Revised: February 14th 2003

Fujipoly New Product Technical Information

NEW PRODUCTS : SARCON® GR-L

High Thermally Conductive and Non-Flammable Silicone Gel Sheets

1. Features:

Sarcon® GR-L is a highly conformable, thermally conductive gel material, **2.8 Watt/m-K** (No electricity conductive) in a versatile sheet form that easily fits and adheres to most all shapes and sizes of components, and makes reliable and complete physical contact.

The surface consistency of the pads is excellent for filling air gaps and uneven surfaces.

1) Low thermal resistance due to the high thermal conductivity
2) UL94 V-0 class
3) Low content of Low Molecular Siloxane

2. Variety of Sarcon® GR-L products:

Series	Construction	Application Guidelines
Sarcon® ## G-L (GR-L)	Silicone compound	Between chassis wall and other surface. Between semiconductor and heat sink. Large area heat transfer to heat sink
Sarcon® ## G-HL (GR-HL)	Silicone compound with hardened top surface	Same as above, except hardened top surface facilitates handling and installation during complex assemblies.

* Thickness availability: 0.5mm, 1.0mm, 2.0mm and 3.0mm
* Can be designed for custom applications. (Cutting. Punching)
* ## refers to a thickness of sheet.

3. Typical Product Properties:

3-1. Thermal properties and Flame retardancy: (Typical Value)

Item		GR-L	GR-HL	Test Method
Thermal Conductivity (Watt/m-K)		2.8		Fujipoly Test Method: FTM P-1620 *1
Thermal Resistance (°C-inch²/Watt)	0.5mmT	0.42	0.59	Fujipoly Test Method: FTM P-3020 which gives ASTM D5470 equivalent value.
	1.0mmT	0.76	0.93	
	2.0mmT	1.20	1.41	
	3.0mmT	1.68	1.88	
Flame Retardancy		V-0	V-0	UL94 standard

*1: JIS R2618 / ASTM D2326 equivalent.

3-2. Extractable Volatile (Low Molecular Siloxane Content): (Typical Value)

Dn	Sarcon® GR-L	Test Method
D_4 ～ D_{10}	Less than 0.0010 wt%	Gas Chromatographic Analysis by Abstracting Carbon tetrachloride
D_{11}～ D_{20}	0.0039 wt%	
Total Less D_{20}	0.0039 wt%	

3-3. Compression vs. Compression Load: (Typical Value)

Compression Rate		50 G-L/G-HL	100 G-L/G-HL	200 G-L/G-HL	300 G-L/G-HL
Load ($kgf/inch^2$)	10%	12 / 18	11 / 16	6 / 9	5 / 7
	20%	31 / 40	22 / 32	15 / 22	12 / 20
	30%	47 / 61	38 / 56	30 / 41	25 / 38
	40%	65 / 89	59 / 86	49 / 64	42 / 61
	50%	86 / 126	84 / 114	75 / 91	64 / 86
	Sustain 50%	52 / 97	44 / 92	40 / 55	35 / 45

Remark/ Test method: Fujipoly Test Method:
Compression Velocity: 5.0mm/minute with 200kgf load Cell Compression Area: 6.25cm^2 (25mm x 25mm)
Sustain 50% at 1 minute after

4. Typical Material Properties:

GR-L, GR-HL materials:

Item	Unit	GR-L	GR-HL	Test Method	Specimen
Color	—	Gray	Gray	Visual	—
Specific Gravity		2.7	2.7	JIS K 6220/ASTM D 792	A
Hardness	ASKER C (Shore 00)	26 (53)	26 (53)	SRIS 0101 (ASTM D 2240)	B (–)
Tensile Strength	MPa	0.2	0.2	JIS K 6251(#2 Die)/ASTM D412	A
Elongation	%	64	32	JIS K 6251(#2 Die)/ASTM D412	A
Tear Resistance	KN/m	1.0	1.0	JIS K 6252(Angle)/ASTM D 624	A
Volume Resistivity	Mohms-m	$2.5x10^4$	$2.4x10^4$	JIS K 6249/ASTM D 257	C
Breakdown Voltage	KV/mm	13	15	JIS K 6249/ASTM D 149	C
Withstand Voltage	KV/mm	7	10	JIS K 6249/ASTM D 149	C

Remark / Specimen A : 2.0mm Thickness.
Specimen B : 60mm Width x 120mm Length x 20mm Thickness.
Specimen C : 120mm Width x 120mm Length x 1.0mm Thickness.