BERGQUIST GAP FILLER TGF 1100SF
Known as BERGQUIST GAP FILLER 1100SF
April 2019

PRODUCT DESCRIPTION
Thermally Conductive, Silicone-Free Gap Filling Material.

<table>
<thead>
<tr>
<th>Technology</th>
<th>Silicone free</th>
</tr>
</thead>
<tbody>
<tr>
<td>Appearance (cured)</td>
<td>Orange</td>
</tr>
<tr>
<td>Appearance - Part A</td>
<td>Yellow</td>
</tr>
<tr>
<td>Appearance - Part B</td>
<td>Red</td>
</tr>
<tr>
<td>Cure</td>
<td>Room temperature cure or Cure at elevated temperatures</td>
</tr>
<tr>
<td>Application</td>
<td>Thermal management, TIM (Thermal Interface Material)</td>
</tr>
<tr>
<td>Mix Ratio by weight:</td>
<td>1 : 1</td>
</tr>
<tr>
<td>Mix Ratio by volume:</td>
<td>1 : 1</td>
</tr>
<tr>
<td>Solids Content, %</td>
<td>100</td>
</tr>
<tr>
<td>Operating Temperature Range</td>
<td>-60 to 125°C</td>
</tr>
</tbody>
</table>

FEATURES AND BENEFITS
- Thermal Conductivity: 1.1 W/m-K
- No silicone outgassing or extraction
- Ultra-conforming, designed for fragile and low-stress applications
- Ambient and accelerated cure schedules
- 100% solids - no cure by-products

BERGQUIST GAP FILLER TGF 1100SF is a high performance, thermally conductive liquid gap filling material which exhibits low modulus properties then cures to a soft, flexible elastomer, helping reduce thermal cycling stresses during operation and virtually eliminating stress during assembly of low-stress applications.

The mixed system will cure at ambient. BERGQUIST GAP FILLER TGF 1100SF offers infinite thickness variations with little or no stress to the sensitive components during or following assembly. BERGQUIST GAP FILLER TGF 1100SF is not intended for use in thermal interface applications requiring a mechanical structural bond.

TYPICAL APPLICATIONS
- Hard disk assemblies
- Silicone-sensitive electronics
- Filling various gaps between heat-generating devices to heat sink and housing
- Mechanical switching relay

- Silicone-sensitive optic components
- Dielectric for bare-leaded devices

TYPICAL PROPERTIES OF UNCURED MATERIAL

Note: The viscosity of the BERGQUIST GAP FILLER TGF 1100SF material is temperature dependent. The table below provides the multiplication factor to obtain viscosity at various temperatures. To obtain the viscosity at a given temperature, look up the multiplication factor at that temperature and multiply the corresponding viscosity at 25°C.

TYPICAL UNCURED PROPERTIES

<table>
<thead>
<tr>
<th>Part A Properties</th>
<th>Viscosity @ 20 °C</th>
<th>1.43</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Viscosity @ 25 °C</td>
<td>1.0</td>
</tr>
<tr>
<td></td>
<td>Viscosity @ 35 °C</td>
<td>0.58</td>
</tr>
<tr>
<td></td>
<td>Viscosity @ 45 °C</td>
<td>0.39</td>
</tr>
<tr>
<td></td>
<td>Viscosity @ 50 °C</td>
<td>0.32</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Part B Properties</th>
<th>Viscosity @ 20 °C</th>
<th>1.57</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Viscosity @ 25 °C</td>
<td>1.0</td>
</tr>
<tr>
<td></td>
<td>Viscosity @ 35 °C</td>
<td>0.5</td>
</tr>
<tr>
<td></td>
<td>Viscosity @ 45 °C</td>
<td>0.3</td>
</tr>
<tr>
<td></td>
<td>Viscosity @ 50 °C</td>
<td>0.24</td>
</tr>
</tbody>
</table>

Mixed Properties
- Mixed Viscosity, Brookfield - RV - Helipath, 25 °C, mPa·s (cP):
  - Spindle TF, speed 2 rpm: 450,000
  - Density, ASTM D792, g/cc: 2.0
  - Pot Life @ 25°C, minutes:
    - (time to double viscosity): 240
    - Shelf Life @ 25°C, days: 180

TYPICAL CURE SCHEDULE
Cure Schedule
- 24 hours @ 25°C
- 10 minutes @ 100°C

Parallel plate rheometer, estimated time to read 90% cure.
### TYPICAL PROPERTIES OF CURED MATERIAL

#### Physical Properties
- Hardness, Shore 00, Thirty second delay value, 60
- Heat Capacity, ASTM D2240
- Flammability, UL 94

#### Electrical Properties
- Dielectric Strength, ASTM D149, V/mil
- Dielectric Constant, ASTM D150 @ 1,000 Hz
- Volume Resistivity, ASTM D257, ohm-cm

#### Thermal Properties
- Thermal Conductivity, ASTM D5470, W/(m-K)

### Conversions
- \( ^\circ \text{C} \times 1.8 + 32 = ^\circ \text{F} \)
- \( \text{kV/mm} \times 25.4 = \text{V/mil} \)
- \( \text{mm} / 25.4 = \text{inches} \)
- \( N \times 0.225 = \text{lb} \)
- \( N/\text{mm} \times 5.71 = \text{oz in} \)
- \( \text{psi} \times 145 = \text{N/mm}^2 \)
- \( \text{N·m} \times 8.851 = \text{lb·in} \)
- \( \text{N·m} \times 0.738 = \text{lb·ft} \)
- \( \text{N·m} \times 5.71 = \text{oz in} \)

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