

COHRLastic®

Silicone Rubber
Products





Silicone Rubber Products — Introduction

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COHRLastic® is the trade name for Saint-Gobain Performance Plastic (SGPPL) CHR's family of high performance silicone rubber products. Flexible, resilient silicone rubber has a unique chemical structure which gives it a high temperature stability and general inertness unavailable in any other elastomer. As a result, COHRLastic silicone rubber works in applications where no other material can be used.

Thermal stability

Silicone's physical properties are not adversely affected by prolonged exposure to temperatures from -100°F to +500°F. In addition, it can withstand intermittent exposure to even higher temperatures (*Figure A – Time/Temperature Resistance*). Silicone far out-distances other elastomers in resistance to thermal degradation and outperforms other elastomers in general service life, compression set resistance, electrical strength and non-stick properties. Silicone also has good chemical and fluid resistance. Although it may swell in contact with some solvents, the rubber will return to its original dimensions, usually without permanent deterioration, after the solvent has evaporated. At elevated temperatures, SGPPL silicone will outgas far less than other silicone

elastomers. And if it should burn, it produces a non-conductive white ash and odorless, non-toxic smoke.

Inertness

COHRLastic silicone rubber is odorless, tasteless and non-toxic. It contains no acid producing chemicals and therefore is non-corrosive and non-staining. Silicone rubber has excellent weatherability because it is unaffected by sunlight, ozone and/or extremely moist or dry conditions. It will not support the growth of fungus. The service life of COHRLastic silicone rubber in room temperature applications is virtually unlimited.

Silicone variations for specific applications

General purpose silicone rubber itself is versatile material. Beyond that, there are different types available for specific applications.

Silicone rubber compounded from a phenyl base will function down to -130°F, with specialty formulations that will allow -170°F usage. The benefit is greater strength, flexibility and compressibility at those temperatures than could be achieved with the more common methylvinyl compounds.

Applications involving high heat and pressure call for a general purpose silicone rather than a high strength variety. Reversion can result from high temperature and pressure, and the general purpose compounds have better resistance to this phenomenon.

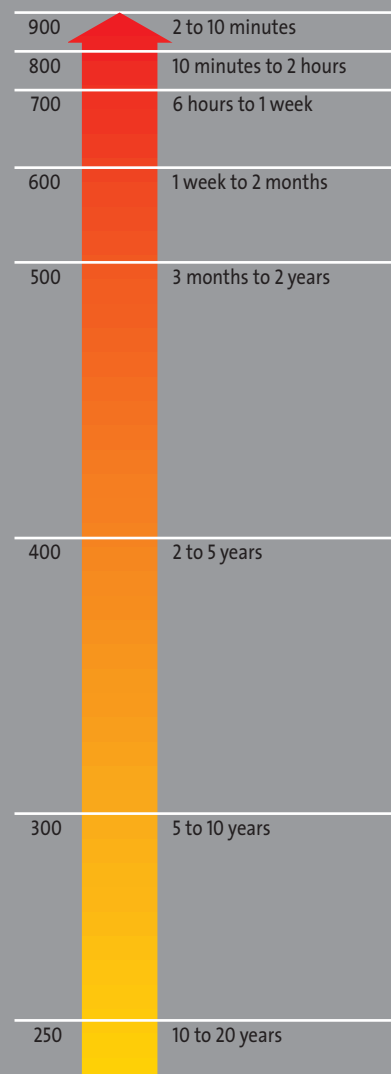
When fuel and solvents are present, a fluorinated silicone rubber is the best choice. This polymer affords maximum resistance to swelling and degradation associated with those fluids.

SGPPL CHR offers fluorosilicone sponge as a standard product. Solid sheet is available on special order.

High-strength silicones — those with a tensile strength of 1000 psi and higher — are the best choice for applications involving high elongation, flexing or tear resistance.

Figure A
Time/Temperature Resistance

Based on temperature for 8 hours daily until rubber can no longer be elongated 50%





Unique Silicone Properties

- ▶ Long service life
- ▶ Excellent thermal properties
- ▶ Superior ablative properties
- ▶ Compression set resistance
- ▶ Consistent electrical properties
- ▶ Low outgassing
- ▶ Chemically inert
- ▶ Release ability
- ▶ Flame retardance

Self-adhering silicone sheet

SGPPL CHR can apply pressure sensitive silicone or acrylic adhesive to standard sheets (36" x 36") of COHRLastic R10404, R10450, R10460, R10470, R10480 and R10490; COHRLastic 300 through 700; and COHRLastic 3320. Sheet thickness should be 1/16" or more for silicone adhesive and 1/32" for acrylic adhesive. SGPPL CHR's F12 silicone foam is available with a film supported acrylic pressure sensitive adhesive in thicknesses of 1/16" to 1".

The self-adhering sheets permit substantial savings because they are easy to apply, simplify production and eliminate the high cost of bonding. The silicone

adhesive withstands the same temperature extremes, -100°F to +500°F, as the silicone rubber sheet.

