

THERMACOOL®

# ThermaCool® Thermal Interface Products



SAINT-GOBAIN

# Gap Fillers

**Saint-Gobain®** has launched a proprietary line of highly compliant gap fillers intended to meet the needs of smaller, high performance electronic circuitry. These new gap fillers are manufactured by **Saint-Gobain** Performance Plastics Corporation, Tape Solutions business, and are intended to provide an outstanding heat transfer interface across a range of component heights with minimal compression force.

- Available in a range of thicknesses from 20 mils to 280 mils (0.5 mm to 7 mm)
- Intrinsically tacky surfaces for excellent self-adhesion
- Available with various surfaces (no-stick, fabric) for specific application needs and a range of compliance and thermal conductivities to fit specific applications
- UL94 V-0 flame retardancy & RTI 150°C rating
- Available in Large 24" × 24" sheet sizes for improved die-cutting yield with custom sizes available

## Product Features

### TC2006

- Soft and compliant gap filler with good thermal performance
- Excellent balance between thermal conductivity (1.6 W/mK) and compression force

### TC2007G

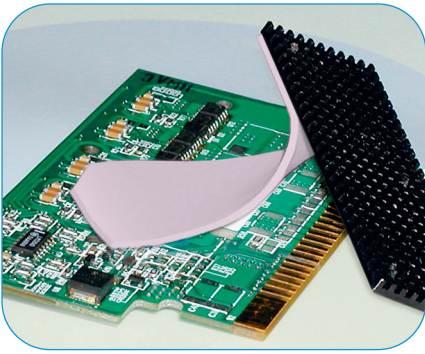
- Economical, highly compliant gap filler useful for many applications
- Thermal conductivity = 1.6 W/mK
- Fabric and high cohesion provides good die cut workability & ability to take higher load

### TC3006S

- Outstanding compression performance allows for 45–50% compression without exceeding 15 psi on components
- Best in class blend of thermal conductivity (1.4 W/mK) and compression pressure
- Useful when extreme differences in component heights are found, requiring large compression ratios with very low component pressures

### TC3008

- High performance gap filler with excellent thermal conductivity (3 W/mK) while maintaining exceptional compression latitude
- Provides best in class thermal performance where large component height differences are found



## TC2006

### Features

- Highly compliant gap filler with excellent balance between thermal conductivity and softness
- Intrinsically tacky material, no adhesive required
- RoHS compliant; UL94 V-0 flame retardancy & RTI 150°C rating
- Multiple surfaces available (tacky, non-tacky, fabric reinforced)

### Benefits

- Soft and compliant gap filler with good thermal performance
- Suitable to use in sensitive applications such as telecom and aerospace
- Able to tailor product to specific applications

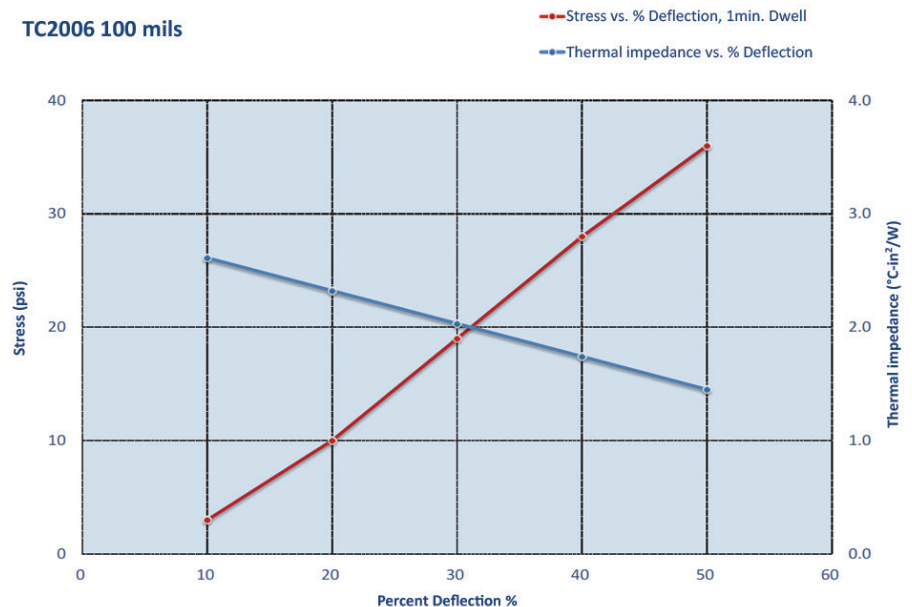
Typical Properties of TC2006		
Property	TC2006	Test Method
Color	Light Purple	Visual
Total Thickness, nominal (mm) (1)	0.5-7.0	ASTM D374
Density (g/cc)	1.94	ASTM D792
Hardness (Shore OO)	40	ASTM D2240
Continuous Use Temp (°F) / (°C)	-65°F to 392°F / -54°C to 200°C	—
100mil, 50% Deflection Force (psi)	30	—
<b>Electrical</b>		
Voltage Breakdown (VAC)	> 5000	ASTM D149
Volume resistivity (ohm-cm)	$1.8 \times 10^{10}$	ASTM D257
Flame Rating	V-0	UL94
<b>Thermal</b>		
Thermal Impedance (°C-in <sup>2</sup> /W) 100mil (2)	2.03	ASTM D5470
Thermal conductivity (W/m-K)	1.6	ASTM D5470

