Fujipoly Data Sheet

SARCON® PG80A series

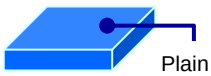
Extremely Compressible Gap Filler Type

FEATURES

Highly Conformable and Non-Flammable, Higher Thermal interface materials

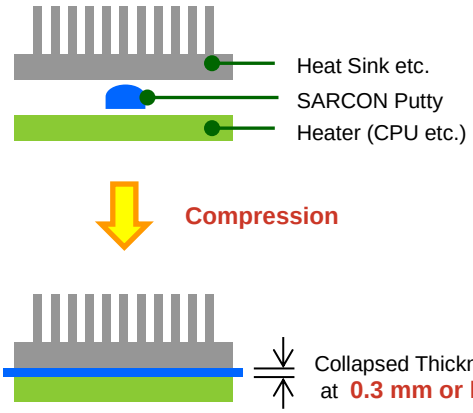
SARCON® Extremely Compressible Gap Filler Type (Putty Type) is a highly conformable, thermally conductive, non-flammable interface materials. The surface consistency is excellent for filling small air gaps and uneven mating surface, making reliable contact with various shapes and sizes of components.

CONSTRUCTION

Series	Characteristics	Constructions
SARCON® PG80A	Silicone compound with double sticky surfaces and Thermal Conductivity of PG80A material is 13.0W/m-K by using ASTM D5470 modified*1 (8.0W/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



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 = 1.0mm

$\sqrt{67.5(V) \times 1\ (T)} = 8.21$ mm

⇒ **use ; 8.5 mm x 8.5 mm x 1.0 mm**

THERMAL RESISTANCE

Unit : K-cm²/W (K-in²/W)

Compression Force	0.5mmT	1.0mmT	1.5mmT	2.0mmT
100kPa /14.5psi	0.5 (0.08)	1.1 (0.17)	1.5 (0.23)	1.8 (0.28)
300kPa /43.5psi	0.3 (0.05)	0.4 (0.06)	0.4 (0.06)	0.5 (0.08)
500kPa /72.5psi	0.2 (0.03)	0.3 (0.05)	0.3 (0.05)	0.3 (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		PG80A	Test method	Specimen
Physical Properties	Color	-		Blue	Visual	-
	Specific Gravity	-		3.3	ASTM D792	A
Electrical Properties	Volume Resistivity	Ohm-m		$1.0x10^{11}$	ASTM D257	B
	Breakdown Voltage	kV/mm (volts/mil)		12 (305)	ASTM D149	B
	Dielectric Strength	kV/mm (volts/mil)		N/A	ASTM D149	B
	Dielectric Constant	-	50Hz	9.28	ASTM D150	A
			1kHz	8.58		
			1MHz	7.76		
	Dissipation Factor	-	50Hz	0.0483	ASTM D150	A
			1kHz	0.0389		
			1MHz	0.0147		
Thermal Properties	Thermal Conductivity	W/m-K		13.0 by ASTM D5470	ASTM D5470	-
				8.0 by Hot Disk	ISO/CD 22007-2	
	Useful Temperature	°C (°F)		-40 to +150 (-40 to +302)	-	-
	Low molecular Siloxane	wt%		D_4 to D_{20} Total 0.0158 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

•Thermal Conductivity ; Based on Fujipoly Test Method, FTM P-1612 by Hot Disk and FTM P-3030 by ASTM D5470 modified.

COMPRESSION FORCE

Unit : N/6.4cm^2 (psi)

Compression Ratio	0.5mmT	1.0mmT	1.5mmT	2.0mmT
10%	50 (11.3)	42 (9.5)	40 (9.1)	29 (6.6)
20%	191 (43.3)	130 (29.5)	95 (21.5)	72 (16.3)
30%	337 (76.4)	215 (48.7)	147 (33.3)	111 (25.1)
40%	474 (107.4)	292 (66.2)	192 (43.5)	140 (31.7)
50%	605 (137.1)	374 (84.7)	231 (52.3)	166 (37.6)
Sustain 50%	128 (29.0)	65 (14.7)	46 (10.4)	41 (9.3)

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^2/W

Test Property	Compression Ratio	70℃					150℃				
		Initial	100hrs	250hrs	500hrs	1,000hrs	Initial	100hrs	250hrs	500hrs	1,000hrs
Thermal Resistance	30%	0.83	0.85	0.84	0.84	0.82	0.81	0.78	0.82	0.85	0.86
	70%	0.48	0.52	0.50	0.48	0.48	0.52	0.54	0.55	0.55	0.55

Test Property	Compression Ratio	60℃/95%RH					-40℃(30min)⇔+125℃(30min)				
		Initial	100hrs	250hrs	500hrs	1,000hrs	Initial	100hrs	250hrs	500hrs	1,000hrs
Thermal Resistance	30%	0.78	0.73	0.77	0.76	0.71	0.80	0.82	0.81	0.79	0.75
	70%	0.49	0.49	0.49	0.50	0.50	0.44	0.43	0.43	0.43	0.43

Test method: Fujipoly Test method, FTM-P3030 by ASTM D5470 modified

- Specimen Area; 15mm sq. x 1mm Thickness

reduced temperature

-40℃ = -40°F 125℃ = 257°F

60℃ = 140°F 150℃ = 302°F

70℃ = 158°F

TYPES AND CONFIGURATION

Series	Product Name	Thickness	Sheet Size
SARCON® PG80A	PG80A-00-50BL	0.5mm ±0.10mm	300mm × 200mm (Recommended Usable Size:290mm×190mm)
	PG80A-00-100BL	1.0mm ±0.15mm	
	PG80A-00-150BL	1.5mm ±0.25mm	
	PG80A-00-200BL	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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