Acrylic adhesive has a temperature range of -20°F to +300°F and offers the advantage of twice the adhesion to steel and a longer shelf life than silicone adhesive.

The self-adhering sheets are protected with an easily removed release liner. Apply to a clean, dry, degreased surface. Contact SGPPL CHR for specialty materials.

Compression modulus

Compression modulus refers to the amount of pressure required to compress a piece of rubber to a certain per-

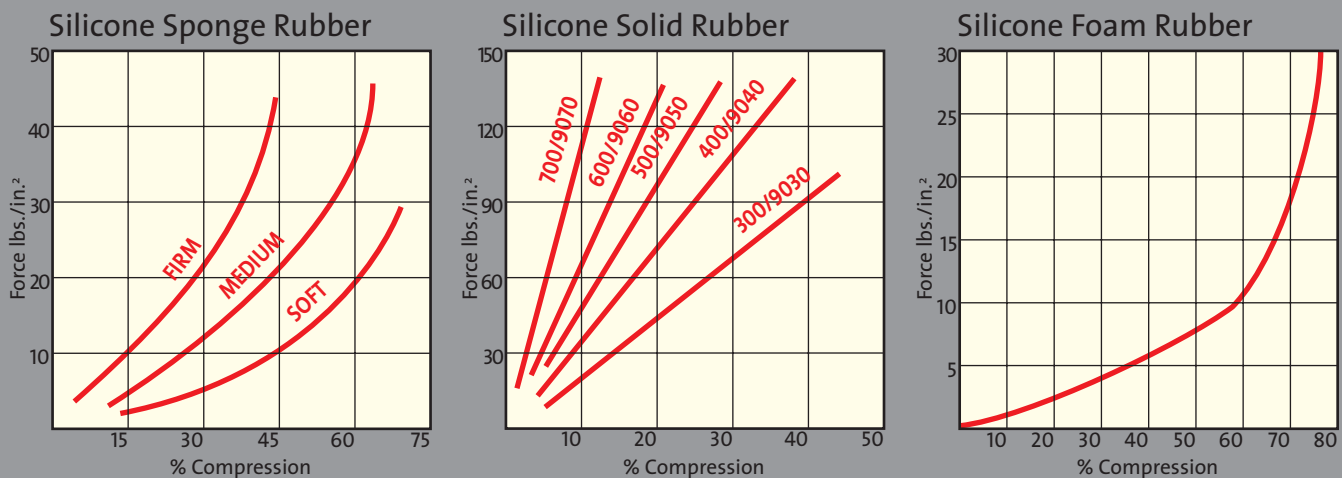
centage of original thickness. *Figure B – Compression Modulus* shows the values for silicone sponge, solid and foam.

Testing was performed on 1/2" thick, cylindrical specimens.

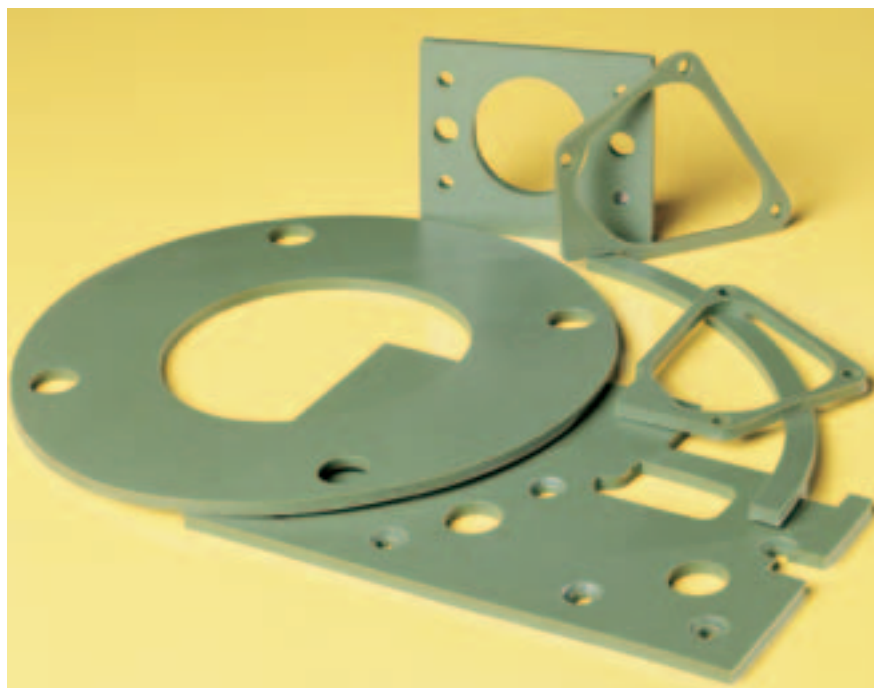
Problem solver

SGPPL CHR has a reputation for solving tough design problems based on over 50 years of silicone rubber experience. And we are committed to developing and supplying the highest quality products and technical assistance that meet your exact needs. So SGPPL CHR is the place to start whatever your silicone rubber requirements.

