Technical Data Sheet

BERGQUIST® GAP FILLER TGF 4400LVO

Preliminary September 2023

Product description

BERGQUIST® GAP FILLER TGF 4400LVO provides the following product characteristics:

Technology	Silicone
Appearance - Part A	Red
Appearance - Part B	White
Appearance (cured)	Pale red
Cure	Room temperature cure or heat cure
Application	Thermal management Cure in place Gap Filler (2K)
Mix Ratio by weight: Part A : Part B	1:1
Mix Ratio by volume: Part A: Part B	1:1
Operating temperature, °C	-40 to 150

Features and benefits

- Thermal conductivity, 4.4, W/(m.K)
- Low volatile outgassing (LVO)
- Suited for thin bondline thickness
- Outstanding dispensing flow behavior
- Improved storage and sedimentation stability

BERGQUIST® GAP FILLER TGF 4400LVO is a silicone, 2-part room temperature curable gap filler suitable for use in a wide range of electronic assembly applications. With 4.4 W/(m.K) thermal conductivity and the possibility to achieve thin bondline thickness, it provides an excellent and versatile solution to optimize heat dissipation in demanding applications. Its superior mechanical stability offers reliability and consistency over harsh operating conditions over lifetime of electronics components.

This material is an exceptional choice for use in automotive, industrial and consumer applications.

Typical applications

- Automotive control modules
- ADAS applications
- Power conversion components such as OBC, DCDC, Inverters
- Applications sensitive to siloxane outgassing
- High throughput manufacturing
- Applications where heat transfer needs to be optimized by material's thin bondline

Typical properties of uncured material

Part A properties

Viscosity, Pa.s:

Low shear rate 1.0 s^{-1}, DIN 53019	600
Shelf-Life @ 25°C, days	180*

*shelf-life validation under investigations

Part B properties

Viscosity, Pa.s:

Low shear rate 1.0 s^{-1}, DIN 53019	500
Shelf-Life @ 25°C, days	180*

*shelf-life validation under investigations

Mixed Properties

Bondline thickness, Internal*, µm	110
Density, ASTM D792, g/cc	3.1
Working time @ 25°C, ASTM D4473, min	90
Working time @ 40°C, ASTM D4473, min	30

*Adaptive compression speed, 0.1 MPa max stress, 25 mm diameter plate

Typical curing performance

Cure schedule, ASTM D4473

@ 25°C, hour	12
@ 40°C, min	240
@ 100°C, min	<15

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.

Typical properties of cured material

Physical Properties

Hardness, ASTM D2240, Shore OO	85
Heat capacity, ASTM E1269, J/(g.K)	TBD (~0.95)
Flammability, UL 94	V-0*
Siloxane content:	
ΣD4 – D6, ASTM F2466, ppm	ND**
ΣD7 – D10, ASTM F2466, ppm	<100

*Official rating pending

**ND: Not Detectable

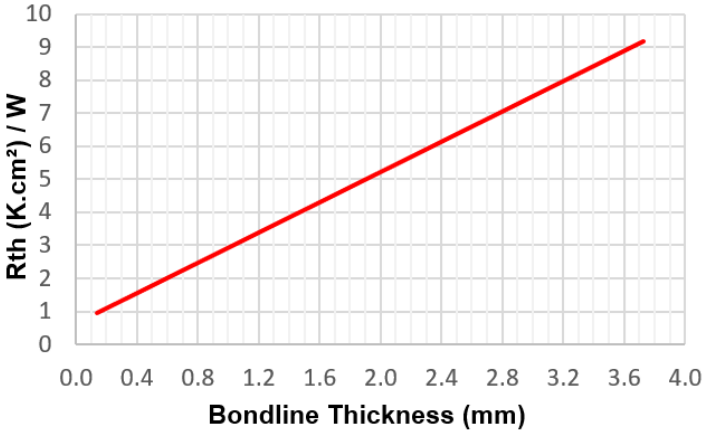
Electrical properties

Dielectric constant, ASTM D150	8.0
Dielectric strength, AC, ASTM D149, kV/mm	>10
Volume resistivity, DC, ASTM D257, Ω.m	$>10^{10}$

Thermal properties

Thermal conductivity, ASTM D5470, W/(m.K)	4.4
Thermal resistance, ASTM D5420, (K.cm²)/W	
@ 0.2 mm	1.1
@ 1.0 mm	2.9
@ 2.0 mm	5.2

Thermal Resistance Rth vs Bondline Thickness



General information
For safe handling information on this product, consult the Material Safety Data Sheet.

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 the specifications of 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 4400LVO is available in the following configurations:

Cartridges	50cc, 400cc, 1200cc
Pail kits	6 gallons

Storage
Store product in unopened container in controlled environment, ideally between 5 and 25°C.

Optimal Storage: 20°C for a 6 month shelf life in original packaging.

Material removed from containers may be contaminated during use. Do not return product to the original container. Henkel cannot assume responsibility for product which has been contaminated or stored under conditions other than those previously indicated. If additional information is required, please contact your local Henkel representative.

Shipping conditions
Short periods of time above the recommended storage temperature have not been shown to affect material's properties, negatively.

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

Additional information

Disclaimer

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