

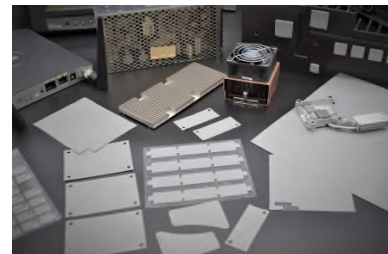
Silicone Free Thermal Gap Filler Preliminary Data Sheet

Silicone Free Thermal Gap Fillers

Tflex SF4 – Tflex SF7 – Tflex SF10

PRODUCT DESCRIPTION

Tflex SF4, Tflex SF7, and Tflex SF10 are innovative, high performing thermal materials in Laird's silicone free gap filler portfolio. The silicone free technology provides products with excellent deflection properties, providing minimal pressure on components during deflection. Very little pressure is required to reach the lowest possible thermal resistance. Thicknesses from 0.5mm (.020") up to 4mm (.160") in 0.5mm (.020") increments available as standard.



FEATURES AND BENEFITS

- Silicone free formulation
- Low peak and residual pressure
- Excellent surface wetting for low contact resistance
- Exceptionally low thermal resistance
- UL V-0 Flammability Rating

MARKETS AND APPLICATIONS

- Datacom Systems
- Automotive Electronics
- Telecom Systems
- Optical Modules
- Cameras

STORAGE CONDITIONS

- Storage Temperature: 0-35 Deg C
- Shelf Life:
 - 2 years from date of Shipment
 - No change for materials with DF, 1 year for all products with Adhesive

TYPICAL PROPERTIES

Property	Tflex SF4	Tflex SF7	Tflex SF10	Test Method
Color	Light Grey	Dark Grey	Grey	N/A
Thickness Range*	0.5mm-4mm	0.5mm-4mm	0.5mm-5mm	N/A
Thermal Conductivity (W/mK)	4.0	7.8	10.0	Hot Disk
Operating Temperature	-65 to 125 Deg C	-65 to 125 Deg C	-40 to 125 Deg C	Laird Test Method
Density (g/cc)	3.1	3.4	3.7	Helium Pycnometer
Hardness (shore 00)	1-4mm: 40/TBD	1-4mm: 40/TBD	1-5mm: 40/8	ASTM D2240
3 second/30 second	0.5-0.75mm: 70/TBD	0.5-0.75mm: 70/TBD	0.5-0.75mm: 70/50	
Outgassing TML (weight %)	TBD	TBD	0.33	ASTM E595
Outgassing CVCN (weight %)	TBD	TBD	0.15	ASTM E595
Thermal Resistance (°C in2/w)				ASTM D5470
• 1.5mm, 30 PSI	0.070	0.057	0.047	
Dielectric Breakdown Voltage (kV/mm)	7.5	7.9	7.5	ASTM D149
Dielectric Constant	TBD	TBD	9	ASTM D150
Volume Resistivity	6×10^{13}	5×10^{13}	10^{14}	ASTM D257

*Thickness Tolerance is +/- 10%

AVAILABILITY

STANDARD THICKNESSES

- 0.5mm (0.020") to 4.0mm (0.160") thick material available in 0.25mm (0.010") increments. Other custom thicknesses may be available upon request.

OPTIONS

- DF – eliminate tack from one side
- A1 – adhesive added to one side

PART NUMBER SYSTEM

Tflex™ indicates Laird elastomeric thermal gap filler product line. SF10 is a silicone free 10 W/mk material. Thickness of the sheet in mm is listed after the material name.

EXAMPLES:

- Tflex™ SF4,1.00 = 1.00mm thick Tflex SF4 material
- Tflex™ SF7DF,1.00 = 1.00mm thick Tflex SF7 material with only one side tacky