Figure B
Compression Modulus (at room temperature)



Silicone Solid Rubber



COHRLastic solid silicone rubber in square sheet and continuous length form has a smooth, blemish-free surface. It is available in degrees of hardness from relatively soft 30 durometer to the relatively hard 70 durometer on the Shore A scale. It is manufactured in different formulations to provide a choice of physical properties and cost considerations.

Series 300-700 COHRLastic general-purpose molded sheet is available in thicknesses up to $\frac{1}{2}$ " and it withstands temperatures from -100°F to $+500^{\circ}\text{F}$.

Series 9030 - 9070 COHRLastic is also general-purpose, but is produced in 36" wide continuous lengths for the most efficient utilization of material, minimizing waste. Standard thicknesses are $\frac{1}{32}$ ", $\frac{1}{16}$ " and $\frac{1}{8}$ ". Withstands temperatures from -100°F to $+500^{\circ}\text{F}$. Please consult plant for availability of additional thicknesses and colors.

Series 9200 high-performance COHRLastic provides excellent tensile strength and superior tear resistance. It is tougher and more resilient than general-purpose silicone. Standard thicknesses are $\frac{1}{32}$ ", $\frac{1}{16}$ " and $\frac{1}{8}$ ", and it withstands temperatures ranging from -100°F to $+400^{\circ}\text{F}$. A minimum thickness of .015" is available on a minimum quantity basis.

Red color is standard for general-purpose goods. Black or gray can be provided on a minimum quantity basis. The 9200 series is standard in gray, but clear or red can be supplied on a minimum quantity basis. Contact plant for minimums.

COMMON PROPERTIES													
Dielectric Strength	500 volts/mil (approx.)												
Thermal Conductivity (average)	$4.4 \times 10^{-4} \frac{\text{cal cm}}{\text{cm}^2 \text{ sec}} \quad 1.3 \text{ BTU in./hr. ft.}^2 \text{ }^\circ\text{F}$												
Specific Heat	0.3 BTU/lb. / $^\circ\text{F}$												
Linear Thermal Expansion (room temp. to +350 $^\circ\text{F}$)	$1.5 \times 10^{-4} \text{ in./in./}^\circ\text{F}$												
	GENERAL PURPOSE										HIGH PERFORMANCE		
Width/Sheet Size	36" x 36"					36" wide					36" wide		
	300	400	500	600	700	9030	9040	9050	9060	9070	9235	9255	9275
SPECIFIC PROPERTIES	red	red	red	red	red	red	red	red	red	red	gray	gray	gray
Color	red	red	red	red	red	red	red	red	red	red	gray	gray	gray
Thickness/Tolerance (inches)													
1/32	—	—	—	—	—	±.010	±.005	±.005	±.005	±.005	±.005	±.005	±.005
1/16	—	±.016	±.016	±.016	±.016	±.010	±.005	±.005	±.005	±.005	±.005	±.005	±.005
3/32**	—	±.016	±.016	±.016	±.016	±.010	±.010	±.010	±.010	±.010	±.010	±.010	±.010
1/8	—	±.016	±.016	±.016	±.016	±.010	±.010	±.010	±.010	±.010	±.010	±.010	±.010
3/16	—	±.016	±.016	±.016	±.016	—	—	—	—	—	—	—	—
1/4	±.031	±.031	±.031	±.031	±.031	—	—	—	—	—	—	—	—
5/16	—	±.031	±.031	±.031	±.031	—	—	—	—	—	—	—	—
3/8	—	±.031	±.031	±.031	±.031	—	—	—	—	—	—	—	—
1/2	±.031	±.031	±.031	±.031	±.031	—	—	—	—	—	—	—	—
ZZ-R-765, Class 2a & 2b (Grade)	—	40	50	60	70	—	40	50	60	70	—	—	—
ZZ-R-765, Class 3b (Grade)	—	—	—	—	—	—	—	—	—	—	30	50	70
AMS	—	3301	3302	3303	3304	—	3301	3302	3303	3304	3348	3347	3349
Durometer (Shore A ±5)*	30	40	50	60	70	30	40	50	60	70	30	50	70
Tensile Strength (PSI)*	800	700	700	700	700	850	900	900	700	750	1150	1200	1200
Elongation (%)*	550	400	350	200	160	500	500	400	200	160	800	600	350
Tear Strength (PPI)*	50	75	70	65	60	40	80	75	50	65	150	160	150
Compression Set (%) (after 70 Hrs. at 320 $^\circ\text{F}$)*	15	15	15	15	15	15	15	15	20	20	30	30	30
After Dry Heat Aging for 70 Hrs. at 437 $^\circ\text{F}$													
Durometer Change (Points, Shore A)	+5	+5	+5	+5	+5	+5	+5	+5	+5	+5	+10	+10	+10
Tensile Strength Change (%)	-15	-15	-15	-15	-15	-10	-10	-10	-10	-10	-15	-20	-25
Elongation Change (%)	-15	-15	-15	-15	-15	-20	-20	-30	-30	-30	-30	-30	-35
After Immersion in ASTM Oil #1 (high aniline point) for 70 Hrs. at 302 $^\circ\text{F}$													
Durometer Change (Points, Shore A)	-5	-5	-5	-5	-10	-5	-10	-10	-10	-10	-5	-5	-5
Tensile Strength Change (%)	-10	-10	-10	-10	-10	-10	-10	-10	-10	-10	+5	0	0
Elongation Change (%)	-10	-10	-10	-10	-10	-10	-5	-5	-5	-5	-5	-5	-5
Volume Change (%)	+10	+5	+5	+5	+5	+10	+5	+5	+5	+5	+5	+5	+5

