

Technical Data Sheet

Silicone Rubber Flame Resistant



Material

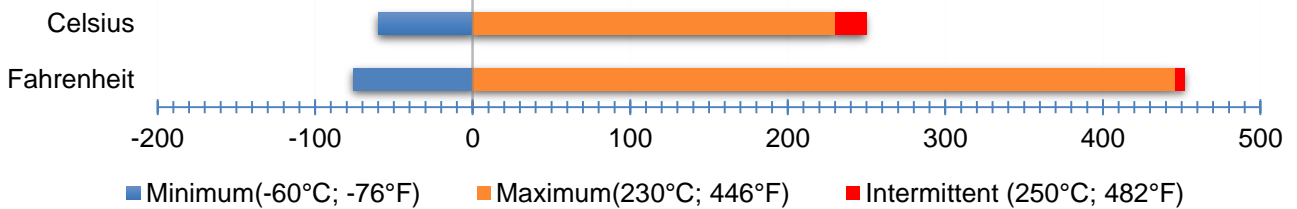
UL94V0 Lightweight closed cell silicone sponge/foam



Available Grades

SILV0150-SILV0600

Temperature Range



General Information

These products meet the flammability requirements of FAR 25/JAR 25/CS 25 Appendix F, Part 1, (a)(1)(iv) and (a)(1)(v) horizontal flammability test and Automotive Standard PART 571FMVSS302.

The sponge is closed cell with low water absorption and dust ingress protection up to IP65, subject to design and meets UL94V0 at 1.5mm and above.

Environmental Resistance

Silicone rubber products have an excellent resistance to:

- Ozone
- Oxidation
- Ultraviolet light
- Corona discharge
- Cosmic radiation
- Ionising radiation
- Weathering in general

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SILEX SILICONES LTD

Silex Ltd, Unit 10, Oakhanger Farm Business Park, Oakhanger, Bordon, Hampshire, GU35 9JA. Tel 00 44 1420 470360, Fax 00 44 1420 472802

E-Mail: sales@silex.co.uk, Website: www.silex.co.uk, Registered company number: 1951973. Place of registration: England & Wales. Directors: K Soudah, S.J. Fearn, P Millson, Ray Soudah

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General Characteristics

Test	Result	Standard
Brittle Point	-80°C (-112 °F)	ASTM D746
Radiation Resistance	>10 ⁵ Grays (10 ⁷ Rads) typical	
Water Absorption	< 3%	ASTM D1056

Accreditations

- FAR 25/JAR 25/CS 25 Appendix F, Part 1, (a)(1)(iv)(a)(1)(v) horizontal flammability test
- Automotive Standard PART 571FMVSS302
- REACH compliant and ROHS compliant
- Capable of meeting several ASTM D1056 and AMS3195 certifications

Availability Format

- Cord, section, strip, profiles
- Joined rings and gaskets

Typical Applications

- Automotive
- Aerospace
- Electronics
- Energy

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Mechanical Properties

		SILVO 150	SILVO 220	SILVO 300	SILVO 390	SILVO 450	SILVO 600	
Property	Units	Typical Value	Typical Value	Typical Value	Typical Value	Typical Value	Typical Value	Test Method
Density *	kg.m ³ lb.ft ³	150 10.0	220 13.7	300 19.4	390 24.3	450 28.1	600 37.5	BSENISO 845
HarCompression Stress 25% Strain **	kPa PSI	19.1 2.7	24 3.5	37 5.4	52 7.5	73 10.6	112 16.2	ASTM D2240
Compression Stress 40% Strain ***	kPa PSI	40 5.8	50 7.3	80 13.1	120 17.4	160 23.2	250 36.3	BSENISO 33886 Part 1,2
Tensile Strenght	kPa PSI	170 24.7	280 40.6	305 44.1	445 64.3	675 97.8	830 120.4	BSENISO 1798 ASTM D412
Elongation to failure	%	110	130	90	100	90	90	BSENISO 1798
Compression Set 50% Compression 24hrs Recovery, 22 hrs 70°C (158°F)	%	<1	<1	<1	<1	<1	<1	BSENISO 1856
22 hrs @ 100°C (212°F)	%	1	2	3	3	3	2	BSENISO 1856

Extra Information

- *Density measured on 25 mm diameter cord sample. The density of samples of different sizes.
- ** Compression stress measured on samples as defined in BSENSISO 3386 and ASTM D1056 respectively
- The compressive stress on samples of different dimensions may vary from that quoted here.
- For further information about physical properties for other sample sizes, please contact the sales department.