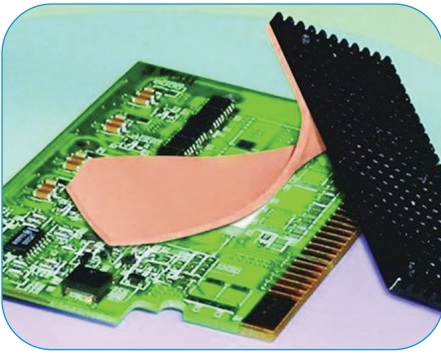
1). 0.5 mm increments.

2). Deflection 30% strain

\*All properties are typical values and should not be used for writing specifications. Data reflects non-supported option.

TC2006 100 mils





## TC2007G

### Features

- Economical gap filler suitable for a wide range of critical applications
- Intrinsically tacky material, no adhesive required
- RoHS compliant; UL94 V-0 flame retardancy & RTI 150°C rating
- Multiple surfaces available (tacky, non-tacky, fabric reinforced)

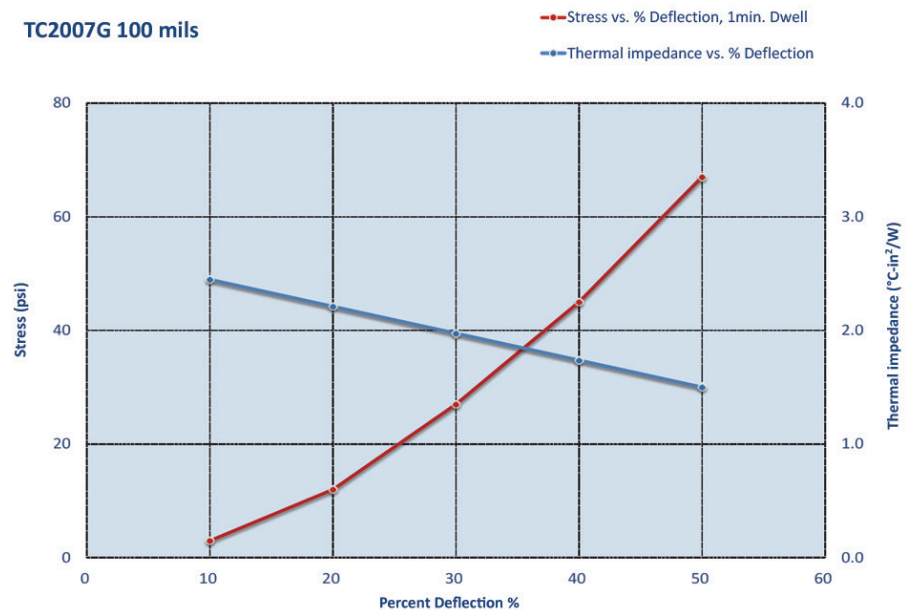
### Benefits

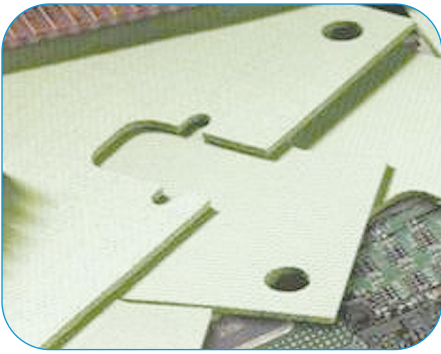
- Cost effective gap filler solution for many applications
- Improved die cutting and part stability while handling
- High cohesion for higher load applications

