Thermal Compound 53053
Silicone-Free Thermal Interface Material

Thermal Compound 53053 is a dispensable, tacky, one part, non-metal particle filled gap filler intended to fill large air spaces between surfaces. The material has low bleed, phase separation, and migration under typical applications and will survive temperatures over 180° C for short periods.

Features
- One-part dispensable gap filler
- Non-metallic filler
- High conductivity

Benefits
- Lower cost gap filler
- Non-hazardous

Typical Applications
- Lighting
- Automotive
- Motors
- Battery systems
- Power devices

The Non-Silicone Advantage
The no-creep feature extends circuit life by protecting components longer and eliminating premature failures caused by migrating fluid. Silicone-based compounds have an undesirable tendency to physically migrate and contaminate nearby components. This contamination can interfere with circuit operation long after hardware installation to cause unexpected and often inaccessible problems.
### Typical Properties

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Conditions</th>
<th>Typical Value</th>
<th>Test Method</th>
</tr>
</thead>
<tbody>
<tr>
<td>Specific Gravity</td>
<td>25°C</td>
<td>2.7</td>
<td>ASTM D-70</td>
</tr>
<tr>
<td>Bleed</td>
<td>200°C, 24 hrs</td>
<td>&lt;0.3%</td>
<td>FTM-321 Modified</td>
</tr>
<tr>
<td>Outgassing</td>
<td>150°C, 24 hrs</td>
<td>&lt;0.5%</td>
<td>FTM-321 Modified</td>
</tr>
<tr>
<td>Thermal Conductivity</td>
<td>36°C</td>
<td>3.5 W/m-K</td>
<td>ASTM D 5470-06</td>
</tr>
<tr>
<td>Dielectric Strength</td>
<td>0.05 in gap</td>
<td>318 V/mil</td>
<td>ASTM D 5470-06</td>
</tr>
<tr>
<td>Dielectric Constant</td>
<td>25°C, 1000Hz</td>
<td>5.0</td>
<td>ASTM D-150</td>
</tr>
<tr>
<td>Dissipation Factor</td>
<td>25°C, 1000Hz</td>
<td>0.0027</td>
<td>ASTM D-150</td>
</tr>
<tr>
<td>Electrical Resistivity</td>
<td>2.15x10^15 ohm-cm</td>
<td></td>
<td>ASTM D-257</td>
</tr>
<tr>
<td>Operating Temperature</td>
<td>-40 to 200°C</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bond Line (min)</td>
<td>0.15mm / 6 mil</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bond Line (max)</td>
<td>None / None</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Flow Rate</td>
<td>7 to 9 g/min</td>
<td>30cc syringe barrel, 16 ga tapered tip, 50 psi</td>
<td></td>
</tr>
<tr>
<td>Viscosity</td>
<td>1 sec-1, 25°C</td>
<td>1000 kCps</td>
<td>Ares G-2 Rheometer</td>
</tr>
<tr>
<td></td>
<td>1 sec-1, 50°C</td>
<td>750 kCps</td>
<td></td>
</tr>
<tr>
<td>Appearance</td>
<td>Off white paste</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Shelf Life</td>
<td>1 Year</td>
<td></td>
<td></td>
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</tbody>
</table>