

## Fujipoly Data Sheet

# SARCON® GR80A series

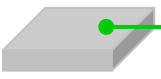

### High Performance Gap Filler Type

### FEATURES

#### Highly Conformable and High Heat Conducting gel materials.

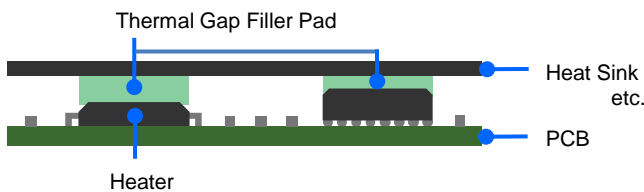
SARCON® Thermal Gap Filler Pads are highly conformable and high heat conducting gel materials in a versatile sheet form. They easily fit and adhere to most all shapes and sizes of components, including protrusions and recessed areas.

### CONSTRUCTIONS

Series	Characteristics	Constructions
<b>SARCON® GR80A-00</b>	Silicone compound with double sticky surfaces and Thermal Conductivity of GR80A-00 material is 13.0W/m-K by using ASTM D5470 modified* <sup>1</sup> (8.0W/m-K by using Hot Disk)	 Plain Type
<b>SARCON® GR80A-0H</b>	Silicone compound as above GR80A-00 plus additional hardening of the top surface to facilitate handling and installation during complex assemblies	 Hardened Surface

\*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

#### GR80A-00

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

Compression Force	1.0mmT	2.0mmT	3.0mmT
100kPa /14.5psi	1.1 (0.17)	2.3 (0.36)	3.7 (0.57)
300kPa /43.5psi	1.0 (0.16)	2.0 (0.31)	3.0 (0.47)
500kPa /72.5psi	0.9 (0.14)	1.6 (0.25)	2.4 (0.37)

#### GR80A-0H

Compression Force	0.3mmT	0.5mmT
100kPa /14.5psi	0.6 (0.09)	0.8 (0.12)
300kPa /43.5psi	0.5 (0.08)	0.7 (0.11)
500kPa /72.5psi	0.4 (0.06)	0.7 (0.11)

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	GR80A-00	Test method	Specimen		
Physical Properties	Color	-	Light Gray	Visual	-	
	Specific Gravity	-	3.3	ASTM D792	A	
	Hardness Highest Value	Shore OO	75	ASTM D2240	B	
	Tensile Strength	MPa (psi)	0.3 (43.5)	ASTM D412	A	
	Elongation	%	50	ASTM D412	A	
	Tear Strength	N/mm (ppi)	0.7 (4.0)	ASTM D624	A	
Electrical Properties	Volume Resistivity	Ohm-m	1.0x10 <sup>11</sup>	ASTM D257	C	
	Breakdown Voltage	kV/mm (volts/mil)	15 (381)	ASTM D149	C	
	Dielectric Strength	kV/mm (volts/mil)	8 (203)	ASTM D149	C	
	Dielectric Constant	-	50Hz	9.54	ASTM D150	A
			1kHz	8.82		
			1MHz	7.92		
	Dissipation Factor	-	50Hz	0.063	ASTM D150	A
1kHz			0.044			
1MHz			0.014			
Thermal Properties	Thermal Conductivity	W/m-K	13.0 by ASTM D5470	ASTM D5470 <sup>1</sup>	-	
			8.0 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	0.0010 or less	Gas Chromatography	-
Flame Retardant	UL94	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****GR80A-00**Unit : N/6.4cm<sup>2</sup> (psi)

Compression Ratio	1.0mmT	2.0mmT	3.0mmT
10%	82 (18.6)	60 (13.6)	49 (11.1)
20%	229 (51.9)	183 (41.5)	163 (36.9)
30%	468 (106.0)	379 (85.9)	318 (72.0)
40%	698 (158.1)	608 (137.8)	535 (121.2)
50%	930 (210.7)	794 (179.9)	713 (161.5)
Sustain 50%	389 (88.1)	319 (72.3)	286 (64.8)

**GR80A-0H**

Compression Ratio	0.3mmT	0.5mmT
10%	68 (15.4)	106 (24.0)
20%	193 (43.7)	312 (70.7)
30%	356 (80.7)	568 (128.7)
40%	510 (115.5)	832 (188.5)
50%	678 (153.6)	1145 (259.4)
Sustain 50%	660 (149.5)	861 (195.1)

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	-	3.3	3.3	3.3	3.3
Hardness	Shore OO	75	72	75	92
Volume Resistivity	Ohm-m	$2.4 \times 10^{11}$	$2.8 \times 10^{11}$	$2.4 \times 10^{11}$	$1.8 \times 10^{13}$
Breakdown Voltage	kV/mm	15	14	15	20
Thermal Conductivity	W/m-K	8.0	8.0	8.0	8.0

Test Property	Unit	60°C/90%RH		-40°C/30min↔125/30min	
		Initial	After 1,000hrs	Initial	After 1,000hrs
Specific Gravity	-	3.3	3.3	3.3	3.3
Hardness	Shore OO	75	80	75	70
Volume Resistivity	Ohm-m	$2.4 \times 10^{11}$	$3.7 \times 10^{11}$	$2.4 \times 10^{11}$	$1.3 \times 10^{12}$
Breakdown Voltage	kV/mm	15	17	15	17
Thermal Conductivity	W/m-K	8.0	8.0	8.0	8.0

Test Property	Unit	-40°C	
		Initial	After 1,000hrs
Specific Gravity	-	3.3	3.3
Hardness	Shore OO	75	70
Volume Resistivity	Ohm-m	$2.4 \times 10^{11}$	$2.6 \times 10^{11}$
Breakdown Voltage	kV/mm	15	15
Thermal Conductivity	W/m-K	8.0	8.0

reduced temperature

-40°C = -40°F

60°C = 140°F

70°C = 158°F

125°C = 257°F

150°C = 302°F

• Specimen : GR80A-00 • Thermal Conductivity ; Measured by using Hot Disk.

**TYPES AND CONFIGURATION**

Series	Product Name	Thickness	Sheet Size
SARCON® GR80A-00	GR80A-00-100GY	1.0mm ± 0.15mm	300mm × 200mm (Recommended Usable Size: 290mm×190mm)
	GR80A-00-150GY	1.5mm ± 0.20mm	
	GR80A-00-200GY	2.0mm ± 0.30mm	
	GR80A-00-250GY	2.5mm ± 0.30mm	
	GR80A-00-300GY	3.0mm ± 0.30mm	
SARCON® GR80A-0H	GR80A-0H-30GY	0.3mm ± 0.06mm	300mm × 200mm (Recommended Usable Size: 290mm×190mm)
	GR80A-0H-50GY	0.5mm ± 0.10mm	
	GR80A-0H-100GY	1.0mm ± 0.15mm	
	GR80A-0H-150GY	1.5mm ± 0.20mm	
	GR80A-0H-200GY	2.0mm ± 0.30mm	
	GR80A-0H-250GY	2.5mm ± 0.30mm	
	GR80A-0H-300GY	3.0mm ± 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.
- Copyright© 2015 Fujipoly®