* ASTM Test Method used: Durometer (D2240), Tensile Strength and Elongation (D412), Tear Strength (D624), Compression Set (D395). Die B Method B, ASTM D2000 + Fed. Spec. ZZ-R-765.

**Special order. Minimum quantities apply.



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Reinforced Solid Rubber



CF silicone solid rubber reinforced with fiberglass is a dimensionally-stable, durable material for press pads, belting and gasketing. It is available in six constructions.

CF3320, available in three thicknesses, was developed to meet AMS 3320. Consequently, 3320 has lubricating oil resistance and excellent compression set resistance.

CF4032 and **CF4050** are thin, flexible and abrasion-resistant for general-purpose use.

CF4420 is specially formulated for thermal stability and long life under extreme heat and pressure for extended dwell times. It resists reversion (i.e. softening and outgassing) longer than general purpose silicone. Throughout its useful life, 4420 has thermal stability for consistent thermal conductivity.

CF4444 has a specially formulated rubber compound to give better reversion resistance. The reinforcement is a special

crush-resistant fiberglass, making the product excellent for press pads in high-temperature and pressure lamination applications.

CF4451 is a fiberglass fabric coated with static dissipating silicone rubber having a surface resistivity of 1×10^5 Ohms – cm. Virtually eliminates static electric discharges which cause operator discomfort and can potentially damage electrical laminates.

CF4480 utilizes our most reversion-resistant silicone rubber compound. The product is designed for use in applications involving the tough combination of prolonged high-pressure confinement at temperatures in the range of 375°F to 650°F.

COMMON PROPERTIES														
Dielectric Strength	500 volts/mil (approx.)													
Thermal Conductivity (avg. from +75 to +350°F)	1.9 BTU in./hr. ft. ² °F													
Elongation at Break	Less than 10%													
Linear Thermal Expansion	4.7 x 10 ⁻⁶ in./in./°F (fiberglass) 1.5 x 10 ⁻⁴ in./in./°F (silicone rubber)													
CONTINUOUS LENGTH														
Width	36" wide					40" wide		38" wide			40" wide			
SPECIFIC PROPERTIES	4032	4050	3320			4420		4444			4451		4480	
Color	gray	gray	red			brown		red			black		dk.gray	
Thickness (inches)*	1/32	.050	1/16	3/32	1/8	.045	1/16	1/16	3/32	1/8	1/16	.078	1/16	
Tolerance (inches)*	±.005	±.005	±.005	±.010	±.010	±.005	±.005	±.005	±.010	±.010	±.005	±.005	±.005	
Fiberglass Thickness (inches)	.014	.014	.014	.014	.014	.007	.014	.135	.135	.135	.014	.014	.014	
Weight (ounces per square yard)*	35	57	65	94	124	48	65	72	104	144	69	89	65	
Fiberglass (% of weight)	37	23	20	14	10	13	20	20	14	10	20	16	20	
Weight Loss (4 hrs. at 400°F) (%)*	1.0	1.5	1.5	1.5	1.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.0	<1.0	<0.5	
Break Strength (warp) (PPI)*	300	300	300	300	300	225	300	400	400	400	300	300	300	
Diaphragm Burst Strength (PSI)*	750	750	750	750	750	500	750	800	800	800	750	750	750	
Durometer (Shore A)* **	81	75	74	66	65	78	74	79	72	67	76	74	81	

* ASTM Test Method used: Thickness/Tolerance, Weight, Weight Loss Break Strength and Diaphragm Burst Strength (D751), Durometer (D2240).

**Actual rubber durometer is 50 for 4032; 60 for 3320, 4420, 4444; 65 for 4451; 70 for 4480.

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Silicone Sponge Rubber

Flexible, compressible COHRLastic silicone closed cell sponge is designed for high-performance gasketing, thermal shielding, vibration mounts and press pads. It is available in six constructions.

R10470, a general-purpose silicone sponge, can be used in most applications.

R10480 has extremely low compression set and maintains its resiliency even under extended compression.

R10460 is flame retardant. When held in a vertical position and exposed to a 2,000°F flame for 12 seconds, there is no residential flame and less than a 10 second afterglow. Like R10480, it is especially resistant to compression set.

R10450 silicone sponge with fiberglass reinforcement is a unique construction.