Typical Properties of TC2007G		
Property	TC2007G	Test Method
Color	Light Orange	Visual
Total Thickness, nominal (mm) (1)	0.5-7.0	ASTM D374
Density (g/cc)	2.0	ASTM D792
Hardness (Shore OO)	50	ASTM D2240
Continuous Use Temp (°F) / (°C)	-65°F to 392°F / -54°C to 200°C	—
100mil, 50% Deflection Force (psi)	67	—
<b>Electrical</b>		
Voltage Breakdown (VAC)	> 5000	ASTM D149
Volume resistivity (ohm-cm)	$1.02 \times 10^{10}$	ASTM D257
Flame Rating	V-0	UL94
<b>Thermal</b>		
Thermal Impedance (°C-in <sup>2</sup> /W) 100mil (2)	1.97	ASTM D5470
Thermal conductivity (W/m-K)	1.6	ASTM D5470

1). 0.5 mm increments.      2). Deflection 30% strain  
 \*All properties are typical values and should not be used for writing specifications.  
 Data reflects non-supported option.

TC2007G 100 mils





## TC3006S

### Features

- Extremely soft gap filler with best in class compliance
- Intrinsically tacky material, no adhesive required
- RoHS compliant; UL94 V-0 flame retardancy & RTI 150°C rating
- Multiple surfaces available (tacky, non-tacky, fabric reinforced)

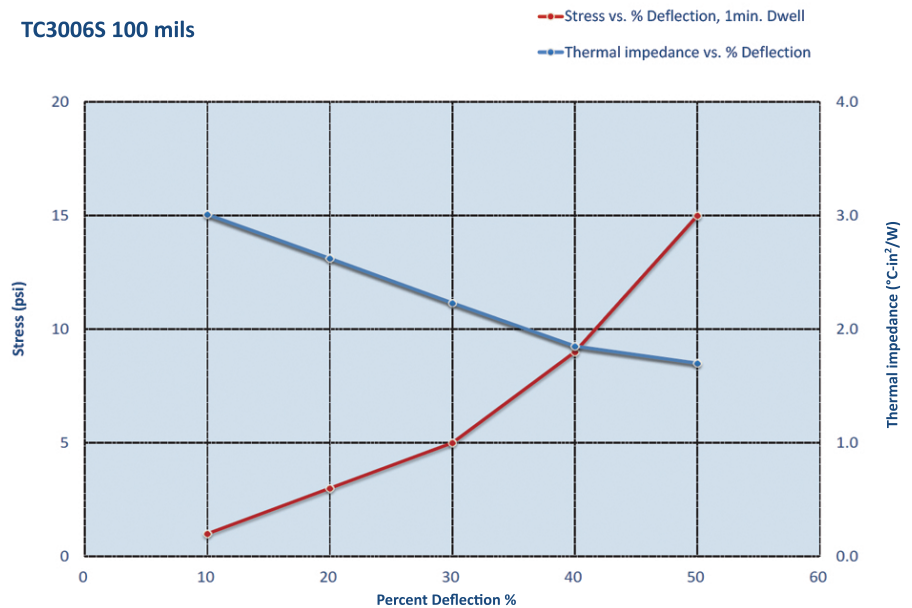
### Benefits

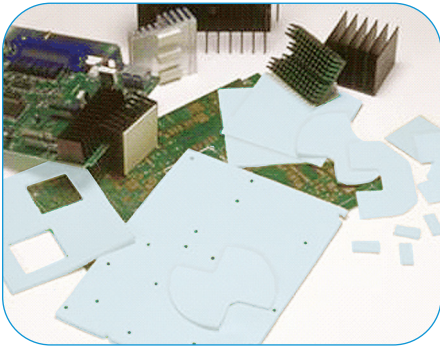
- Able to compress to over 45% with 15 psi compression force
- Suitable to use in sensitive applications such as telecom and aerospace
- Able to tailor product to specific applications

