Gap Filler 1100SF (Two-Part)

Thermally Conductive, Silicone-Free, Liquid Gap Filling Material

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

Gap Filler 1100SF is the thermal solution for silicone-sensitive applications. The material is supplied as a two-part component curing at room or elevated temperatures. The material exhibits "gel-like" 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 two components are colored to assist as a mix indicator (1:1 by volume). The mixed system will cure at ambient temperature. Unlike cured thermal pad materials, the liquid approach offers infinite thickness variations with little or no stress during assembly displacement. Gap Filler 1100SF, although exhibiting some natural tack characteristics, is not intended for use in thermal interface applications requiring a mechanical structural bond.

Application

Gap Filler 1100SF can be mixed and dispensed using dual-tube cartridge packs with static mixers and manual or pneumatic gun, or high volume mixing and dispensing equipment (application of heat may be used to reduce viscosity).

TEMPERATURE DEPENDENCE OF VISCOSITY

The viscosity of the Gap Filler 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.

Temperature	Multiplication Factor	
°C	Part A	Part B
20	1.43	1.57
25	1.00	1.00
35	0.58	0.50
45	0.39	0.30
50	0.32	0.24

Example - Viscosity of Part A @ 45°:

Viscosity of Part A at 25°C is 450,000 cp. The multiplication factor for part A at 45°C is 0.39. Therefore:

(450,000) x (0.39) = 175,500 cps

TYPICAL PROPERTIES OF GAP FILLER 1100SF

PROPERTY	IMPERIAL VALUE	METRIC VALUE	TEST METHOD
Color / Part A	Yellow	Yellow	Visual
Color / Part B	Red	Red	Visual
Viscosity as Mixed (cps) (1)	450,000	450,000	ASTM D2196
Density (g/cc)	2.0	2.0	ASTM D792
Mix Ratio	1:1	1:1	—
Shelf Life @ 25°C (months)	6	6	—
PROPERTY AS CURED			
Color	Orange	Orange	Visual
Hardness (Shore 00) (2)	60	60	ASTM D2240
Heat Capacity (J/g-K)	0.9	0.9	ASTM E1269
Continuous Use Temp (°F) / (°C)	-76 to 257	-60 to 125	—
ELECTRICAL AS CURED			
Dielectric Strength (V/mil)	400	400	ASTM D149
Dielectric Constant (1000 Hz)	5.0	5.0	ASTM D150
Volume Resistivity (Ohm-meter)	10^{10}	10^{10}	ASTM D257
Flame Rating	V-O	V-O	U.L. 94
THERMAL AS CURED			
Thermal Conductivity (W/m-K)	1.1	1.1	ASTM D5470
CURE SCHEDULE			
Pot Life @ 25°C (min) (3)	10-15	10-15	—
Cure @ 25°C (hrs) (4)	4	4	—
Cure @ 100°C (min) (4)	45	45	—

1) Brookfield RV, Heli-Path, Spindle TF @ 2 rpm, 25°C.
2) Thirty second delay value Shore 00 hardness scale.
3) Time for viscosity to double.
4) Cure schedule (rheometer - time to read 90% cure)

Typical Applications Include:

- Silicone-sensitive optic components
- Silicone-sensitive electronics
- Hard disk assemblies
- Dielectric for bare-leaded devices
- Filling various gaps between heat-generating devices to heat sinks and housings
- Mechanical switching relay

Configurations Available:

- Supplied in cartridge or kit form

Building a Part Number

GF1100SF – 00 – 15 – 400cc – NA

Section A: GF1100SF = Gap Filler 1100SF Material

Section B: 00 = No spacer beads; 07 = 0.007" spacer beads

Section C: Pot Life: 15 = 15 minutes

Section D: Cartridges: 400cc = 400.0cc; Kits: 1200cc = 1200.0cc, or 10G = 10 gallon

Section E: NA = Selected standard option. If not selecting a standard option, insert company name, drawing number, and revision level.

Standard Options

◀◀ *example*

Note: To build a part number, visit our website at www.bergquistcompany.com.

Gap Pad®: U.S. Patent 5,679,457 and others.

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