

## Fujipoly Data Sheet

# SARCON<sup>®</sup> XR-m series


## High Performance Gap Filler Type

### FEATURES

#### **Highly Conformable and High Heat Conducting Gel Materials.**

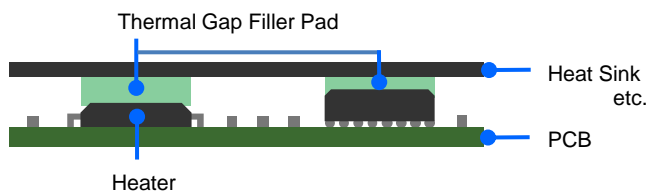
SARCON<sup>®</sup> Thermal Gap Filler Pads are highly conformable and high heat conducting gel materials in a versatile sheet form. They easily fit and adhere to most all shapes and sizes of components, including protrusions and recessed areas.

### CONSTRUCTIONS

Series	Characteristics	Constructions
<b>SARCON<sup>®</sup> XR-m</b>	Silicone compound with double sticky surfaces and Thermal Conductivity of XR-m material is 17.0W/m-K by using ASTM D5470 modified <sup>*1</sup> (11.0W/m-K by using Hot Disk)	 Plain Type

\*1) Thermal Conductivity ; Measured by using ASTM D5470 modified, refer to Fujipoly Test method FTM P-3030.

### RECOMMENDED APPLICATION



In areas where space between surface is uneven or varies and where surface textures are a concern regarding efficient thermal transfer, the supple consistency of Gap Filler Pad is excellent for filling air gaps and uneven surfaces.

### THERMAL RESISTANCE

Unit : K-cm<sup>2</sup>/W (K-in<sup>2</sup>/W)

Compression Force	0.3mmT	0.5mmT	1.0mmT	1.5mmT	2.0mmT
100kPa /14.5psi	0.4 (0.07)	0.5 (0.08)	0.9 (0.14)	1.3 (0.20)	1.7 (0.27)
300kPa /43.5psi	0.3 (0.05)	0.4 (0.06)	0.8 (0.13)	1.1 (0.18)	1.5 (0.23)
500kPa /72.5psi	0.2 (0.04)	0.4 (0.06)	0.8 (0.12)	1.0 (0.16)	1.4 (0.21)

Test method: Fujipoly Test method, FTM-P3050 by TIM Tester 1300 which is ASTM D5470 equivalent

- Specimen Area; DIA.33.0mm (1.30in)

**TYPICAL PROPERTIES**

Properties	unit	XR-m	Test method	Specimen		
Physical Properties	Color	-	Light Gray	Visual	-	
	Specific Gravity	-	3.2	ASTM D792	A	
	Hardness Highest Value	Shore OO (ASKER C)	72 (46)	ASTM D2240 (ISO 7619)	B	
	Tensile Strength	MPa (psi)	0.5 (72.5)	ASTM D412	A	
	Elongation	%	40	ASTM D412	A	
	Tear Strength	N/mm (ppi)	1.0 (5.7)	ASTM D624	A	
Electrical Properties	Volume Resistivity	Ohm-m	1.0x10 <sup>11</sup>	ASTM D257	C	
	Breakdown Voltage	kV/mm (volts/mil)	10 (254)	ASTM D149	C	
	Dielectric Strength	kV/mm (volts/mil)	7 (178)	ASTM D149	C	
	Dielectric Constant	-	50Hz	4.8	ASTM D150	A
			1kHz	4.7		
			1MHz	4.8		
	Dissipation Factor	-	50Hz	0.058	ASTM D150	A
1kHz			0.003			
1MHz			0.001			
Thermal Properties	Thermal Conductivity	W/m-K	17.0 by ASTM D5470	ASTM D5470 <sup>1</sup>	-	
			11.0 by Hot Disk	ISO/CD 22007-2		
	Useful Temperature	°C (°F)	-40 to +150 (-40 to +302)		-	
	Low molecular Siloxane	wt%	D <sub>4</sub> to D <sub>20</sub> Total	less than 0.0010	Gas Chromatography	-
Flame Retardant	-	V-0		UL 94	-	

• Specimen A: 2mmT Specimen B: 60mmW x 120mmL x 20mmT • Specimen C: 120mmW x 120mmL x 1mmT

\*1) Thermal Conductivity ; Measured by using ASTM D5470 modified, refer to Fujipoly Test method FTM P-3030.

