T-flex™ 500 Series Thermal Gap Filler

Conformable gap filler

T-flex™ 500 is a highly conformable gap filler designed to provide excellent thermal performance while remaining cost effective. This soft interface pad conforms well with minimal pressure, resulting in little or no stress on the mating parts.

T-flex™ 500’s unique silicone formulation has extremely low silicone extractables compared to other silicone interface materials and also meets NASA outgassing requirements.

T-flex™ 500 is naturally tacky, requiring no adhesive coating to inhibit thermal performance. T-flex™ 500 is electrically insulating, stable from -45°C to 200°C and meets UL 94V0 rating.

Features and Benefits:
- Highly conformable and cost effective
- Low thermal resistance at low pressures
- Designed to have very low silicone extractables
- Meets NASA Outgassing requirements
- Available in thicknesses from 0.020” (0.5mm) to 0.200” (5.0mm)
- Naturally tacky needing no further adhesive coating
- Low silicone extractibles

Applications:
- Cooling components to the chassis or frame
- High speed mass storage drives
- RDRAM memory modules
- Heat pipe thermal solutions
- Automotive engine control units
- Telecommunication hardware

For sales information:
In Asia, please telephone +886-3-3129292
In Europe, please telephone +44-1342-315044
In the USA please telephone +1-1-800-246-9050