It has the compressibility of sponge, plus dimensional stability in the X-Y direction. The absence of stretch contributes to the consistent size and shape of die cut parts and eliminates outward extrusion under pressure.

R10490 fluorosilicone sponge rubber can be used as a gasket where it is necessary to contain fluids that would degrade normal silicone sponge and

solid materials (special order basis).

R10404 closed-cell conformable silicone rubber sponge is designed for use where both conformability and heat transfer are necessary, such as between printed circuit boards and heat sinks, decal transfer or applying heat activated adhesives.

Specifications	R10470M	R10470F	R10480S	R10480M	R10460
AMS 3195	■	—	—	■	■
AMS 3196	—	■	—	—	—
MIL-R-6130 Type II, Grade B&C	■	■	■	■	■
MIL-R-46089	■	■	—	■	■
BOEING BMS 1-23	■	—	—	—	■
BOEING BMS 1-60 Type I, Grade B	—	—	—	—	■
Douglas DMS 1980, Grade 2	—	—	—	—	■
MIL-R-6130 Type II, Grade A	—	—	—	—	■

COMMON PROPERTIES									
Water Absorption (ASTM D1056)	Less than 5%								
Dielectric Strength	145 volts/mil (approx.)								
Thermal Conductivity (average)	$2.6 \times 10^{-4} \frac{\text{cal cm}}{\text{cm}^2 \text{ sec. } ^\circ\text{C}}$ 0.75 BTU in./hr. ft. ² °F								
Specific Heat	0.3 BTU/lb.°F								
Linear Thermal Expansion (room temp. to +350°F)	1.8×10^{-4} in./in.°F								
Outgassing (NASA testing)	Less than 1% weight loss (after 24 hrs. at 257°F in vacuum)								
CONSTRUCTION	GENERAL PURPOSE			LOW COMPRESSION SET		FLAME RETARDANT	REINFORCED	FLUORO-SILICONE	THERMALLY CONDUCT.
Width/Sheet Size	36" wide 	36" x 36" 		36" x 36" 		36" x 36" 	36" wide 	36" x 36" 	36" x 36" 
SPECIFIC PROPERTIES	R10470			R10480		R10460 ¹	R10450	R10490	R10404
	medium	medium ¹	firm	soft	medium	medium	medium	medium	firm ¹¹
Color	orange-tan / black ¹¹¹ / gray ¹¹¹			red	brown	dk blue	blue-gray	blue	lt green
Thickness/Tolerance (inches)									
1/32 / ±.010	■	■	**	—	—	—	—	■	■
1/16 / ±1/64	■	■	■	—	■	■	■	■	■
3/32 / ±1/64	**	**	**	—	**	**	**	■	**
1/8 / ±1/32	■	■	■	■	■	■	■	■	■
3/16 / 1/32	■	■	■	■	■	■	■	■	**
1/4 / +3/64 to -1/32	—	■	■	■	■	■	—	—	■
3/8 / ±3/64	—	■	■	■	■	■	—	—	—
1/2 / ±3/64	—	■	—	■	■	■	—	—	—
Compression Deflection (PSI)* (compressed 25% at room temperature)	10	10	16	5	10	10	15	15	20
Tensile Strength (PSI)*	90	90	130	50	75	75	125	180	120
Elongation at Break (%)*	150	150	200	75	125	125	<10	125	150
Compression Set (%)* (compressed 50% for 22 hrs. at 212°F)	25	25	25	5	5	5	25	25	15
Density (lb./in. ³)*	.017	.017	.025	.012	.017	.017	.020	.020	.040

¹ R10460 meets UL94 Flammability Classification 94HBF. R10470 Medium and R10460 meet UL 1570, 1571 and 1572. ¹¹ Extra-firm grade available as a special request item.

¹¹¹ R10470 Medium available in black and gray on a minimum quantity basis. R10470 Firm available in black on a minimum quantity basis. R10470 Firm not available in gray.

* ASTM Test Method used: Compression Deflection and Compression Set (D1056), Tensile Strength and Elongation (D412), Density (D3574). **Special order. Minimum quantities apply.

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Strip-N-Stick® Silicone Tape



Strip-N-Stick® tape provides all the benefits of silicone rubber in an easy-to-apply, pressure-sensitive adhesive tape form. Compressible and flexible, it can conform to irregular surfaces, wrap over cylinders or be formed to produce right angles. Applications include gasketing, vibration damping, and thermal insulation. The tape reduces the need for expensive die-cut-parts — you don't pay for the center. It also eliminates the high cost of bonding and will be slit to order from 1/2" and up.

100S is a silicone sponge with high temperature silicone adhesive.

200A is a silicone sponge with aggressive acrylic adhesive.

300AR is reinforced silicone sponge with aggressive acrylic adhesive. Its unique construction provides compressibility of sponge and dimensional stability

of fiberglass reinforcement. Stretch is eliminated, which contributes to the consistent size and shape of cut parts and inhibits outward extrusion under high pressure. It further permits close tolerance slitting.

