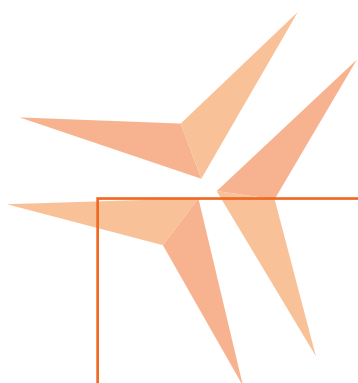
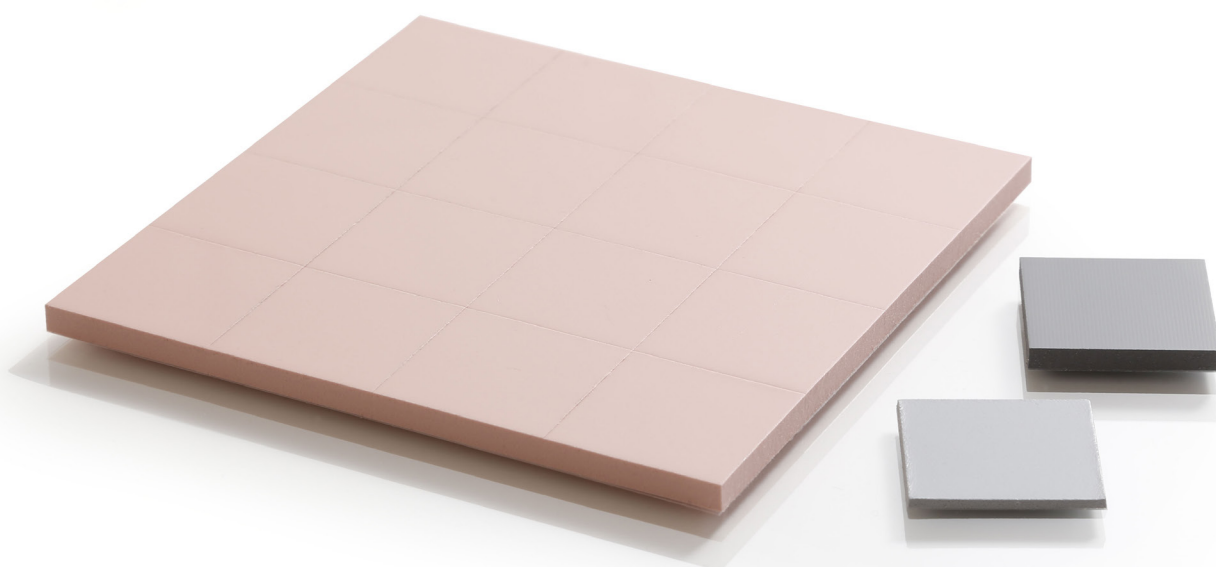


TERMISK LEDENDE MATERIALE



SARCON®
GAP FILLER TYPE

EXTREMELY COMPRESSIBLE GAP FILLER TYPE

Highest Thermal Conductivity and Non-Flammable interface materials

SARCON® XR-Um is the highest thermally conductive thin film Extremely Compressible Gap Filler Type (Putty Type). The material's putty nature greatly contributes to reduction of contact resistance and consequently to its low thermal resistance. It is a customer friendly material due to its easy application by printing. SARCON® XR-Um-AL has one surface with aluminum film, which enables users to remove the carrier film after installation (before operation) with no-pull-out effect.

Features

- Gap filler materials are supplied in a fully cured state and remain pliable, easily conforming to minute surface irregularities .
- The basic Gap Filler Pad series can be further enhanced for special handling and die-cutting requirements.
- UL94 V-0 certified

Handling Method for XR-Um series

Step-1



Peel the product with Carrier Film off from PET Film

Step-2



Apply onto Heat Sink

Step-3



Roll twice on the film to attach to heat sink

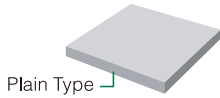
Step-4



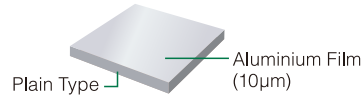
Peel off instantly the PET film to horizontal direction