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Flammability Properties

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Property	Units	Typical Value	Typical Value	Typical Value	Typical Value	Typical Value	Typical Value	Test Method
UL94 Vertical Burn	Minimum Thickness	V-0 @ 1.5	V-0 @ 1.5	V-0 @ 1.5	V-0 @ 1.5	V-0 @ 1.5	V-0 @ 1.5 (Black) V-0 @ 3.0 (NC)	UL94
FAR 25 App. F sec A 1 (i) & (ii)	Minimum Thickness	1.5	1.5	1.5	1.5	1.5	1.5	FAR 25 App. F sec A 1 (i) & (ii)
Limiting Oxygen Index	%			43.9		→	42.8	EN ISO589-2 O1
Flame Spread (CFE)	kW/m2	-	-	2mm = 26.57 25mm = 20.87				ISO 5658-3
Smoke/Toxicity 50 kW/m2	Ds(4)	-	-	2mm = 55 25mm = 57				
	V0F4 min	-	-	2mm = 159 25mm = 154				EN ISO 5659-2
	CITg	-	-	2mm = 0.03 25mm = 0.04				
Cone Calorimeter kW/m2	MARHE kW/m2	-	-	2mm = 76.67 25mm = 68.14				ISO 566-1
Smoke Density kW/m2	Ds Max	-	-	2mm = 18 25mm = 31		→	2mm = 12 25mm = 33	EN ISO 5659-2
Toxicity 600°C	CITNLP	-	-	2mm = 0.02 25mm = 0.05		→	2mm = 0.01 25mm = 0.04	

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EN 45545-2 Rating

		Thickness	SILVO 150	SILVO 220	SILVO 300	SILVO 390	SILVO 450	SILVO 600
Property	Description							
R1	Interior surfaces (& non-listed interior products >0.2m2)	2 – 25	-	-	HL2	-	-	-
R2	Limited Surfaces	2 - 25			HL3	-	-	-
R3	Strips	2 - 25	-	-	HL3	-	-	-
R7	Gangway, surfaces, ducting (and non-listed exterior products >0.2m2)	2 – 25	-	-	HL2	-	-	-
R8	Roof (external)	2 – 25	-	-	HL2	-	-	-
R10	Floors and cavity wall	3 - 50	HL3	-	-	-	-	-
R17	Cab Housing	2 - 25	-	-	HL2	-	-	-
R21	Seating & mattress materials	3 - 50	-	-	-	-	-	-
R23	Interior seals (& non-listed interior products >0.2m2)	2 - 25	HL3 (3mm – 50mm)	HL3	HL3	HL3	HL3	HL3
R23	Exterior seals (& non-listed interior products >0.2m2)	2 - 25	HL3 (3mm – 50mm)	HL3	HL3	HL3	HL3	HL3

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Flame Resistance to NFPA 130

		SILVO 150	SILVO 220	SILVO 300	SILVO 390	SILVO 450	SILVO 600	Test Method
Property	UNITS							
Average Flame Propagation	Inches	1.6			→		0.9	ASTM C1166
Surface Flammability	Is (Flame index speed)	3mm = 15 30mm = 25			→		2mm – 25 30mm - 15	ASTM E 162
Smoke Generation (Flaming Mode)	Ds (1.5)	3mm = 8 30mm = 11			→		3mm = 7 30mm = 7	ASTM E 662
	Ds (4.0)	3mm = 14 30mm = 30				3mm = 16 30mm = 33		
Smoke Generation (Non-Flaming Mode)	Ds (1.5)	3mm = 5 30mm = 10			→		3mm = 2 30mm = 1	ASTM E 662
	Ds (4.0)	3mm = 13 30mm = 29				3mm = 13 30mm = 13		
TOXIC GAS	NA	3mm = PASS 30mm = PASS			→		3mm = PASS 30mm = PASS	Bombardier SMP 800-C

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