Typical Properties of TC3006S		
Property	TC3006S	Test Method
Color	Light Green	Visual
Total Thickness, nominal (mm) (1)	0.5-7.0	ASTM D374
Density (g/cc)	1.88	ASTM D792
Hardness (Shore OO)	30	ASTM D2240
Continuous Use Temp (°F) / (°C)	-65°F to 392°F / -54°C to 200°C	—
100mil, 50% Deflection Force (psi)	15	—
<b>Electrical</b>		
Voltage Breakdown (VAC)	> 5000	ASTM D149
Volume resistivity (ohm-cm)	$1.5 \times 10^{10}$	ASTM D257
Flame Rating	V-0	UL94
<b>Thermal</b>		
Thermal Impedance (°C-in <sup>2</sup> /W) 100mil (2)	2.23	ASTM D5470
Thermal conductivity (W/m-K)	1.4	ASTM D5470

1). 0.5 mm increments.      2). Deflection 30% strain  
 \*All properties are typical values and should not be used for writing specifications.  
 Data reflects non-supported option.

TC3006S 100 mils





## TC3008

### Features

- High performance gap filler with 3W/m-K conductivity and excellent compliance
- Intrinsically tacky material, no adhesive required
- RoHS compliant; UL94 V-0 flame retardancy & RTI 150°C rating
- Multiple surfaces available (tacky, non-tacky, fabric reinforced)

### Benefits

- Useful for higher conductivity applications where compression is more than 10%
- Suitable to use in sensitive applications such as telecom and aerospace
- Able to tailor product to specific applications

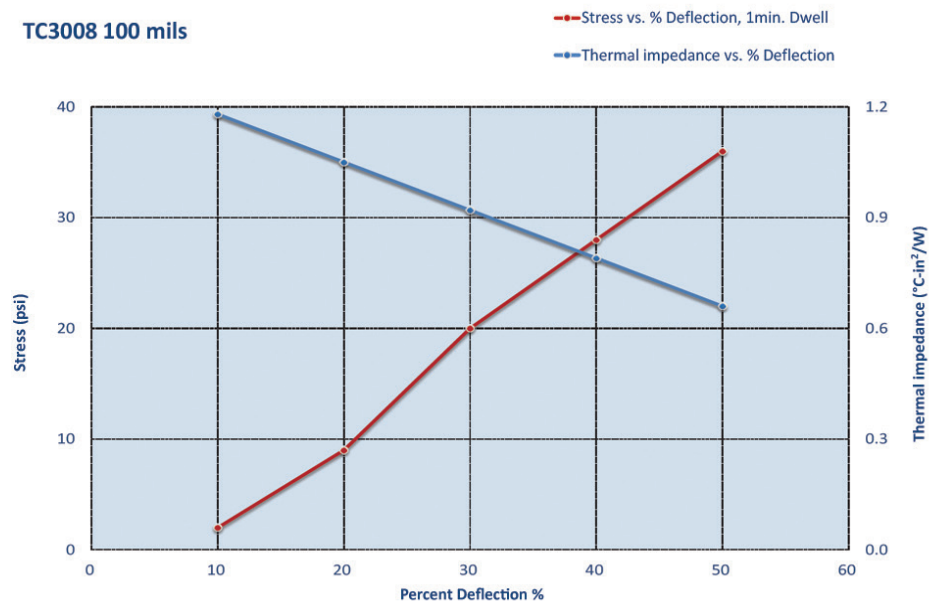
Typical Properties of TC3008		
Property	TC3008	Test Method
Color	Light Blue	Visual
Total Thickness, nominal (mm) (1)	0.5-7.0	ASTM D374
Density (g/cc)	2.85	ASTM D792
Hardness (Shore 00)	65	ASTM D2240
Continuous Use Temp (°F) / (°C)	-65°F to 392°F / -54°C to 200°C	—
100mil, 50% Deflection Force (psi)	36	—
<b>Electrical</b>		
Voltage Breakdown (VAC)	> 5000	ASTM D149
Volume resistivity (ohm-cm)	$3.5 \times 10^{11}$	ASTM D257
Flame Rating	V-0	UL94
<b>Thermal</b>		
Thermal Impedance (°C-in <sup>2</sup> /W) 100mil (2)	0.92	ASTM D5470
Thermal conductivity (W/m-K)	3.0	ASTM D5470

1). 0.5 mm increments.

2). Deflection 30% strain

\*All properties are typical values and should not be used for writing specifications. Data reflects non-supported option.