CONSTRUCTION

1) Plain Type



7) Combine Type



TYPICAL PRODUCT PROPERTIES

Test Properties		Unit		XR-Um	Test Method
Physical Properties	Construction	(above)		1) , 7)	–
	Thickness*	mm		0.22 to 0.5	ASTM D374
	Specific Gravity	–		3.2	ASTM D792
	Color	–		Light Gray	Visual
Electrical Properties	Dielectric Constant	–	50Hz	9.49	ASTM D150
			1kHz	8.19	
			1MHz	7.71	
	Dissipation Factor	–	50Hz	0.180	ASTM D150
			1kHz	0.052	
			1MHz	0.005	
Thermal Properties	Thermal Conductivity unit : W/m-K	ASTM D5470		17.0	ASTM D5470
		Hot Disk		11.0	ISO 22007-2
	Recommended Operating Temp.	°C		-40 to +150	–
		°F		-40 to +302	
	Flame Retardant**	–		V-0	UL94

a) Recommended Minimum Gap is the recommended minimum compressed thickness so as not to damage the component(s) due to high stresses.

b) Thermal Conductivity : Measured by using ASTM D5470 modified, refer to Fujipoly Test method 'FTM P-3030'. → See P.36

: Measured by using Hot Disk method, refer to Fujipoly Test method 'FTM P-1612'. → See P.35

*Some details of thickness. → See, following Constructions

** XR-Um-AL: V-0 equivalent.

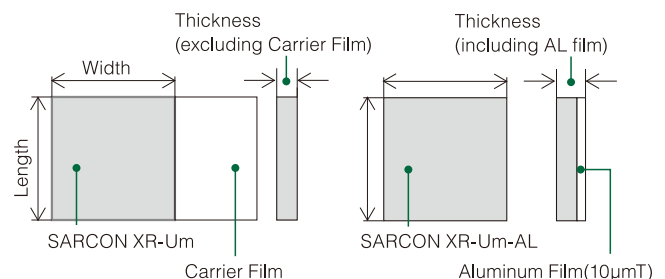
THERMAL RESISTANCE

Pressure	XR-Um					
	20X-Um	30X-Um	50X-Um	20X-Um-AL	30X-Um-AL	50X-Um-AL
100kPa /14.5psi	0.2 (0.02)	0.2 (0.03)	0.4 (0.06)	0.3 (0.04)	0.4 (0.05)	0.5 (0.08)
300kPa /43.5psi	0.1 (0.02)	0.2 (0.03)	0.3 (0.05)	0.3 (0.04)	0.3 (0.04)	0.4 (0.06)
500kPa /72.5psi	0.1 (0.02)	0.2 (0.02)	0.3 (0.04)	0.2 (0.03)	0.3 (0.04)	0.3 (0.05)

c) Measured by using ASTM D5470 equivalent (TIM tester 1300), refer to Fujipoly Test method 'FTM P-3050'. → See P.36

CONSTRUCTIONS

XR-Um / XR-Um-AL			
Item	Size(mm)		Tolerance(mm)
Width	15.0 to 50.0		± 1.5
Length	15.0 to 50.0		± 1.0
Thickness	20X-Um	0.22	± 0.04
	30X-Um	0.30	± 0.06
	40X-Um	0.40	± 0.08
	50X-Um	0.50	± 0.10



SARCON®

FORM IN PLACE GAP FILLER TYPE

Highly Thermally Conductive and Electricity Insulative Silicone Compound

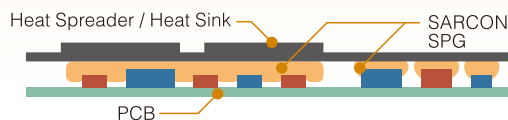
SARCON® Form in Place Gap Filler Type is a highly conformable / thermally conductive type silicone compound. It provides a thermal solution for the recent trends of higher frequencies and integration in the development of electronic device.

SARCON® Form in Place Gap Filler TYPE easily forms and adheres to most surfaces, shape and size of components.

