



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 125°C |

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

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 @ 25°C, 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 reach 90% cure.

TYPICAL PROPERTIES OF CURED MATERIAL

Physical Properties

| | |
|---|-----|
| Hardness, Shore 00, Thirty second delay value, 60 ASTM D2240 | |
| 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 | 1×10^{10} |

Thermal Properties

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

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 equipment
- 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 25°C for a 6 month shelf life, in sealed containers with moisture barrier packaging.

Conversions

$(^{\circ}\text{C} \times 1.8) + 32 = ^{\circ}\text{F}$
 $\text{kV/mm} \times 25.4 = \text{V/mil}$
 $\text{mm} / 25.4 = \text{inches}$
 $\text{N} \times 0.225 = \text{lb/F}$
 $\text{N/mm} \times 5.71 = \text{lb/in}$
 $\text{psi} \times 145 = \text{N/mm}^2$
 $\text{MPa} = \text{N/mm}^2$
 $\text{N} \cdot \text{m} \times 8.851 = \text{lb} \cdot \text{in}$
 $\text{N} \cdot \text{m} \times 0.738 = \text{lb} \cdot \text{ft}$
 $\text{N} \cdot \text{mm} \times 0.142 = \text{oz} \cdot \text{in}$
 $\text{mPa} \cdot \text{s} = \text{cP}$

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

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.

Any liability in respect of the information in the Technical Data Sheet or any other written or oral recommendation(s) regarding the concerned product is excluded, except if otherwise explicitly agreed and except in relation to death or personal injury caused by our negligence and any liability under any applicable mandatory product liability law.

In case products are delivered by Henkel Belgium NV, Henkel Electronic Materials NV, Henkel Nederland BV, Henkel Technologies France SAS and Henkel France SA please additionally note the following:

In case Henkel would be nevertheless held liable, on whatever legal ground, Henkel's liability will in no event exceed the amount of the concerned delivery.

In case products are delivered by Henkel Colombiana, S.A.S. the following disclaimer is applicable:

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. 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.

Any liability in respect of the information in the Technical Data Sheet or any other written or oral recommendation(s) regarding the concerned product is excluded, except if otherwise explicitly agreed and except in relation to death or personal injury caused by our negligence and any liability under any applicable mandatory product liability law.

In case products are delivered by Henkel Corporation, Resin Technology Group, Inc., or Henkel Canada Corporation, the following disclaimer is applicable:

The data contained herein are furnished for information only and are believed to be reliable. We cannot assume responsibility for the results obtained by others over whose methods we have no control. It is the user's responsibility to determine suitability for the user's purpose of any production methods mentioned herein and to adopt such precautions as may be advisable for the protection of property and of persons against any hazards that may be involved in the handling and use thereof. In light of the foregoing, **Henkel Corporation specifically disclaims all warranties expressed or implied, including warranties of merchantability or fitness for a particular purpose, arising from sale or use of Henkel Corporation's products. Henkel Corporation specifically disclaims any liability for consequential or incidental damages of any kind, including lost profits.** The discussion herein of various processes or compositions is not to be interpreted as representation that they are free from domination of patents owned by others or as a license under any Henkel Corporation patents that may cover such processes or compositions. We recommend that each prospective user test his proposed application before repetitive use, using this data as a guide. This product may be covered by one or more United States or foreign patents or patent applications.

Trademark usage: [Except as otherwise noted] All trademarks in this document are trademarks and/or registered trademarks of Henkel and its affiliates in the U.S. and elsewhere.

Reference 4



Компания «ЭлектроПласт» предлагает заключение долгосрочных отношений при поставках импортных электронных компонентов на взаимовыгодных условиях!

Наши преимущества:

- Оперативные поставки широкого спектра электронных компонентов отечественного и импортного производства напрямую от производителей и с крупнейших мировых складов;
- Поставка более 17-ти миллионов наименований электронных компонентов;
- Поставка сложных, дефицитных, либо снятых с производства позиций;
- Оперативные сроки поставки под заказ (от 5 рабочих дней);
- Экспресс доставка в любую точку России;
- Техническая поддержка проекта, помощь в подборе аналогов, поставка прототипов;
- Система менеджмента качества сертифицирована по Международному стандарту ISO 9001;
- Лицензия ФСБ на осуществление работ с использованием сведений, составляющих государственную тайну;
- Поставка специализированных компонентов (Xilinx, Altera, Analog Devices, Intersil, Interpoint, Microsemi, Aeroflex, Peregrine, Syfer, Eurofarad, Texas Instrument, Miteq, Cobham, E2V, MA-COM, Hittite, Mini-Circuits, General Dynamics и др.);

Помимо этого, одним из направлений компании «ЭлектроПласт» является направление «Источники питания». Мы предлагаем Вам помощь Конструкторского отдела:

- Подбор оптимального решения, техническое обоснование при выборе компонента;
- Подбор аналогов;
- Консультации по применению компонента;
- Поставка образцов и прототипов;
- Техническая поддержка проекта;
- Защита от снятия компонента с производства.



Как с нами связаться

Телефон: 8 (812) 309 58 32 (многоканальный)

Факс: 8 (812) 320-02-42

Электронная почта: org@eplast1.ru

Адрес: 198099, г. Санкт-Петербург, ул. Калинина, дом 2, корпус 4, литера А.