440S is a 1/32" thick Shore A 30 durometer silicone solid with high-temperature silicone adhesive.

440A combines 30 durometer solid rubber with a high-adhesion acrylic adhesive for an excellent 1/32" thick gasket material. It provides high elongation and good conformability.

512AF uses SGPPL CHR's silicone foam along with film-supported acrylic pressure-sensitive adhesive.

Adhesive temperature range for Silicone PSA is -100°F to +500°F and for Acrylic PSA, -20°F to +300°F.

PROPERTIES							
	100S*	200A	300AR	440S	440A	512AF ¹	
Color	orange-tan	orange-tan	blue-gray	lt gray	lt gray	gray	
Base Material	R10470M	R10470M	R10450	—	—	F-12	
Silicone Rubber Material Type	sponge	sponge	fiberglass reinforced sponge	solid	solid	foam	
Adhesive Type (all with release liner)	silicone	acrylic	acrylic	silicone	acrylic	acrylic	
Density of Backing (lb./in. ³)*	.019	.019	.020	.040	.040	.007	
Adhesion to Steel (oz./in.)**	15	30	30	15	30	30	
Compression Deflection (PSI) (compressed to 75% of orig. thickness)*	10	10	15	45	45	3	
Tensile Strength (PSI)*	90	65	100 fabric break (PPI)	700	700	20 film break (PPI)	
Elongation (%)*	150	150	<10	650	650	75	
Compression Set (%) (compressed 50% for 22 hrs. at 212°F)*	25	25	25	30*	30*	5	
Thickness/Tolerance (inches)***							Roll Length (yards)
1/32 ±.010	—	—	—	■	■	—	20
1/16 ±1/64	■	■	■	—	—	■	10
3/32 ±1/64	■	■	****	—	—	****	10
1/8 ±1/32	■	■	■	—	—	■	10
3/16 ±1/32	■	■	■	—	—	■	5
1/4 +3/64 to -1/32	—	—	—	—	—	■	5
3/8 ±3/64	—	—	—	—	—	■	5
1/2 ±3/64	—	—	—	—	—	■	5
Width (inches)	1/2 to 35	1/2 to 35	1/4 to 35	1/2 to 20	1/2 to 20	1/2 to 35	

¹ Meets UL 1570, 1571 and 1572.

* ASTM Test Method used: Density of Backing (D3574), Adhesion to Steel (D1000), Compression Deflection and Compression Set (D1056), Tensile Strength and Elongation (D412).

Adhesive shelf-life when stored at 70° to 90°F at less than 50% humidity: silicone adhesive on sponge – 6 months, silicone adhesive on solid – 6 months, acrylic adhesive on sponge – 2 years. To maximize shelf-life, store at 40° to 50°F. *Thickness tolerances for backing material only. ****Special order. Minimum quantities apply.

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F-12 Silicone Foam



Low-density, flame-retardant COHRLastic silicone foam yard goods provide outstanding performance for industries ranging from aviation and mass transit to automotive, electronics, construction and furniture.

In addition to a UL94V-0 listing in thicknesses down to 1/16", it withstands a 2100°F flame for more than 10 minutes without burning through in thicknesses down to 3/8".

The material, which has a nominal density of 12 pounds per cubic foot, generates very little white smoke.

Non-corrosive for use with metals and in hostile environments, it has low compression set. Among its applications are fireblocks, thermal barriers, noise and vibration dampeners, insulation and high-performance gaskets or seals.

For the aviation, automotive and mass transit industries, it offers a high degree of design flexibility. Lightweight and easy to process, it can be laminated to seat cover fabrics and carpeting as a backing for added flame resistance in passenger compartment furnishings.

The material has similar uses in institutional and residential furnishings, marine and lighting applications. It offers properties valuable in flame retardant backings for floor, wall and furniture coverings; fire-wall and thermal barriers or insulation, padding and gasketing for commercial and private marine vehicles; or gasketing and sealing in high-intensity light fixtures and electronic components in medical, computer and business equipment.

Colored gray, it is supplied in 18" and 36" wide roll stock. Thicknesses are shown in the table below. It is available plain or, on special order, laminated to any of a wide range of substrates.

Because of the unique nature of COHRLastic foam, SGPP L CHR has undertaken a rigorous testing program which is performed at outside independent laboratories.

The tests document the flame resistant properties and low levels of toxicity and smoke generation as well as mechanical and electrical properties. Details are on file at SGPP L CHR.