**COMPRESSION FORCE**

Unit : N/6.4cm<sup>2</sup> (psi)

Compression Ratio	0.3mmT	0.5mmT	1.0mmT	1.5mmT	2.0mmT
10%	33 (7.5)	94 (21.3)	98 (22.2)	103 (23.3)	112 (25.4)
20%	130 (29.5)	308 (69.8)	329 (74.5)	378 (85.6)	445 (100.8)
30%	255 (57.8)	572 (129.6)	653 (147.9)	816 (184.9)	1032 (233.8)
40%	404 (91.5)	836 (189.4)	1051 (238.1)	1276 (289.1)	1621 (367.3)
50%	579 (131.2)	1099 (249.0)	1471 (333.3)	1784 (404.2)	2200 (498.4)
Sustain 50%	506 (114.6)	875 (198.2)	882 (199.8)	1299 (294.3)	1523 (345.1)

Test method: Measured by ASTM D575-91 for reference

- Specimen Area; DIA.28.6mm (1.13in) • Platen Area; DIA. 28.6mm (1.13in) • Sustain 50%: Sustain 50% at 1 minute later
- Compression Velocity; 5.0mm/minute

**DURABILITY**

Test Property	Unit	70°C		150°C	
		Initial	After 1,000hrs	Initial	After 1,000hrs
Specific Gravity	-	3.2	3.2	3.2	3.2
Hardness	ASKER C	46	54	46	62
Breakdown Voltage	kV/mm	10	10	10	10
Thermal conductivity	W/m-K	17	17	17	17

Test Property	Unit	60°C/90%RH	
		Initial	After 1,000hrs
Specific Gravity	-	3.2	3.2
Hardness	ASKER C	46	53
Breakdown Voltage	kV/mm	10	9
Thermal Conductivity	W/m-K	17	17

reduced temperature

60°C = 140°F

70°C = 158°F

150°C = 302°F

- Specimen : XR-m
- Thermal Conductivity ; Measured by using ASTM D5470 modified, refer to Fujipoly Test method FTM P-3030.

**TYPES AND CONFIGURATION**

Series	Product Name	Thickness	Sheet Size
SARCON® XR-m	30X-m	0.3mm ± 0.06mm	50mm x 50mm
	50X-m	0.5mm ± 0.15mm	300mm x 200mm (Recommended Usable Size: 290mmx190mm)
	100X-m	1.0mm ± 0.20mm	
	150X-m	1.5mm ± 0.20mm	
	200X-m	2.0mm ± 0.30mm	

**HANDLING NOTES**

- It is recommended to use the material in up to 30% of compression ratio. Using the material beyond the recommended compression rate may result in excessive silicone oil exudation.
- It is recommended to compress the material with the equal ratio on the whole surface. Partial excessive stress may also result in excessive silicone oil exudation.

**WARRANTY STATEMENT**

- Fujipoly has been utilizing Hot Disk method and TIM Tester method since Fujipoly defined them as Fujipoly standard.
- Properties of the products may be revised due to some changes for improving performance.
- Fujipoly Test method FTM-P3030 based on ASTM D5470 and ASTM C177 (GHP) method.
- Properties values in this document are not specification or guaranteed.
- This product is made of silicone, and silicone oil may exude from the product.
- This product is made of silicone, and low molecular siloxane may vaporize depending on operating conditions.
- The product is designed, developed, and manufactured for general industrial use only. Never use for medical, surgical, and/or relating purposes. Never use for the purpose of implantation and/or other purposes by which a part of or whole product remains in human body.
- Before using, a safety must be evaluated and verified by the purchaser.
- Contents described in the document do not guarantee the performances and qualities required for the purchaser's specific purposes. The purchaser is responsible for pre-testing the product under the purchaser's specific conditions and for verifying the expected performances.
- Statements concerning possible or suggested uses made herein may not be relied upon, or be constructed, as a guaranty of no patent infringement.
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