

Fujipoly New Product Technical Information

NEW PRODUCT : **SARCON[®] SPG Series**

Highly Thermal Conductive, Electricity Insulative, High Viscosity type Silicone Compound (Putty)

1. Features;

Sarcon[®] SPG Series are highly conformable/thermally conductive, high viscosity type silicone compound (Putty). It provides a thermal solution for the recent trends of higher frequencies and integration in the development of electronic devices. **Sarcon[®] SPG Series** easily form and adhere to most of surfaces, shapes, and sizes of components. **Sarcon[®] SPG Series** make complete and reliable physical contact with the component and opposing surfaces. It provides handling properties that are superior to thermal grease & potting materials.

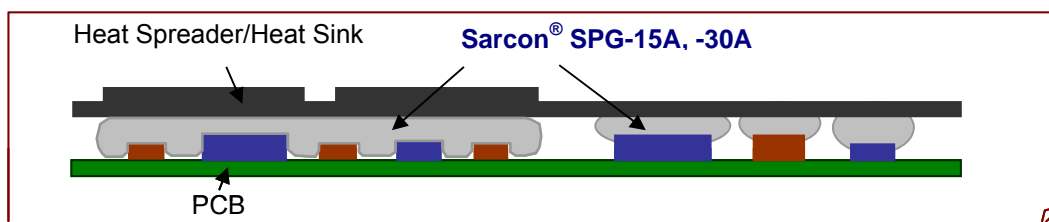
- 1) Suitable for filling large gaps and still provide superior thermal transfer.
- 2) Highly conformable with very low compression forces.
- 3) Has excellent vibration absorption capabilities.
- 4) Maintains all initial properties across a wide temperature range.
- 5) Requires no heat curing.
- 6) Will not cause corrosion on any metal surface.

2. Recommended application

Thermal transfer from heat-generating device to heat spreader or heat sink

3. Description

Material Code	Construction
Sarcon[®] SPG-15A SPG-30A	Low Fluidity type Silicone compound



4. Typical Properties

4-1. Typical Material Properties

Item	Unit	SPG-15A	SPG-30A	Test method
Specific Gravity	-	2.8	3.2	JIS K 6220
Viscosity	Pa·s	1800	3200	Fujipoly test method *1
Thermal Conductivity	W/m·K	1.5	3.2	Fujipoly test method *2
TGA Weight Loss	wt%	0.23	0.03	150°C/24h
Volume Resistivity	MΩ·m	1×10 ⁶	1×10 ⁶	JIS K 6249
Flame Retardancy	-	V-0 equivalent	V-0 equivalent	Fujipoly test method

*1: Accurate Rotary Viscometer (RV1)

*2: Hot Disk method tester (TPA-501)

4-2. Typical Product Properties

Item	Unit	SPG-15A	SPG-30A	Test method
Operating Temperature Range	°C	-40 to +150		
Thermal Resistance	°C·cm ² /W	5.3	2.3	ASTM D5470 equivalent *3

*3: Measurement area: 3.14 cm² (Gap: 1.0mm)

4-3. Typical Durability (Reliability)

Thermal resistance under Heat, Cold, Humid and Thermal Shock conditions.

SPG-15A	Initial	100 hrs	250 hrs	500 hrs	1,000 hrs
+70°C Aging	5.2	5.4	5.4	5.3	5.2
+150°C Aging	5.2	5.4	5.2	5.0	5.2
-40°C Aging	5.6	5.5	5.5	5.5	5.5
+60°C95%RH Aging	5.3	5.2	5.3	5.1	5.3
-40°C⇄+125°C Heat Shock	5.4	5.5	5.5	5.6	5.7

SPG-30A	Initial	100 hrs	250 hrs	500 hrs	1,000 hrs
+70°C Aging	2.3	2.3	2.3	2.3	2.3
+150°C Aging	2.3	2.5	2.5	2.4	2.5
-40°C Aging	2.3	2.5	2.5	2.4	2.4
+60°C95%RH Aging	2.3	2.2	2.3	2.2	2.2
-40°C⇄+125°C Heat Shock	2.2	2.7	2.6	2.5	2.6

Test method *Unit : °C·cm²/W based on ASTM D5470 equivalent method

*Measurement area: 3.14 cm²

*Filled SPG-15A material's weigh: 0.9g (1.0mm gap)

*Filled SPG-30A material's weigh: 1.0g (1.0mm gap)

Viscosity under Heat, Cold, Humid and Thermal Shock conditions.

SPG-15A	Initial	100 hrs	250 hrs	500 hrs	1,000 hrs
+70°C Aging	1700	1700	1900	1900	2000
+150°C Aging	1700	1900	1900	2100	2400
-40°C Aging	1700	1800	1700	1500	1700
+60°C95%RH Aging	1700	1600	1600	1500	1500
-40°C⇄+125°C Heat Shock	1700	1900	1900	2000	2500

SPG-30A	Initial	100 hrs	250 hrs	500 hrs	1,000 hrs
+70°C Aging	3200	3100	3100	3100	3000
+150°C Aging	3200	4000	4700	5600	7200
-40°C Aging	3200	3200	3200	3100	3000
+60°C95%RH Aging	3200	3500	3800	3700	3900
-40°C⇄+125°C Heat Shock	3200	3600	3700	3900	4600

Test method *Unit: Pa·s

*Accurate Rotary Viscometer (RV1)

5. Other

Notes:

- All Fujipoly test data in this document are based on Fujipoly test method and are believe to be accurate and reliable. Nevertheless, any Fujipoly test data shows typical product properties, and does not show the guaranteed product properties.
- Some silicone oil may exude from the product according to operating conditions.
- Some low molecular siloxane may vaporize from the product according to operating conditions.
- It is advisable to use the product under recommended operating condition. Some more silicone oil may exude from the product if it was used over the recommended condition.
- It is advisable to use the product under parallel and even compression. Some more silicone oil may exude from the product if it was used under excessive or partial stress.
- Products testing by the purchaser is recommended in order to meet expected results such as performance and application.

Statement of Lieu of Warranty:

All technical information and data in this document is based on tests and is believed to be accurate and reliable. Nevertheless, since the products described herein are not provided to conform with mutually accepted specifications and the use thereof is unknown, the manufacturer and seller of the product do not guarantee results, freedom from patent infringement, or suitability of the product for any application thereof. The manufacturer and seller of the product described in this document will provide all possible technical assistance and will replace any products proven defective. No statement or recommendation made by the manufacturer or seller not contained herein shall have any force of effect unless in conformity with an agreement signed by an officer of the seller or manufacturer. Product testing by the

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