Performance Tests	Units / Values
Flame Spread Index, Radiant Panel, ASTM D3675	(Is) / 12.1
Limiting Oxygen Index, ASTM 2863	(%) / 34.0
Dielectric Constant, ASTM D150	at 100 Hz / 1.31 at 1 KHz / 1.30 at 1 MHz / 1.32
Arc Resistance, ASTM D495	(sec.) / 123
Insulation Resistance, ASTM D257	(10 ⁹ ohms) / 2.3
FDA Extractables, 21 CFR177 .2600	Pass
Noise Reduction Coefficient, ASTM C423, 84a paragraph 13.2	NRC / 0.3
Products Combustion, ASTM E662, Hydrogen Cyanide	PPM / 0
Boston Fire Dept. Chair Test, January 1986	In compliance
FAR 25.853(a) and (b)	Pass
UL94V-0	Pass
Smoke Density, ASTM E662, 4 min., smoldering mode	35.0
4 min., flaming mode	23.0
Flame Spread Index, ASTM E162	11.5



PROPERTIES*	36" wide						18" wide	
Width								
Color	gray**							
Thickness/Tolerance (inches)	1/16	1/8	3/16	1/4	3/8	1/2	3/4	1
Tolerance (inches)	±1/64	±1/32	±1/32	+3/64 to -1/32	±3/64	±3/64	±0.075	±0.1
Surface Description ¹	Textured on one side							
Tensile Strength (PSI) ¹	25							
Elongation at Break (%) ¹	60							
Density (lb./ft. ³) ¹	12							
Temperature Range (°F)	-60 to +400							
Vertical Burn (seconds) ¹	<3							
Compression Set (%) (compressed 50% for 22 hrs. at 212°F) ¹	10							
Thermal Conductivity (BTU-in./hr.-ft. ² -°F[K factor]) ¹	0.42							
Compression Deflection (PSI) ¹	3.0							

* Stated properties are based on a 1/4-inch slab of material. Values are typical. **Standard color. Other colors available on a minimum order basis.

¹ Test Method used: Surface Description (visual), Tensile Strength and Elongation Break (ASTM D412), Density (ASTM D3574), Vertical Burn (UL94V-0 and FAR 25.853b, Compression Set and Compression Deflection (ASTM D1056), Thermal Conductivity (ASTM C177).

Tests, claims, representations and descriptions regarding flammability are based on standard laboratory tests and, as such, may not be reliable for determining, evaluating, predicting or describing the flammability or burning characteristics under actual fire conditions, whether used alone or in combination with other products. Accordingly, each potential user should make an individual determination whether the flammability or burning characteristics of the product are suitable for the purpose intended by the user.

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Thermally- and Electrically-Conductive Products



Conductive silicones expand the use of our products into the electronic assembly market. By the use of special fillers, silicone can be made thermally or electrically conductive.

TF1818 is a smooth, calender-coated product offering greater conformability, cut-through resistance and dielectric strength; while maintaining a low level of thermal resistance.

TF1867, 1869, 1877, 1879 and the **Furo 400 Series** are thermally-conductive coated fabrics providing thin, cost-effective heat transfer capability. All are obtainable plain or with thermally-conductive pressure-sensitive adhesive on one side. The line is available in die-cut configurations. Consult your nearest SGPPL CHR distributor for pricing.

TC100, an unsupported, thermally-conductive solid silicone available in several

thicknesses, provides thermal and mechanical protection to electronic devices.

TC100U, in the uncured state, is an effective system for bonding printed circuit boards, heat sinks and electronic components to a variety of substrates. Refrigerated storage is required.

EC102 electrically-conductive silicone performs three distinct functions: the carbon filler in allows it to act as a low amperage conductor; it shields RF and EM interference; and it protects against electrostatic discharge.

See page 7 for **R10404** thermally-conductive sponge.

PROPERTIES	SILICONE-COATED FABRICS							THERMALLY-CONDUCTIVE SOLID SILICONE		ELECTRICALLY-CONDUCTIVE SILICONE	
	18" wide		36" wide					18" wide		36" wide	36"x 36"
Width/Sheet Size											
	1818	1867*	1869	1877*	1879	407*	409*	TC100	TC100U	EC102	
Color	gray	gray	gray	lt green	lt green	gray	gray	lt blue	white	black	black
Thickness (inches)	.018	.0075	.0095	.0070	.009	.007	.009	.025 1/32 1/16	.015 1/32 1/16	.020 1/32 1/16	1/2***
Tolerance (inches)	±.003	±.001	±.001	±.001	±.001	±.001	±.001	—	—	—	—
Break Strength (PPI)	60	100	100	100	100	100	100	250	200	700	700
Specific Gravity	—	—	—	—	—	—	—	2.6	2.6	—	—
Durometer (Shore A)	—	—	—	—	—	—	—	—	—	60'	60'
Elongation (%)	<5	<5	<5	<5	<5	<5	<5	200	350	200'	200'
Tear Strength (PPI)	—	—	—	—	—	—	—	—	—	60'	60'
Hardness (Shore A)	84	85	85	85	85	85	85	65	65	—	—
Dielectric (volts total)	9000	2500	3000	3000	3500	3500	4000	250* (VPM)	250* (VPM)	—	—
Volume Resistivity (ohm-cm)	1 x 10 ¹⁴	1 x 10 ¹⁴	1 x 10 ¹⁴	1 x 10 ¹⁴	1 x 10 ¹⁴	1 x 10 ¹⁴	1 x 10 ¹⁴	5 x 10 ¹⁵	1 x 10 ¹⁴	5'	5'
Thermal Conductivity (W/m-K)	1.0	0.8	0.8	1.2	1.2	0.9	0.9	1.3	1.3	—	—
Thermal Impedance (°C in. ² /W) (ASTM E1530)	0.71	0.37	0.44	0.23	0.29	0.31	0.39	1.25	1.25	—	—
UL94 Rating (File: E57750)	VO	VTM-O	VTM-1	VO	VO	VO	VO	HB	—	—	—
Compression Set (%) (22 hrs. at 212°F)	—	—	—	—	—	—	—	—	—	20'	20'
Temperature Range (°F)	-80 to +400										

