

## Fujipoly Data Sheet

# SARCON® GR14A series


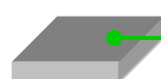
### Gap Filler Type

### FEATURES

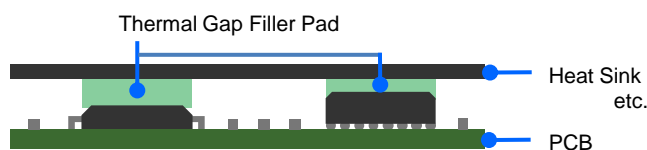
**Highly Conformable, Non-Flammable, Isolation and High Heat Conducting Gel materials.**

- Gap filler materials are supplied in a fully cured state and remain pliable, easy conforming to minute surface irregularities.
- The basic Gap Filler Pad series can be further enhanced for special handling and die-cutting requirements.

### CONSTRUCTIONS

Series	Characteristics	Constructions
<b>SARCON® GR14A-00</b>	Silicone compound with double sticky surfaces and Thermal Conductivity of GR14A material is 1.6W/m-K by using Hot Wire (1.4W/m-K by using Hot Disk)	 Plain Type
<b>SARCON® GR14A-0H</b>	Silicone compound as above GR14A-00 plus additional hardening of the top surface to facilitate handling and installation during complex assemblies	 Hardened Surface

### 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

#### GR14A-00

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

Compression Force	0.5mmT	1.0mmT	1.5mmT	2.0mmT	2.5mmT	3.0mmT	4.0mmT	5.0mmT
100kPa(14.5psi)	3.9 (0.61)	6.3 (0.97)	8.4 (1.31)	9.9 (1.53)	11.1 (1.72)	12.5 (1.94)	15.9 (2.46)	18.4 (2.84)
300kPa(43.5psi)	3.3 (0.51)	5.2 (0.81)	6.7 (1.04)	8.0 (1.24)	9.3 (1.44)	10.1 (1.56)	12.2 (1.89)	14.3 (2.21)
500kPa(72.5psi)	3.0 (0.46)	4.7 (0.72)	5.9 (0.92)	7.1 (1.10)	8.1 (1.25)	8.7 (1.35)	10.4 (1.62)	12.2 (1.89)

#### GR14A-0H

Compression Force	0.5mmT	1.0mmT	1.5mmT	2.0mmT	2.5mmT	3.0mmT	4.0mmT	5.0mmT
100kPa(14.5psi)	4.2 (0.65)	6.3 (0.97)	8.7 (1.34)	11.1 (1.71)	13.1 (2.03)	14.8 (2.29)	18.1 (2.81)	20.8 (3.23)
300kPa(43.5psi)	3.6 (0.56)	5.3 (0.81)	7.3 (1.13)	9.3 (1.44)	10.7 (1.66)	11.9 (1.85)	14.5 (2.25)	16.8 (2.60)
500kPa(72.5psi)	3.4 (0.52)	4.8 (0.74)	6.5 (1.00)	8.2 (1.27)	9.4 (1.46)	10.5 (1.63)	12.5 (1.93)	14.3 (2.21)

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	GR14A-00	Test method	Specimen		
Physical Properties	Color	-	Gray	Visual	-	
	Specific Gravity	-	2.0	ASTM D 792	A	
	Hardness Highest Value	Shore OO (ASKER C)	25 (10)	ASTM D2240 (ISO 7619)	B	
	Tensile Strength	MPa (psi)	0.1 (14.5)	ASTM D 412	A	
	Elongation	%	225	ASTM D 412	A	
	Tear Strength	N/mm (ppi)	0.5 (2.9)	ASTM D 624	A	
Electrical Properties	Volume Resistivity	Ohm-m	1.0x10 <sup>11</sup>	ASTM D 257	C	
	Breakdown Voltage	kV/mm (volts/mil)	14 (356)	ASTM D 149	C	
	Dielectric Strength	kV/mm (volts/mil)	11 (279)	ASTM D 149	C	
	Dielectric Constant	-	50Hz	4.82	ASTM D 150	A
			1kHz	4.31		
			1MHz	4.04		
	Dissipation Factor	-	50Hz	0.0916	ASTM D 150	A
1kHz			0.0421			
1MHz			0.0599			
Thermal Properties	Thermal Conductivity	W/m-K	1.6 by Hot Wire	ASTM D 2326	-	
			1.4 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	0.0014	Gas Chromatography	-
Flame Retardant	UL94	V-0		UL 94	-	

- Specimen A: 2mmT • Specimen B: 30mmW x 50mmL x 12mmT (3mmT x 4pcs) • Specimen C: 120mmW x 120mmL x 1mmT
- Test methods of Thermal Conductivity are based on Fujipoly Test Method, FTM P-1612 by Hot Disk and FTM P-1620 by Hot Wire.

