

# FUJIPOLY Data Sheet

## SARCON PG80B series

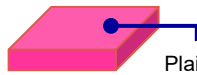
### Extremely Compressible Gap Filler Type

#### FEATURES

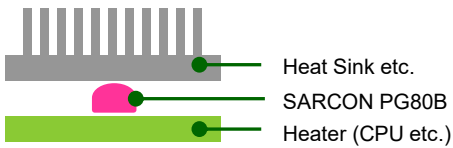
Highly Conformable and Non-Flammable, Higher Thermal interface materials.

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:



Decide Thickness of SARCON depend on the compression force  
e.g. Decided Thickness = 1mm

$$\sqrt{90(V) / 1 (T)} = 9.486 \text{ mm}$$

⇒ use ; PG80B-00-100RD 9.5 x 9.5

#### 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	
	Hardness	Shore OO	41	ASTM D2240	B	
Electrical Properties	Volume Resistivity	Ohm-m	$3.0 \times 10^9$	ASTM D257	C	
	Breakdown Voltage	kV/mm (volts/mil)	10 (254)	ASTM D149	D	
	Dielectric Strength	kV/mm (volts/mil)	4 (102)	ASTM D149	D	
	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>3</sub> to D <sub>10</sub> 0.0010	Gas Chromatography	-	
	Flame Retardant	-	V-0	UL 94	-	

- Each Specimens are cured for measurement.
- Specimen A : 2mmT • Specimen B : 50mmW × 50mmL × 9mmT (1.5mmT x 6pcs) • Specimen C : 100mmW × 100mmL × 1mmT
- Specimen D : 120mmW × 120mmL × 1mmT

## COMPRESSION FORCE

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

Compression Ratio	0.5mmT	1.0mmT	1.5mmT	2.0mmT
10%	18 (4.1)	12 (2.7)	15 (3.4)	9 (2.0)
20%	104 (23.6)	90 (20.4)	52 (11.8)	39 (8.8)
30%	248 (56.2)	205 (46.4)	101 (22.9)	72 (16.3)
40%	380 (86.1)	308 (69.8)	162 (36.7)	99 (22.4)
50%	552 (125.1)	418 (94.7)	196 (44.4)	124 (28.1)
Sustain 50%	231 (52.3)	61 (13.8)	56 (12.7)	35 (7.9)

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

reduced temperature

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

-40°C = -40°F

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

60°C = 140°F

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

70°C = 158°F

(Specimen is sandwiched between aluminum blocks.)

85°C = 185°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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