FUJIPOLY

FUJIPOLY Data Sheet

SARCON GR-Pm series

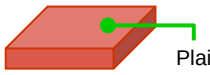
Extremely Compressible Gap Filler Type

FEATURES

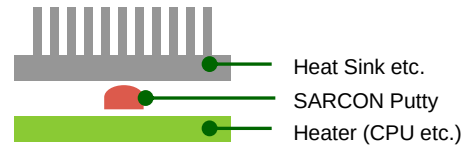
Highly Thermally Conductive and Non-Flammable interface materials.

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 GR-Pm	Silicone compound with double sticky surfaces and Thermal Conductivity of GR-Pm material is 6.0W/m-K by using Hot Wire (4.5W/m-K by using Hot Disk)	 Plain Type

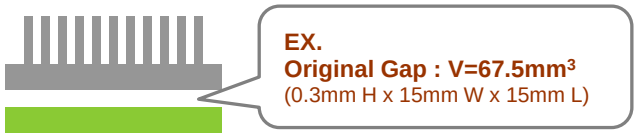
RECOMMENDED APPLICATION



Compression



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

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

⇒ **use ; 8.5 mm x 8.5 mm x 1.0 mm**

THERMAL RESISTANCE

Unit : K-cm^2/W (K-in^2/W)

Compression Force	1.5mmT	2.0mmT	2.5mmT
100kPa /14.5psi	2.9 (0.45)	3.3 (0.52)	4.3 (0.67)
300kPa /43.5psi	1.2 (0.19)	1.7 (0.26)	2.0 (0.31)
500kPa /72.5psi	0.8 (0.12)	1.0 (0.16)	1.4 (0.22)

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		GR-Pm	Test method	Specimen
Physical Properties	Color	-		Dark Reddish Gray	Visual	-
	Specific Gravity	-		3.2	ASTM D792	A
Electrical Properties	Volume Resistivity	Ohm-m		$1.0x10^{12}$	ASTM D257	B
	Breakdown Voltage	kV/mm (volts/mil)		18 (457)	ASTM D149	B
	Dielectric Strength	kV/mm (volts/mil)		13 (330)	ASTM D149	B
	Dielectric Constant	-	50Hz	7.37	ASTM D150	A
			1kHz	7.31		
			1MHz	7.34		
	Dissipation Factor	-	50Hz	0.0101	ASTM D150	A
			1kHz	0.0022		
			1MHz	0.0007		
Thermal Properties	Thermal Conductivity	W/m-K		6.0 by Hot Wire	ASTM D2326	-
				4.5 by Hot Disk	ISO 22007-2	
	Useful Temperature	℃ (°F)		-40 to +150 (-40 to +302)	-	-
	Low molecular Siloxane	wt%		D_3 to D_{10} 0.0010 D_{11} to D_{20} 0.0010*	Gas Chromatography	-
	Flame Retardant	-		V-0	UL 94	-

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

* Siloxane concentration (D20) unknown due to the influence of other extracted components.

COMPRESSION FORCE

Unit：N/6.4cm^2 (psi)

Compression Ratio	1.5mmT	2.0mmT	2.5mmT
10%	53 (12.0)	52 (11.8)	50 (11.3)
20%	153 (34.7)	144 (32.6)	123 (27.9)
30%	265 (60.0)	231 (52.3)	207 (46.9)
40%	375 (85.0)	314 (71.1)	289 (65.5)
50%	492 (111.5)	408 (92.4)	371 (84.1)
Sustain 50%	144 (32.6)	118 (26.7)	76 (17.2)

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%	1.7	1.8	1.8	1.8	1.8	1.7	1.9	2.0	2.3	2.3
	70%	0.9	0.9	0.9	0.9	0.9	0.9	1.0	1.1	1.3	1.3
	90%	0.5	0.5	0.5	0.4	0.4	0.5	0.4	0.4	0.4	0.4

Test Property	Compression Ratio	60℃/90%RH					-40℃(30min)⇔+125℃(30min)				
		Initial	100hrs	250hrs	500hrs	1,000hrs	Initial	100hrs	250hrs	500hrs	1,000hrs
Thermal Resistance	30%	1.68	1.68	1.68	1.68	1.65	1.68	1.78	1.78	1.80	1.83
	70%	0.90	0.90	0.90	0.90	0.91	0.90	0.98	1.07	1.07	1.07
	90%	0.52	0.53	0.59	0.60	0.60	0.52	0.44	0.44	0.42	0.42

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

・Specimen Area：30% and 70% compression ratio = 10mm square , initial thickness = 1.5mm

・Specimen Area：90% compression ratio = 5mm square , initial thickness = 1.5mm

(Specimen is sandwiched between aluminum blocks.)

reduced temperature

-40℃ = -40°F
60℃ = 140°F
70℃ = 158°F
125℃ = 257°F
150℃ = 302°F

TYPES AND CONFIGURATION

Series	Product Name	Thickness	Sheet Size
SARCON GR-Pm	150G-Pm	1.5mm +0.5/-0mm	300mm × 200mm (Recommended Usable Size:290mm×190mm)
	200G-Pm	2.0mm +0.7/-0mm	
	250G-Pm	2.5mm +0.7/-0mm	

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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