*Thermally-conductive acrylic PSA is available for 1867, 1877 and Furo 407 and 409. Thermally-conductive silicone PSA is available for 1877 and 1879. PSA adds approx. .06°C/W to the thermal resistance of each product.

Provided on a minimum order basis. *Sheets may be split to other thicknesses. Consult factory.

† ASTM Test Method used: Tensile Strength and Elongation (D412), Durometer (D2240), Tear Strength (D624, Die B), Compression Set (D395), Volume Resistivity (D991).

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Silicone-Coated Fabrics

SGPPL CHR standard COHRLastic silicone coated fabrics, available from stock, have silicone rubber dispersion coated on both sides of fiberglass. They are thin and tough, dimensionally stable yet flexible. Their many applications include belting, vacuum blankets, thermal shielding and diaphragms. The 1000 series has superior electrical properties and good abrasion resistance, while the 3000 series has a smoother, more compressible coating for gasketing applications.

The fabrics shown here are standard products and reflect only a small portion of the many coated fabrics that SGPPL CHR is capable of manufacturing. By



varying the glass style and rubber formulation, SGPPL CHR can provide the user with the coated fabric best suited to the application. Such special order constructions have included one-side coat-

ed, reversion-resistant, flame-retardant coating, and alternative base fabrics. There will be minimum order quantities imposed on non-standard constructions. SGPPL CHR welcomes all inquires.

Width	GENERAL-PURPOSE, ELECTRICAL GRADE (dielectric strength 1,000 volts/mil, approx.)				ABRASION RESISTANT	LOW-TEMPERATURE FLEXIBILITY		
	36" wide					36" wide	36" wide	
PROPERTIES*	1010	1015	1025	1032	1115	3010	3016	3032
Color	white	white	white	white	red-brown	white	white	white
Thread Count (warp x fill)	60 x 58	42 x 32	20 x 18	20 x 18	42 x 32	60 x 58	42 x 32	20 x 18
Fabric Thickness (inches)	.0038	.007	.016	.016	.007	.0038	.007	.016
Total Thickness (inches)	.010	.017	.025	.032	.015	.010	.016	.032
Tolerance (inches)*	±.001	±.002	±.003	±.003	±.002	±.001	±.002	±.004
Elongation (%)*	<10	<10	<10	<10	<10	<10	<10	<10
Average Weight per Square Yard (ounces)*	11	16	22	29	15	13	19	33
Breaking Strength (warp x fill) (PPI)*	120 x 120	200 x 180	350 x 300	250 x 300	200 x 180	175 x 150	350 x 275	400 x 350
Burst Strength (PSI)*	300	500	800	800	500	300	500	800
Tear Strength (warp x fill) (Kg)*	6 x 4	13 x 13	18 x 18	18 x 18	10 x 8	6 x 4	13 x 13	18 x 18
Specification AMS 3315	■	■	■	■	■	■	■	■
Temperature Range (°F)	-65 to +500	-65 to +500	-65 to +500	-65 to +500	-65 to +500	-170 to +500	-170 to +500	-170 to +500

* Test Method used: Thickness/Tolerance and Elongation (ASTM D374), Weight (FTM 191 5041), Breaking Strength (ASTM D1000), Burst Strength (FTM 191 5122), Tear Strength (FTM 191 5132).

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Saint-Gobain Performance Plastics (SGPPL) offers a wide range of products, including Fluorglas® PTFE and silicone-coated fabrics, CHR® Pressure-sensitive Adhesive Tapes, ThermaCool® Thermally Conductive Products®, PTFE sheet and film, custom film coatings and release liners.

These engineered products are used primarily by original equipment manufacturers (OEMs) in many fields, including fuel processing industries, aerospace, transportation, electronics, healthcare and industrial equipment. Our combined expertise from our Tapes, Film and Coatings facilities gives you the assurance of a team approach to solving your critical application questions.

Please contact your nearest Saint-Gobain Performance Plastics representative for more detailed application and product information.



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Cell Size: COHRLastic® silicone sponge products may show variations in cell size. This is not a cause for rejection if CHR® finished product standards are met.
Strip-N-Stick® Dimensions: Upon removal of the liner, the potential exists for dimensional changes as the sponge relaxes.
Specifications subject to change without notice. COHRLastic®, Strip-N-Stick® and CHEMFAB® are Registered Trademarks.