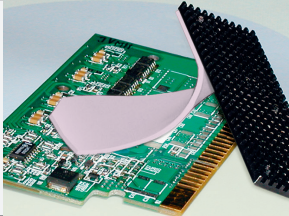
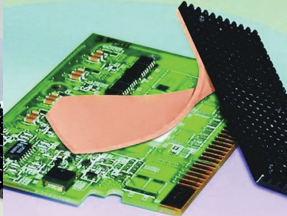
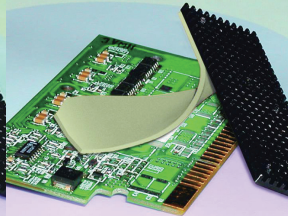
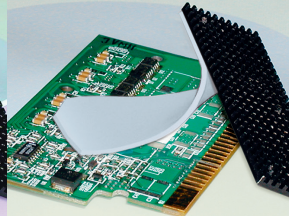
TC3008 100 mils



# Gap Filler Selection Guide

## ThermaCool TC Series Soft Ceramic-Filled Silicone Elastomers

**Saint-Gobain ThermaCool** TC Series is an economical, soft ceramic-filled silicone elastomer typically supplied with a PET release liner on both sides. The product is intrinsically tacky and has excellent compression performance over a wide range of stack up tolerances with minimal force applied to component parts. TC Series can be supplied with a fabric or film on one side for additional support during handling and assembly. With UL 94 V-0 & RTI 150°C certification, the product can be used in critical applications without flame concern.

	TC2006	TC2007G	TC3006S	TC3008
Color				
Product Property/ Specialty	<ul style="list-style-type: none"> <li>• General Type</li> <li>• Balanced softness &amp; performance</li> <li>• Good compressibility</li> <li>• Sticky surface</li> </ul>	<ul style="list-style-type: none"> <li>• High cohesion</li> <li>• Moderate compressibility</li> <li>• Sticky surface</li> </ul>	<ul style="list-style-type: none"> <li>• Extremely soft</li> <li>• High compressibility</li> <li>• Sticky surface</li> </ul>	<ul style="list-style-type: none"> <li>• High thermal conductivity</li> <li>• Moderate compressibility</li> <li>• Sticky surface</li> </ul>
Thermal Conductivity*	1.6 W/mK	1.6 W/mK	1.4 W/mK	3.0 W/mK
100mil, 50% Deflection Force (psi)	30	67	15	36
Structure	PET release liner on both sides (Fabric supports 0.5mmT product as reinforcement)			
Thickness	0.5 - 7.0mm (Contact us for any customization request)			
Dimension	305mm × 305mm / 305mm × 610mm 610mm × 610mm (Contact us for any customization request)			
Certification	UL 94 V-0 Flame Resistance; RTI 150°C Rating; RoHS Certification			
Application	<ul style="list-style-type: none"> <li>• LCD display</li> <li>• Power transformer</li> <li>• Power supplier</li> <li>• LED lighting</li> <li>• Automobile electronics</li> <li>• Electrical inverter</li> </ul>		<ul style="list-style-type: none"> <li>• Notebook, Desktop, IPC</li> <li>• Telecommunication</li> <li>• Server storage</li> <li>• Memory module</li> <li>• Heat pipe thermal solution</li> <li>• Base station</li> </ul>	

\*Test method: ASTM D5470

# Other ThermaCool Products

## Thermally Conductive Gap Fillers

- **R10404**: Thermally conductive closed cell sponge for gasketing, heat transfer and cushioning.
- **TC100**: Thermally conductive solid silicone rubber for filling air gaps under high load force.
- **TC100U**: Similar to TC100 but supplied in uncured configuration to fill gaps and bond dissimilar materials.

## Thermally Conductive Tapes

- **KAPTON® Tapes**: Thermally conductive and electrically isolating.
  - **K271**: One-side adhesive coated **Kapton** MT tape.
- Thermally Conductive Transfer Adhesives
  - **TR3**: Thermally conductive acrylic adhesives.

## Thermally Conductive Coated Fabrics

- **TF1870 Series**: Similar to TF400 Series but improved thermal performance.
- **TF1860 Series**: Lowest cost thermally conductive silicone coated fabric.
  - All products can be supplied acrylic adhesive on one side.

**IMPORTANT:** It is the user's responsibility to ensure the suitability and safety of Saint-Gobain products for all intended uses and that the materials to be used comply with all applicable regulatory requirements. Saint-Gobain assumes no responsibility for any product failures that occur due to your actions or inactions, including your use, design, fabrication or application of the products into which the materials are incorporated.

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