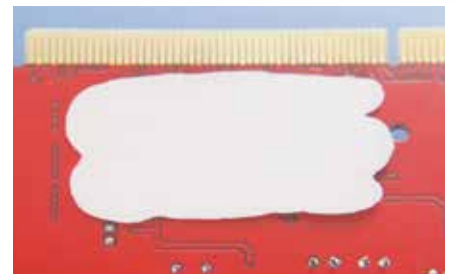
Features

- Fill large gaps while providing superior thermal transfer.
- Conformable with very low compression forces.
- Excellent vibration absorption capabilities.
- Maintains all initial properties across a wide temperature range.
- Used to "Form-in-Place" and remain form stable.
- Requires no heat curing.
- Will not cause corrosion on any metal surface.

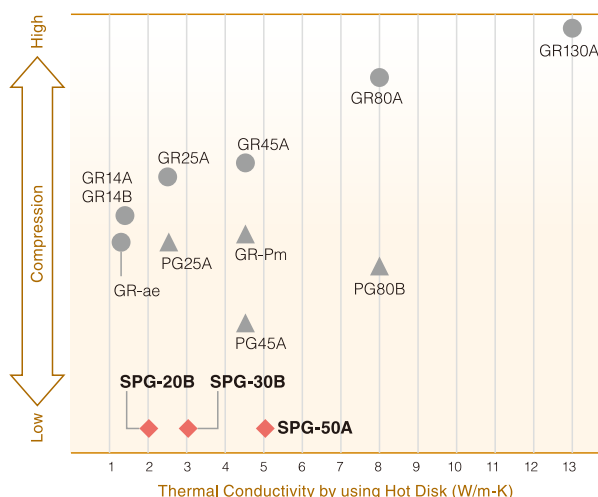
RECOMMENDED APPLICATION



- SARCON Form in Place Gap Filler TYPE is superior to filling gaps as well as dissipating heat.
- Excellent workability / handling with its softness but no dripping and no pumping.



COMPRESSION LOAD CORRELATION OF FUJIPOLY TIM PAD PRODUCTS



PACKAGING OPTIONS

- Pre-filled syringe : 30ml
- Caulk Tube : 325ml
- Custom packaging : Available on request



TYPICAL PRODUCT PROPERTIES

Test Properties		Unit	SPG-20B	SPG-30B	SPG-50A	Test Method
Physical Properties	Specific Gravity	—	2.8	3.2	3.2	ASTM D792
	Color	—	Light Gray	Apricot	Light Sky Blue	Visual
	Viscosity	Pa-s	1.0(1/s)	2,750	4,100	ASTM D1824 modified
			0.5(1/s)	1,900	4,600	
	Oil Separation	%(125°C x 1,000hrs)	0.00	0.00	—	ASTM D 6184
	Weight Loss	wt%	0.06	0.05	0.06	Fujipoly Original Method
Electrical	Penetration	mm/10	330	260	170	ASTM D1403
	Volume Resistivity	Ohm-m	1x10 ¹³	1x10 ¹²	1x10 ¹²	ASTM D257
	Dielectric Constant	—	50Hz	10.50	10.34	ASTM D150
			1kHz	10.21	10.25	
			1MHz	9.96	10.18	
	Dissipation Factor	—	50Hz	0.0230	0.0065	ASTM D150
			1kHz	0.0123	0.0042	
			1MHz	0.0056	0.0032	
Thermal Properties	Thermal Conductivity	W/m-k	2.1	3.1	5.0	Hot Disk : ISO 22007-2
	Recommended Operating Temp.	°C	-40 to +150	-40 to +150	-40 to +150	—
		°F	-40 to +302	-40 to +302	-40 to +302	

a) Recommended Minimum Gap is the recommended minimum compressed thickness so as not to damage the component(s) due to high stresses.
 b) Viscosity: Measured by Modular Advanced Rheometer System RV1 and the specimen flows to 0.5mm Gap between parallel plates. → See P.38
 c) Weight Loss at 150°C(302°F) x24hrs , amount of sample: 2cm³ (0.12in³).
 d) Thermal Conductivity : Measured by using Hot Disk method, refer to Fujipoly Test method "FTM P-1612". → See P.35

THERMAL RESISTANCE

unit : K-cm²/W (K-in²/W)

