

## Fujipoly Data Sheet

# SARCON® GR14A series



### Gap Filler Type

### FEATURES

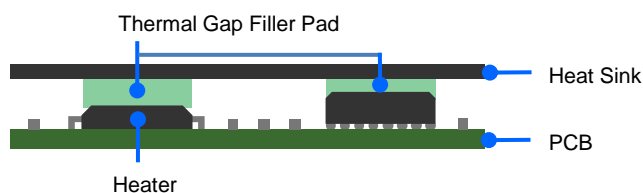
**Highly Conformable, Non-Flammable, Isolation and High Heat Conducting Gel materials.**

- 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 supply 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 D792	A	
	Hardness Highest Value	Shore OO	25	ASTM D2240	B	
	Tensile Strength	MPa (psi)	0.1 (14.5)	ASTM D412	A	
	Elongation	%	225	ASTM D412	A	
	Tear Strength	N/mm (ppi)	0.5 (2.9)	ASTM D624	A	
Electrical Properties	Volume Resistivity	Ohm-m	1.0x10 <sup>11</sup>	ASTM D257	C	
	Breakdown Voltage	kV/mm (volts/mil)	14 (356)	ASTM D149	C	
	Dielectric Strength	kV/mm (volts/mil)	11 (279)	ASTM D149	C	
	Dielectric Constant	-	50Hz	4.82	ASTM D150	A
			1kHz	4.31		
			1MHz	4.04		
	Dissipation Factor	-	50Hz	0.0916	ASTM D150	A
1kHz			0.0421			
1MHz			0.0060			
Thermal Properties	Thermal Conductivity	W/m-K	1.6 by Hot Wire	ASTM D2326	-	
			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	0.0034	Gas Chromatography	-
Flame Retardant	-	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 Rate	0.5mmT	1.0mmT	1.5mmT	2.0mmT	2.5mmT	3.0mmT	4.0mmT	5.0mmT
10%	313 (70.9)	227 (51.4)	141 (31.9)	92 (20.8)	54 (12.2)	46 (10.4)	34 (7.7)	22 (5.0)
20%	531 (120.3)	397 (90.0)	262 (59.4)	177 (40.1)	115 (26.1)	98 (22.2)	72 (16.3)	49 (11.1)
30%	758 (171.7)	602 (136.4)	446 (101.0)	328 (74.3)	221 (50.1)	194 (44.0)	147 (33.3)	104 (23.6)
40%	969 (219.5)	830 (188.0)	690 (156.3)	539 (122.1)	383 (86.8)	344 (77.9)	265 (60.0)	196 (44.4)
50%	1227 (278.0)	1121 (254.0)	1014 (229.7)	823 (186.5)	618 (140.0)	567 (128.5)	445 (100.8)	341 (77.3)
Sustain 50%	1025 (232.2)	857 (194.2)	689 (156.1)	522 (118.3)	355 (80.4)	322 (73.0)	240 (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	28	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	1.4	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.
- Copyright © 2015 Fujipoly®