

# Fujipoly Data Sheet

## SARCON® PG80B series

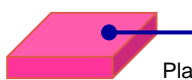
### Extremely Compressible Gap Filler Type

### FEATURES

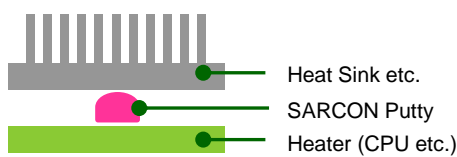
#### Highly Conformable and Non-Flammable, Higher Thermal interface materials

SARCON® Extremely Compressible Gap Filler Type (Putty Type) is a highly conformable, thermally conductive, non-flammable interface materials. The surface consistency is excellent for filling small air gaps and uneven mating surface, making reliable contact with various shapes and sizes of components.

### CONSTRUCTION

Series	Characteristics	Constructions
SARCON® PG80B	Silicone compound with double sticky surfaces and Thermal Conductivity of PG80B material is 8.0W/m-K by using Hot Disk.	 Plain Type

### RECOMMENDED APPLICATION



To determine the size and volume of SARCON Putty Type to be used, follow this helpful example:



**EX.**  
Original Gap :  $V=90.0\text{mm}^3$   
(0.4mm H x 15mm W x 15mm L)

Decide Thickness of SARCON depend on the compression force

e.g. Decided Thickness = 1.0mm  

$$\sqrt{90.0(V) / 1 (T)} = 9.486 \text{ mm}$$

⇒ use ; 9.5 mm x 9.5 mm x 1.0 mmT

### THERMAL RESISTANCE

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

Compression Force	0.5mmT	1.0mmT	1.5mmT	2.0mmT
100kPa /14.5psi	0.55 (0.09)	0.92 (0.14)	1.22 (0.19)	1.43 (0.22)
300kPa /43.5psi	0.35 (0.05)	0.37 (0.06)	0.39 (0.06)	0.46 (0.07)
500kPa /72.5psi	0.27 (0.04)	0.26 (0.04)	0.28 (0.04)	0.30 (0.05)

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	PG80B		Test method	Specimen	
Physical Properties	Color	-	Red		Visual	-	
	Specific Gravity	-	3.3		ASTM D792	A	
Electrical Properties	Volume Resistivity	Ohm-m	$3 \times 10^{11}$		ASTM D257	B	
	Breakdown Voltage	kV/mm (volts/mil)	10 (254)		ASTM D149	B	
	Dielectric Strength	kV/mm (volts/mil)	4		ASTM D149	B	
	Dielectric Constant	-	50Hz	12.10		ASTM D150	A
			1kHz	9.60			
			1MHz	8.60			
Dissipation Factor	-	50Hz	0.533		ASTM D150	A	
		1kHz	0.093				
		1MHz	0.015				
Thermal Properties	Thermal Conductivity	W/m-K	8.0		ISO 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	0.0132 or less	Gas Chromatography	-	
	Flame Retardant	UL94	V-0		UL 94	-	

• Each Specimens are cured for measurement. • Specimen A: 2mmT • Specimen B: 120mmW × 120mmL × 1mmT

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

Compression Ratio	0.5mmT	1.0mmT	1.5mmT	2.0mmT
10%	37 (8.4)	73 (16.5)	70 (15.9)	27 (6.1)
20%	74 (16.8)	210 (47.6)	130 (29.5)	104 (23.6)
30%	355 (80.4)	298 (67.5)	227 (51.4)	142 (32.2)
40%	386 (87.5)	381 (86.3)	274 (62.1)	179 (40.6)
50%	638 (144.5)	489 (110.8)	371 (84.1)	212 (48.0)
Sustain 50%	83 (18.8)	50 (11.3)	45 (10.2)	30 (6.8)

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**Unit : K-cm<sup>2</sup>/W

Test Property	Compression Ratio	70°C					150°C				
		Initial	100hrs	250hrs	500hrs	1,000hrs	Initial	100hrs	250hrs	500hrs	1,000hrs
Thermal Resistance	30%	0.90	0.88	0.93	0.89	0.90	0.93	0.93	0.94	0.93	0.94
	70%	0.47	0.44	0.44	0.45	0.44	0.47	0.47	0.47	0.43	0.46

Test Property	Compression Ratio	60°C/95%RH					85°C/85%RH				
		Initial	100hrs	250hrs	500hrs	1,000hrs	Initial	100hrs	250hrs	500hrs	1,000hrs
Thermal Resistance	30%	0.91	0.89	0.91	0.89	0.90	0.85	0.85	0.86	0.85	0.86
	70%	0.53	0.52	0.53	0.51	0.51	0.51	0.49	0.51	0.50	0.48

Test Property	Compression Ratio	-40°C(30min)↔+125°C(30min)				
		Initial	100hrs	250hrs	500hrs	1,000hrs
Thermal Resistance	30%	0.88	0.91	0.89	0.87	0.87
	70%	0.49	0.46	0.45	0.44	0.44

- Thermal Resistance ; Measured by using ASTM D5470 modified, refer to Fujipoly Test method FTM P-3030.

reduced temperature

- Specimen Area; 30% = 15mm square , initial thickness = 1.0mm

-40°C = -40°F

- Specimen Area; 70% = 10mm square , initial thickness = 1.0mm

60°C = 140°F

(Specimen is sandwiched between aluminum blocks.)

70°C = 158°F

125°C = 257°F

150°C = 302°F

**TYPES AND CONFIGURATION**

Series	Product Name	Thickness	Sheet Size
SARCON® PG80B	PG80B-00-50RD	0.5mm ±0.10mm	300mm × 200mm (Recommended Usable Size:290mm×190mm)
	PG80B-00-100RD	1.0mm ±0.15mm	
	PG80B-00-150RD	1.5mm ±0.25mm	
	PG80B-00-200RD	2.0mm ±0.35mm	

**HANDLING NOTES**

- 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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