The excellent surface wetting results in low interfacial resistance.

- **T670** is offered with a very high bulk thermal conductivity of 3 W/m-K. Product offers low impedance as it will achieve a thin bondline of about 0.001 in.

- **T660** contains solder fillers for extremely low thermal impedance at thinner bondline thicknesses (down to about 0.001 in.).

- **T650** is a general duty grease for typical applications.

**Features/Benefits**

- Silicone based materials conduct heat between a hot component and a heat sink or enclosure

- Fills interface variable tolerances in electronics assemblies and heat sink applications

- Dispensable, highly conformable materials require no cure cycle, mixing or refrigeration

- Thermally stable and require virtually no compressive force to deform under typical assembly pressures

- Supports high power applications requiring material with minimum bond line thickness and high conductivity

- Ideal for rework and field repair situations

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**Description**

Chomerics thermal greases offer a range of performance covering the simplest to the most demanding thermal requirements. These materials are screened, stenciled or dispensed and require virtually no compressive force to conform under typical assembly pressures.

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**Thermal Greases**

<table>
<thead>
<tr>
<th>Physical</th>
<th>T650</th>
<th>T660</th>
<th>T670</th>
<th>Test Method</th>
</tr>
</thead>
<tbody>
<tr>
<td>Color</td>
<td>Pale Blue</td>
<td>Light Gray</td>
<td>White</td>
<td>Visual</td>
</tr>
<tr>
<td>Specific Gravity</td>
<td>2.3</td>
<td>2.4</td>
<td>2.6</td>
<td>ASTM D792</td>
</tr>
<tr>
<td>Viscosity, cps</td>
<td>190,000</td>
<td>170,000</td>
<td>350,000</td>
<td>NA</td>
</tr>
<tr>
<td>Operating Temperature Range, °F (°C)</td>
<td>-58 to 392 (-50 to +200)</td>
<td>-58 to 392 (-50 to +200)</td>
<td>-58 to 392 (-50 to +200)</td>
<td>NA</td>
</tr>
<tr>
<td>Phase Transition Temperature, °F (°C)</td>
<td>N/A</td>
<td>144 (62)</td>
<td>N/A</td>
<td>ASTM D3418</td>
</tr>
<tr>
<td>Weight Loss % @150°C, 48 Hours</td>
<td>0.21</td>
<td>0.17</td>
<td>&lt; 0.2</td>
<td>ASTM D5470</td>
</tr>
<tr>
<td>Thermal Impedance, °C-in²/W (°C-cm²/W) @ 100 psi</td>
<td>0.02 (0.13) @ 50°C</td>
<td>0.02 (0.13) @ 65°C</td>
<td>0.01 (0.07) @ 50°C</td>
<td>ASTM D5470</td>
</tr>
<tr>
<td>Thermal Conductivity, W/m-K</td>
<td>0.8</td>
<td>0.9</td>
<td>3.0</td>
<td>ASTM D5470</td>
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<tr>
<td>Heat Capacity, J/g-K</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>ASTM E1269</td>
</tr>
<tr>
<td>Coefficient of Thermal Expansion, ppm/K</td>
<td>300</td>
<td>300</td>
<td>150</td>
<td>ASTM E831</td>
</tr>
<tr>
<td>Volume Resistivity, ohm-cm</td>
<td>10¹⁴</td>
<td>N/A</td>
<td>10¹⁴</td>
<td>ASTM D257</td>
</tr>
<tr>
<td>Voltage Breakdown Vac/mil</td>
<td>150*</td>
<td>N/A*</td>
<td>150*</td>
<td>ASTM D149</td>
</tr>
<tr>
<td>Flammability Rating</td>
<td>Not Tested</td>
<td>Not Tested</td>
<td>Not Tested</td>
<td>UL 94</td>
</tr>
<tr>
<td>RoHS Compliant</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Chomerics Certification</td>
</tr>
<tr>
<td>Outgassing, % TML</td>
<td>0.21</td>
<td>0.17</td>
<td>&lt; 0.2</td>
<td>ASTM E595</td>
</tr>
<tr>
<td>Shelf Life, months from date of manufacture</td>
<td>24</td>
<td>24</td>
<td>24</td>
<td>Chomerics</td>
</tr>
</tbody>
</table>

*Not recommended for dielectric applications.
Thermal Greases

Typical Applications
- Mobile, desktop, server CPUs
- Engine and transmission control modules
- Memory modules
- Power conversion equipment
- Power supplies and UPS
- Power semiconductors

Material Application

T650:
Material is supplied in 3, 15 or 30cc syringes for easy dispensing onto components or heat sinks. Bulk packaging is also available. Excess material can be wiped with a clean cloth and suitable solvent.

T660:
Packaging the same as T650. For optimum performance, the processor should be allowed to reach temperatures greater than 65°C (149°F). This causes the solder fillers to melt and conform to the mating surfaces, obtaining a minimum bondline thickness at the interface. This process only needs to occur one time to achieve optimum thermal performance of the grease.

T670:
T670 high performance thermal grease is supplied in easy access metal cans or pails. Mix with a spatula and remove the desired amount onto the component or stencil screen. Stencil desired pad part size onto heat sink for immediate assembly or shipping.

Product Attributes

T670 Highest Thermal Performance
- High bulk thermal conductivity
- Extremely low thermal impedance at thin and thick bondline thicknesses
- Stencil screen printed part application

T660 High Performance
- Dispersed solder spheres for high performance applications above 62°C
- Excellent thin bondline performance (less than 0.002 - 0.003 in)

T650 General Duty
- Used on general purpose applications

Ordering Information

Part Number Examples
65-00-T650-0160 = T650 Material in a 160 cc jar
65-00-T670-3790 = T670 Material in a 3790 cc (gallon pail)

Part Number:

<table>
<thead>
<tr>
<th>65</th>
<th>00</th>
<th>YYY</th>
<th>ZZZZ</th>
</tr>
</thead>
</table>

YYYY = Material (T670, T660, or T650)

ZZZZ = Volume in cc
- 0080 = 8 oz jar (80 cc)
- 0160 = 8 oz jar (160 cc)
- 3790 = 1 gallon pail (3790 cc)

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