Technical Data Sheet

# BERGQUIST GAP FILLER TGF 1100SF

Known as BERGQUIST GAP FILLER 1100SF
June 2019

## PRODUCT DESCRIPTION

Thermally Conductive, Silicone-Free Gap Filling Material.

| | |
|---|---|
| **Technology** | Silicone free |
| Appearance (cured) | Orange |
| Appearance - Part A | Yellow |
| Appearance - Part B | Red |
| **Cure** | Room temperature cure or Cure at elevated temperatures |
| **Application** | Thermal management, TIM (Thermal Interface Material) |
| Mix Ratio by weight: Part A: Part B | 1 : 1 |
| Mix Ratio by volume: Part A: Part B | 1 : 1 |
| Solids Content, % | 100 |
| Operating Temperature Range | -60 to 125ºC |

## 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 whichexhibits low modulus properties then cures to a soft,flexible eastomer, 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

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

**Part A Properties**

| | |
|---|---|
| Viscosity @ 20 °C | 1.43 |
| Viscosity @ 25 °C | 1.0 |
| Viscosity @ 35 °C | 0.58 |
| Viscosity @ 45 °C | 0.39 |
| Viscosity @ 50 °C | 0.32 |

**Part B Properties**

| | |
|---|---|
| Viscosity @ 20 °C | 1.57 |
| Viscosity @ 25 °C | 1.0 |
| Viscosity @ 35 °C | 0.5 |
| Viscosity @ 45 °C | 0.3 |
| Viscosity @ 50 °C | 0.24 |

**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 (time to double viscosity), minutes: | |
| GAP FILLER TGF 1100SF-15 (Fast cure) | 15 |
| GAP FILLER TGF 1100SF-240 (Slow cure) | 240 |
| Shelf Life @ 25ºC , days | 180 |

## TYPICAL CURE SCHEDULE

BERGQUIST GAP FILLER TGF 1100SF is available with different curing characteristics to better suit your process. BERGQUIST GAP FILLER TGF 1100SF-15 reacts and cures faster than BERGQUIST GAP FILLER TGF 1100SF-240.

BERGQUIST GAP FILLER TGF 1100SF-240 has a longer work life compared to BERGQUIST GAP FILLER TGF 1100SF-15.

The following lists both work and cure time for the two versions:

**Typical Work Life**

| | |
|---|---|
| GAP FILLER TGF 1100SF-15, minutes | 15 |
| GAP FILLER TGF 1100SF-240, minutes | 240 |

**Typical Cure Time**

| | |
|---|---|
| GAP FILLER TGF 1100SF-15: | |
| @ 25 °C, hours | 3 |
| @ 100°C, minutes | 20 |
| GAP FILLER TGF 1100SF-240: | |
| @ 25 °C, hours | 24 |
| @ 100°C, minutes | 120 |

Parallel plate rheometer, estimated time to read 90% cure.

## TYPICAL PROPERTIES OF CURED MATERIAL

**Physical Properties**

| | |
|---|---|
| Hardness, Shore 00, Thirty second delay value, ASTM D2240 | 60 |
| Heat Capacity, ASTM E1269, J/g-K | 0.9 |
| Flammability, UL 94 | V-0 |

**Electrical Properties**

| | |
|---|---|
| Dielectric Strength, ASTM D149, V/mil | 400 |
| Dielectric Constant , ASTM D150 @ 1,000 Hz | 5.0 |
| Volume Resistivity, ASTM D257, ohm-cm | $1\times10^{10}$ |

**Thermal Properties**

| | |
|---|---|
| Thermal Conductivity, ASTM D5470, W/(m-K) | 1.1 |

## GENERAL INFORMATION

**For safe handling information on this product, consult the Safety Data Sheet, (SDS).**

**Not for product specifications**

The technical data contained herein are intended as reference only. Please contact your local quality department for assistance and recommendations on specifications for this product.

The above cure profiles are guideline recommendations. Cure conditions (time and temperature) may vary based on customers' experience and their application requirements, as well as customer curing equipment, oven loading and actual oven temperatures.

## CONFIGURATIONS AVAILABLE

BERGQUIST GAP FILLER TGF 1100SF is available in the following configurations:

- Cartridges
- Kits

**Application:**

- Mixed and dispensed using dual tube cartridge packs with static mixers and a manual or pneumatic gun
- Mixed and dispensed using industry standard high volume mixing and dispensing document
- Application of heat may be used to reduce viscosity

## STORAGE

Store product in the unopened container in a dry location. Storage information may be indicated on the product container labeling.

Optimal Storage: 5 to 25ºC for a 6 month shelf life, in sealed containers with moisture barrier packaging.

**Conversions**

(°C x 1.8) + 32 = °F
kV/mm x 25.4 = V/mil
mm / 25.4 = inches
N x 0.225 = lb/F
N/mm x 5.71 = lb/in
psi x 145 = N/mm²
MPa = N/mm²
N·m x 8.851 = lb·in
N·m x 0.738 = lb·ft
N·mm x 0.142 = oz·in
mPa·s = cP

## Disclaimer

**Note:**

The information provided in this Technical Data Sheet (TDS) including the recommendations for use and application of the product are based on our knowledge and experience of the product as at the date of this TDS. The product can have a variety of different applications as well as differing application and working conditions in your environment that are beyond our control. Henkel is, therefore, not liable for the suitability of our product for the production processes and conditions in respect of which you use them, as well as the intended applications and results. We strongly recommend that you carry out your own prior trials to confirm such suitability of our product.

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