**COMPRESSION FORCE****GR14A-00**Unit : N/6.4cm<sup>2</sup> (psi)

Compression Ratio	0.5mmT	1.0mmT	1.5mmT	2.0mmT	2.5mmT	3.0mmT	4.0mmT	5.0mmT
10%	74 (16.8)	61 (13.8)	55 (12.5)	44 (10.0)	37 (8.4)	29 (6.6)	22 (5.0)	13 (3.0)
20%	195 (44.2)	135 (30.6)	117 (26.5)	98 (22.2)	75 (17.1)	63 (14.3)	45 (10.2)	29 (6.6)
30%	337 (76.4)	244 (55.3)	201 (45.5)	166 (37.6)	135 (30.6)	121 (27.4)	88 (19.9)	62 (14.0)
40%	512 (116.0)	405 (91.8)	339 (76.8)	286 (64.8)	241 (54.5)	198 (44.9)	162 (36.8)	121 (27.5)
50%	673 (152.5)	568 (128.7)	516 (116.9)	467 (105.8)	399 (90.4)	332 (75.2)	281 (63.7)	220 (49.8)
Sustain 50%	301 (68.1)	296 (67.1)	275 (62.3)	247 (56.0)	209 (47.4)	173 (39.2)	147 (33.3)	114 (25.9)

**GR14A-0H**

Compression Ratio	0.5mmT	1.0mmT	1.5mmT	2.0mmT	2.5mmT	3.0mmT	4.0mmT	5.0mmT
10%	222 (70.9)	183 (51.7)	141 (31.9)	92 (20.8)	54 (12.2)	38 (8.6)	33 (7.7)	22 (5.0)
20%	468 (120.3)	351 (90.6)	262 (59.4)	177 (40.1)	115 (26.1)	79 (17.9)	68 (16.3)	49 (11.1)
30%	674 (171.7)	598 (141.4)	446 (101.0)	328 (74.3)	221 (50.1)	167 (37.8)	132 (33.3)	104 (23.6)
40%	969 (219.5)	851 (204.8)	690 (156.3)	539 (122.1)	383 (86.8)	314 (71.1)	259 (60.0)	196 (44.4)
50%	1227 (278.0)	1136 (283.9)	1014 (229.7)	823 (186.5)	618 (140.0)	531 (120.3)	422 (100.8)	341 (77.3)
Sustain 50%	1025 (232.2)	951 (215.5)	689 (156.1)	522 (118.3)	355 (80.4)	302 (68.4)	235 (54.4)	182 (41.2)

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**

Test Property	Unit	70°C		150°C	
		Initial	After 1,000hrs	Initial	After 1,000hrs
Specific Gravity	-	2.0	2.0	2.0	2.0
Hardness	Shore OO	25	27	25	30
Breakdown Voltage	kV/mm	14	14	14	17
Thermal conductivity	W/m-K	1.4	1.4	1.4	1.4

Test Property	Unit	60°C/95%RH		-40°C	
		Initial	After 1,000hrs	Initial	After 1,000hrs
Specific Gravity	-	2.0	2.0	2.0	2.0
Hardness	Shore OO	25	27	25	27
Breakdown Voltage	kV/mm	14	14	14	14
Thermal conductivity	W/m-K	1.4	1.3	1.4	1.4

Test Property	Unit	-40°C(30min)↔+125°C(30min)	
		Initial	After 1,000hrs
Specific Gravity	-	2.0	2.0
Hardness	Shore OO	25	30
Breakdown Voltage	kV/mm	14	17
Thermal conductivity	W/m-K	1.4	1.3

•Specimen : GR14A-00 • Test methods of Thermal Conductivity base on Fujipoly Test Method, FTM P-1612 by Hot Disk.

reduced temperature

-40°C = -40°F

60°C = 140°F

70°C = 158°F

125°C = 257°F

150°C = 302°F

**TYPES AND CONFIGURATION**

Series	Product Name	Thickness	Sheet Size
SARCON® GR14A-00	GR14A-00-50GY	0.5mm ± 0.15mm	300mm × 200mm (Recommended Usable Size: 290mm×190mm)
	GR14A-00-100GY	1.0mm ± 0.20mm	
	GR14A-00-150GY	1.5mm ± 0.20mm	
	GR14A-00-200GY	2.0mm ± 0.30mm	
	GR14A-00-250GY	2.5mm ± 0.30mm	
	GR14A-00-300GY	3.0mm ± 0.30mm	
	GR14A-00-350GY	3.5mm ± 0.35mm	
	GR14A-00-400GY	4.0mm ± 0.40mm	
	GR14A-00-450GY	4.5mm ± 0.45mm	
	GR14A-00-500GY	5.0mm ± 0.50mm	
SARCON® GR14A-0H	GR14A-0H-50GY	0.5mm ± 0.15mm	300mm × 200mm (Recommended Usable Size: 290mm×190mm)
	GR14A-0H-100GY	1.0mm ± 0.20mm	
	GR14A-0H-150GY	1.5mm ± 0.20mm	
	GR14A-0H-200GY	2.0mm ± 0.30mm	
	GR14A-0H-250GY	2.5mm ± 0.30mm	
	GR14A-0H-300GY	3.0mm ± 0.30mm	
	GR14A-0H-350GY	3.5mm ± 0.35mm	
	GR14A-0H-400GY	4.0mm ± 0.40mm	
	GR14A-0H-450GY	4.5mm ± 0.45mm	
	GR14A-0H-500GY	5.0mm ± 0.50mm	

## **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.
- 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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