or visit: www.lairdtech.com
## T-flex™ 500 Series Thermal Gap Filler

<table>
<thead>
<tr>
<th>T-flex™ 500</th>
<th>T-flex™ 540</th>
<th>T-flex™ 560</th>
<th>T-flex™ 580</th>
<th>T-flex™ 5100</th>
<th>Test Method</th>
</tr>
</thead>
<tbody>
<tr>
<td>Construction &amp; Composition</td>
<td>Reinforced silicone elastomer</td>
<td>Silicone elastomer</td>
<td>Silicone elastomer</td>
<td>Silicone elastomer</td>
<td>Silicone elastomer</td>
</tr>
<tr>
<td>Color</td>
<td>Blue</td>
<td>Blue</td>
<td>Blue</td>
<td>Blue</td>
<td>Blue</td>
</tr>
<tr>
<td>Thickness</td>
<td>0.020&quot; (0.51mm)</td>
<td>0.040&quot; (1.02mm)</td>
<td>0.060&quot; (1.52mm)</td>
<td>0.080&quot; (2.03mm)</td>
<td>0.100&quot; (2.54mm)</td>
</tr>
<tr>
<td>Thickness Tolerance</td>
<td>± 0.002&quot; (± 0.05mm)</td>
<td>± 0.004&quot; (± 0.10mm)</td>
<td>± 0.006&quot; (± 0.15mm)</td>
<td>± 0.008&quot; (± 0.20mm)</td>
<td>± 0.010&quot; (± 0.25mm)</td>
</tr>
<tr>
<td>Density</td>
<td>3.0 g/cc</td>
<td>3.0 g/cc</td>
<td>3.0 g/cc</td>
<td>3.0 g/cc</td>
<td>3.0 g/cc</td>
</tr>
<tr>
<td>Hardness</td>
<td>70 Shore OO</td>
<td>40 Shore OO</td>
<td>40 Shore OO</td>
<td>40 Shore OO</td>
<td>40 Shore OO</td>
</tr>
<tr>
<td>Tensile Strength</td>
<td>N/A</td>
<td>66 psi</td>
<td>66 psi</td>
<td>46 psi</td>
<td>46 psi</td>
</tr>
<tr>
<td>% Elongation</td>
<td>N/A</td>
<td>56.6%</td>
<td>56.6%</td>
<td>97.5%</td>
<td>97.5%</td>
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<tr>
<td>Outgassing TML</td>
<td>0.29%</td>
<td>0.29%</td>
<td>0.29%</td>
<td>0.29%</td>
<td>0.29%</td>
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<tr>
<td>Outgassing CVCM</td>
<td>0.04%</td>
<td>0.04%</td>
<td>0.04%</td>
<td>0.04%</td>
<td>0.04%</td>
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<tr>
<td>UL Flammability Rating</td>
<td>94 VO</td>
<td>94 VO</td>
<td>94 VO</td>
<td>94 VO</td>
<td>E180840</td>
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<tr>
<td>Temperature Range</td>
<td>-45°C to 200°C</td>
<td>-45°C to 200°C</td>
<td>-45°C to 200°C</td>
<td>-45°C to 200°C</td>
<td>-45°C to 200°C</td>
</tr>
<tr>
<td>Thermal Conductivity</td>
<td>2.8 W/mK</td>
<td>2.8 W/mK</td>
<td>2.8 W/mK</td>
<td>2.8 W/mK</td>
<td>2.8 W/mK</td>
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<tr>
<td>Thermal Impedance</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>@ 10 psi @ 60Hz</td>
<td>0.40 °C-in/W</td>
<td>0.50 °C-in/W</td>
<td>0.63 °C-in/W</td>
<td>0.77 °C-in/W</td>
<td>0.91 °C-in/W</td>
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<tr>
<td>@ 60Hz</td>
<td>2.55 °C-cm/W</td>
<td>3.23 °C-cm/W</td>
<td>4.07 °C-cm/W</td>
<td>4.96 °C-cm/W</td>
<td>5.87 °C-cm/W</td>
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<tr>
<td>Thermal Expansion</td>
<td>37.4 ppm/°C</td>
<td>37.4 ppm/°C</td>
<td>37.4 ppm/°C</td>
<td>37.4 ppm/°C</td>
<td>37.4 ppm/°C</td>
</tr>
<tr>
<td>@ 70 to 130 °C</td>
<td>70 to 130 °C</td>
<td>70 to 130 °C</td>
<td>70 to 130 °C</td>
<td>70 to 130 °C</td>
<td>70 to 130 °C</td>
</tr>
<tr>
<td>Breakdown Voltage</td>
<td>7400 Volts AC</td>
<td>9200 Volts AC</td>
<td>&gt;10,000 Volts AC</td>
<td>&gt;10,000 Volts AC</td>
<td>&gt;10,000 Volts AC</td>
</tr>
<tr>
<td>Volume Resistivity</td>
<td>9.6 x 10⁶ ohm-cm</td>
<td>9.6 x 10⁶ ohm-cm</td>
<td>9.6 x 10⁶ ohm-cm</td>
<td>9.6 x 10⁶ ohm-cm</td>
<td>9.6 x 10⁶ ohm-cm</td>
</tr>
<tr>
<td>Dielectric Constant</td>
<td>13.61</td>
<td>13.61</td>
<td>13.61</td>
<td>13.61</td>
<td>13.61</td>
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<tr>
<td>@ 1MHz</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>ASTM D5470 (modified)</td>
</tr>
</tbody>
</table>

### Standard Thicknesses:

- 0.020" (0.51mm)
- 0.030" (0.76mm)
- 0.040" (1.02mm)
- 0.050" (1.27mm)
- 0.060" (1.52mm)
- 0.070" (1.78mm)
- 0.080" (2.03mm)
- 0.090" (2.29mm)
- 0.100" (2.54mm)
- 0.110" (2.79mm)
- 0.120" (3.05mm)
- 0.130" (3.30mm)
- 0.140" (3.56mm)
- 0.150" (3.81mm)
- 0.160" (4.06mm)
- 0.170" (4.32mm)
- 0.180" (4.57mm)
- 0.190" (4.83mm)
- 0.200" (5.08mm)

Consult the factory for alternate thicknesses.

### Standard Sheet Sizes:

- 9” x 9” (229mm x 229mm) T-flex™ 500 may be die cut into individual shapes. Pressure sensitive adhesive is not applicable for T-flex™ products.

### Tacky One Side Only:

T-flex™ 500 is naturally tacky on both sides. T-flex™ 500 can be provided tacky on one side only. This is indicated by the suffix “DC1”. This option offers good separation properties allowing the tacky side to stick to the heatsink/chasis/coldplate/etc. and the other “dry” side to release easily from the component(s).

### Reinforcement:

- 0.020" (0.51mm) and 0.030" (0.762mm) are fiberglass reinforced.

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