Gap	SPG-20B	SPG-30B	SPG-50A
0.5mm / 0.020in	1.6 (0.25)	1.3 (0.20)	0.9 (0.14)
1.0mm / 0.039in	2.9 (0.45)	2.3 (0.36)	1.7 (0.26)

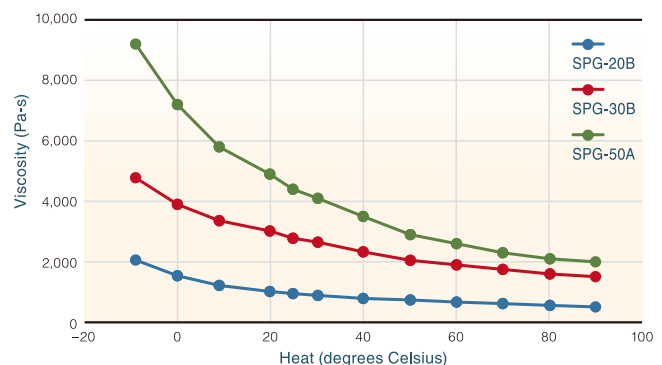
specimen conditions

		SPG-20B	SPG-30B	SPG-50A
Area		3.14cm ²	3.14cm ²	3.14cm ²
		0.487in ²	0.487in ²	0.487in ²
Weight	Gap:0.5mm / 0.02in	0.44g	0.50g	0.50g
	Gap: 1.0mm / 0.04in	0.88g	1.00g	1.00g

e) Measured by using ASTM D5470 modified, refer to Fujipoly Test method "FTM P-3030". → See P.36

VISCOSITY VERSUS HEAT

Heat		SPG-20B	SPG-30B	SPG-50A
°C	°F			
-10	14	1,740	5,570	9,200
0	32	1,450	4,240	7,200
10	50	1,200	3,490	5,800
20	68	1,120	2,960	4,900
25	77	1,060	2,800	4,400
30	89	1,020	2,590	4,100
40	104	1,000	2,370	3,500
50	122	950	2,240	2,900
60	140	910	2,150	2,600
70	158	830	2,120	2,300
80	176	790	2,100	2,100
90	194	710	1,950	2,000



f) Test Conditions → See P.38
 Clearance Gap : 0.5mm
 Rotation Speed = 1.0 (1/s)
 Equipment : MARS III by HAAKE

SARCON®


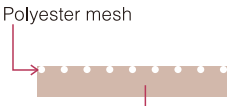

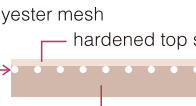
NON-SILICONE GAP FILLER TYPE

Highly Thermally Conductive and Non-Silicone materials

Features

- Contains no silicone.
- Lower thermal resistance.
- Available in sheets for scoring or die-cutting.

VARIETY

construction	NR-c / Plain Type	NR-Tc / with Mesh	NR-Hc / Hardened Surface	NR-HTc / Hardened Surface with Mesh
	 <p>Acrylate Resin</p> <p>100 up to 300N-c (Thickness: 1.0 to 3.0mm)</p>	 <p>Polyester mesh</p> <p>Acrylate Resin</p> <p>50 up to 200N-Tc (Thickness: 0.5 to 2.0mm)</p>	 <p>hardened top surface</p> <p>Acrylate Resin</p> <p>100 up to 300N-Hc (Thickness: 1.0 to 3.0mm)</p>	 <p>Polyester mesh</p> <p>hardened top surface</p> <p>Acrylate Resin</p> <p>50 up to 200N-HTc (Thickness: 0.5 to 2.0mm)</p>

TYPICAL PRODUCT PROPERTIES

Test Properties		Unit	NR-c	Test Method
Physical Properties	Construction	—	(See diagram above)	—
	Thickness*	mm	0.5 to 3.0	ASTM D374
	Specific Gravity	—	2.1	ASTM D792
	Hardness	Shore OO	53	ASTM D2240
	Color	—	Light Gray	Visual
Electrical Properties	Volume Resistivity	Ohm-m	1x10 ⁹	ASTM D257
	Breakdown Voltage	kV/mm	11	ASTM D149
	Dielectric Constant	50Hz	9.12	ASTM D150
		110Hz	8.55	
		300kHz	5.83	
	Dissipation Factor	50Hz	0.152	ASTM D150
		110Hz	0.135	
		300kHz	0.034	
Thermal Properties	Thermal Conductivity unit:W/m-k	Hot Wire	1.5	ASTM D2326
		Hot Disk	1.3	ISO 22007-2
	Recommended Operating Temp.	°C	-40 to +105	—
		°F	-40 to +221	

a) Hardness : the highest value by using Shore OO.

