3.20 ± 0.5)	0.117 ± 0.018 (3.25 ± 0.5)	0.123 ± 0.011 (3.40 ± 0.3)
Hardness (Shore 00)	ASTM D 2240	8-80 ± 10	10-75 ± 10	15-75 ± 10	20 ± 10	50-75 ± 10	40-70 ± 10	50-70 ± 10	50 ± 10	50 ± 10
Compression Ratio (%@50PSI)	ASTM D 695	≥ 25	≥ 25	≥ 20	≥ 40	≥ 15	≥ 15	≥ 15	≥ 15	≥ 20
Tensile Strength (MPa)	ASTM D 412	≥ 0.30	≥ 0.25	≥ 0.15	≥ 0.15	≥ 0.15	≥ 0.15	≥ 0.15	≥ 0.10	≥ 0.12
Tear Strength (N/mm)	ASTM D 624	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	≥ 0.35
Elongation (%)	ASTM D 412	≥ 80	≥ 70	≥ 60	≥ 60	≥ 60	≥ 60	≥ 50	≥ 45	≥ 60
Operating Temp (°F (°C))		-58 to 356 (-50 to 180)	-58 to 356 (-50 to 180)	-58 to 356 (-50 to 180)	-58 to 356 (-50 to 180)	-58 to 356 (-50 to 180)	-58 to 302 (-50 to 150)	-58 to 302 (-50 to 150)	-58 to 302 (-50 to 150)	-40 to 266 (-40 to 130)
Shelf Life (Months)	N/A	24								
Sheet Size	inch	11.81 x 15.75	11.81 x 15.75	11.81 x 15.75	11.81 x 15.75	11.81 x 15.75	11.81 x 15.75	7.87 x 15.75	7.87 x 15.75	7.87 x 15.75
	mm	300 x 400	300 x 400	300 x 400	300 x 400	300 x 400	300 x 400	200 x 400	200 x 400	200 x 400

### ELECTRICAL

Volume Resistivity (ohm-cm)	ASTM D 257	≥ 10 <sup>10</sup>	≥ 10 <sup>10</sup>	≥ 10 <sup>10</sup>	≥ 10 <sup>10</sup>	≥ 10 <sup>10</sup>	≥ 10 <sup>10</sup>	≥ 10 <sup>10</sup>	≥ 10 <sup>10</sup>	≥ 10 <sup>10</sup>
Breakdown Voltage (KV/mm)	ASTM D 149	≥ 8	≥ 8	≥ 8	≥ 8	≥ 8	≥ 7	≥ 3	≥ 3	≥ 3
Dielectric Constant (@1MHz)	ASTM D 150	≥ 2.0	≥ 2.0	≥ 2.0	≥ 2.0	≥ 2.0	≥ 5.0	≥ 5.0	≥ 5.0	≥ 5.0
Dielectric Loss (@ 1MHz)	ASTM D 150	≤ 0.100	≤ 0.100	≤ 0.100	≤ 0.100	≤ 0.100	≤ 0.100	≤ 0.100	≤ 0.100	≤ 0.100
Flammability Rating (UL)	UL94	V-0, 5V	V-0, 5V	V-0, 5V	V-0, 5V	V-0, 5V	V-0	V-0	V-0	V-0



<https://techetch.com/solutions/emi-rfi-shielding/>



ISO 9001:2015  
AS9100D  
REGISTERED

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