

## Fujipoly Data Sheet

# SARCON<sup>®</sup> GR-Sd series

### Gap Filler Type


### FEATURES

#### Very Low Modulus,

#### 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.

### CONSTRUCTION

Series	Characteristics	Constructions
<b>SARCON<sup>®</sup> GR-Sd</b>	Silicone compound with double sticky surfaces and Thermal Conductivity of GR-ae material is 1.5W/m-K by using Hot Wire (1.3W/m-K by using Hot Disk)	 <ul style="list-style-type: none"> <li><span style="color: green;">●</span> Thin hardened outer layer</li> <li><span style="color: green;">●</span> Thermal Gap Filler Pad</li> <li><span style="color: green;">●</span> Thin hardened outer layer</li> </ul>

### RECOMMENDED APPLICATION



GR-Sd is the lowest modulus type of Gap Filler Type available. Ideally suited for applications requiring low compression force on the component. It offers the high performance that very easily conforms in and around protrusions and depressions on components to make complete, reliable physical contact.

- **Absolute lowest modulus with high adhesion**
- **Easily fills air gaps, uneven surfaces**
- **Lower thermal resistance due to complete surface contact**

### THERMAL RESISTANCE

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

Compression Force	2.0mmT	2.5mmT	3.0mmT	3.5mmT	4.0mmT	5.0mmT
100kPa(14.5psi)	9.6 (1.48)	11.0 (1.70)	11.6 (1.79)	13.6 (2.10)	14.2 (2.20)	17.1 (2.65)
300kPa(43.5psi)	7.4 (1.14)	8.2 (1.27)	8.3 (1.28)	10.1 (1.56)	11.0 (1.70)	12.7 (1.97)
500kPa(72.5psi)	7.3 (1.13)	8.1 (1.26)	8.2 (1.27)	8.4 (1.31)	8.8 (1.37)	10.5 (1.63)

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-Sd	Test method	Specimen		
Physical Properties	Color	-	Dark Gray	Visual	-	
	Specific Gravity	-	2.5	ASTM D 792	A	
	Hardness Highest Value	Shore OO (ASKER C)	15 (5) (reference)	ASTM D2240 (ISO 7619)	B	
	Tensile Strength	MPa (psi)	0.1 (14.5)	ASTM D 412	A	
	Elongation	%	230	ASTM D 412	A	
	Tear Strength	N/mm (ppi)	1.2 (6.8)	ASTM D 624	A	
Electrical Properties	Volume Resistivity	Ohm-m	1.0x10 <sup>9</sup>	ASTM D 257	C	
	Breakdown Voltage	kV/mm (volts/mil)	10 (254)	ASTM D 149	C	
	Dielectric Strength	kV/mm (volts/mil)	10 (254)	ASTM D 149	C	
	Dielectric Constant	-	50Hz	6.44	ASTM D 150	A
			1kHz	6.20		
			1MHz	5.97		
	Dissipation Factor	-	50Hz	0.0239	ASTM D 150	A
1kHz			0.0153			
1MHz			0.0072			
Thermal Properties	Thermal Conductivity	W/m-K	1.5 by Hot Wire	ASTM D 2326	-	
			1.3 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	0.0011	Gas Chromatography	-
Flame Retardant	UL94	V-1		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**Unit : N/6.4cm<sup>2</sup> (psi)

Compression Ratio	2.0mmT	2.5mmT	3.0mmT	4.0mmT	5.0mmT
10%	47 (10.7)	35 (7.9)	29 (6.6)	20 (4.5)	13 (2.9)
20%	89 (20.2)	66 (15.0)	49 (11.1)	41 (9.3)	31 (7.0)
30%	132 (29.9)	105 (23.8)	77 (17.5)	69 (15.6)	52 (11.8)
40%	196 (44.4)	158 (35.8)	120 (27.2)	102 (23.1)	84 (19.0)
50%	297 (67.3)	234 (53.0)	193 (43.7)	167 (37.8)	135 (30.6)
Sustain 50%	142 (32.2)	107 (24.2)	73 (16.5)	66 (15.0)	54 (12.2)

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

**TYPES AND CONFIGURATION**

Series	Product Name	Thickness	Sheet Size
SARCON <sup>®</sup> GR-Sd	200G-Sd	2.0mm ± 0.30mm	300mm x 200mm (Recommended Usable Size: 290mmx190mm)
	250G-Sd	2.5mm ± 0.30mm	
	300G-Sd	3.0mm ± 0.30mm	
	350G-Sd	3.5mm ± 0.35mm	
	400G-Sd	4.0mm ± 0.40mm	
	450G-Sd	4.5mm ± 0.45mm	
	500G-Sd	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 © 2014 Fujipoly®