b) Thermal Conductivity : Measured by using Hot Wire method, refer to Fujipoly Test method "FTM P-1620". → See P.35

: Measured by using Hot Disk method, refer to Fujipoly Test method "FTM P-1612". → See P.35

* Some details of thickness. → See P.34

COMPRESSION FORCE

Compression Ratio	NR-c			
	50N-Tc	100N-c	200N-c	300N-c
10%	140 (31.7)	297 (67.3)	116 (26.3)	71 (16.1)
20%	330 (74.8)	548 (124.2)	271 (61.4)	168 (38.1)
30%	570 (129.1)	794 (179.9)	432 (97.9)	276 (62.5)
40%	835 (189.2)	1077 (244.0)	613 (138.9)	413 (93.6)
50%	1161 (263.0)	1316 (298.2)	826 (187.1)	568 (128.7)
Relaxing	904 (204.8)	445 (100.8)	310 (70.2)	226 (51.2)

c) Relaxing : Sustain 50% at 1 minute later.

d) Measured by using ASTM D575-91(2012) for reference. → See P.38

THERMAL RESISTANCE unit : K-cm²/W (K-in²/W)

Pressure	NR-c			
	50N-Tc	100N-c	200N-c	300N-c
100kPa 14.5psi	4.0 (0.62)	6.6 (1.02)	11.3 (1.75)	16.2 (2.52)
300kPa 43.5psi	3.8 (0.59)	5.1 (0.78)	8.5 (1.32)	12.5 (1.93)
500kPa 72.5psi	3.7 (0.57)	4.0 (0.61)	7.0 (1.08)	10.2 (1.58)

e) Measured by using ASTM D5470 equivalent (TIM tester 1300), refer to Fujipoly Test method "FTM P-3050". → See P.36

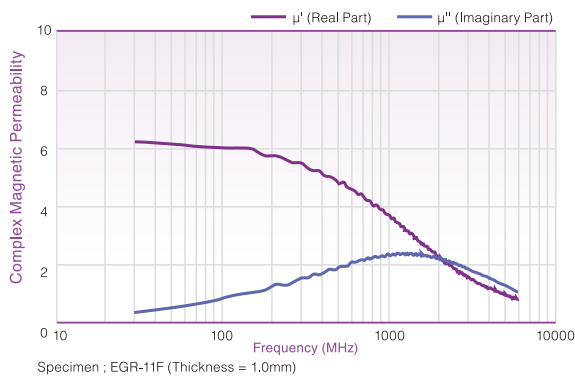
ELECTROMAGNETIC WAVE ABSORPTION TYPE

Silicone Gap Filler Pad for Absorption of Electromagnetic Wave

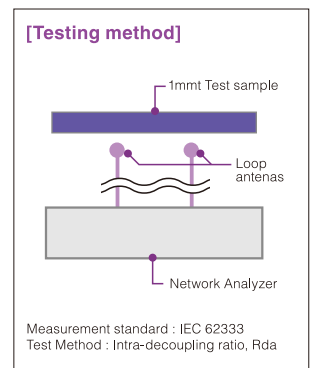
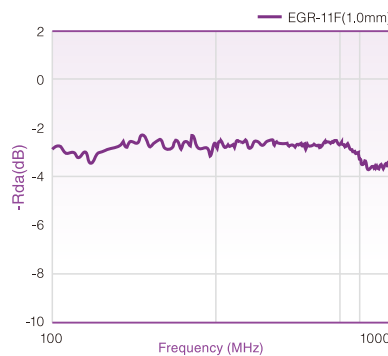
Features

- Effective to absorb and damp a wide range of electromagnetic waves.
- Also effective as a high performance thermal interface material.
- Easily filling small gaps of IC chip surface with soft gel texture.
- Good workability to simply insert the product between circuit board.
- Self-adhesive gel surface does not require any adhesive tape for assembly.
- Extremely low level of low molecular siloxane.

MAGNETIC CHARACTERISTICS



INTRA-DECOUPLING RATIO



TYPICAL PRODUCT PROPERTIES

Test Properties		Unit	EGR-11F	Test Method
Physical Properties	Thickness*	mm	0.5 to 1.5	ASTM D374
	Specific Gravity	—	3.1	ASTM D792
	Hardness	Shore OO	56	ASTM D2240
	Color	—	Dark Gray	Visual
Electrical Properties	Volume Resistivity	Ohm-m	1x10 ¹⁰	ASTM D257
	Breakdown Voltage	V/mm	500	ASTM D149
	Dielectric Constant	50Hz	28.33	ASTM D150
		1kHz	27.05	
		300kHz	26.09	
	Dissipation Factor	50Hz	0.031	ASTM D150
		1kHz	0.020	
		300kHz	0.005	
Thermal Properties	Thermal Conductivity unit : W/m-K	Hot Wire	1.0	ASTM D2326
		Hot Disk	0.8	ISO 22007-2
	Recommended Operating Temp.	°C	-30 to +120	—
		°F	-22 to +248	
	Flame Retardant	—	V-0	UL94

a) Hardness : the highest value by using Shore OO.

b) Thermal Conductivity : Measured by using Hot Wire method, refer to Fujipoly Test method "FTM P-1620". → See P.35

: Measured by using Hot Disk method, refer to Fujipoly Test method "FTM P-1612". → See P.35

* Some details of thickness. → See P.34

COMPRESSION FORCE

Compression Ratio	EGR-11F	
	50EG-11F	100EG-11F
10%	54 (12.2)	41 (9.3)
20%	288 (65.3)	225 (51.0)
30%	566 (128.2)	422 (95.6)
40%	879 (199.1)	590 (133.7)
50%	1132 (256.5)	813 (184.2)
Relaxing	846 (191.7)	408 (92.4)

c) Relaxing : Sustain 50% at 1 minute later.

d) Measured by using ASTM D575-91(2012) for reference. → See P.38

THERMAL RESISTANCE

unit : K-cm²/W
(K-in²/W)

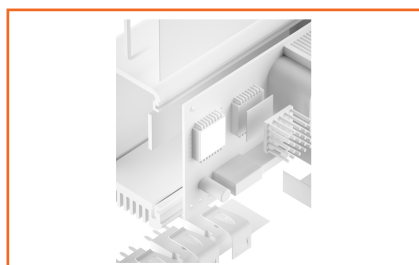
Pressure	EGR-11F	
	50EG-11F	100EG-11F
100kPa 14.5psi	6.8 (1.05)	9.6 (1.48)
300kPa 43.5psi	6.4 (0.99)	8.8 (1.36)
500kPa 72.5psi	6.1 (0.95)	8.4 (1.30)

e) Measured by using ASTM D5470 equivalent (TIM tester 1300), refer to Fujipoly Test method "FTM P-3050". → See P.36

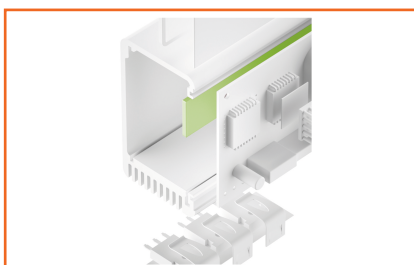


KØLEPROFILER

VORES PRODUKTSORTIMENT INKLUDERER:



THERMAL GREASE



GAP FILLER SILICONE-FREE



SARCON GENERELT



HIGH PERFORMANCE



EKSTRUDEDE



KØLEPROFILER

VI FØRER PRODUKTER INDENFOR KATEGORIERNE:



AUTOMATIK



**HVAC & BYGNINGS-
AUTOMATIK**



ELVARME

NEWTRONIC

Ove Jensens Alle 35 F
DK-8700 Horsens
Denmark
www.newtronic.eu
www.newtronic.dk
+45 7669 7090