

Technical Data Sheet

Silicone Rubber Sponge

General Purpose Grade



Material

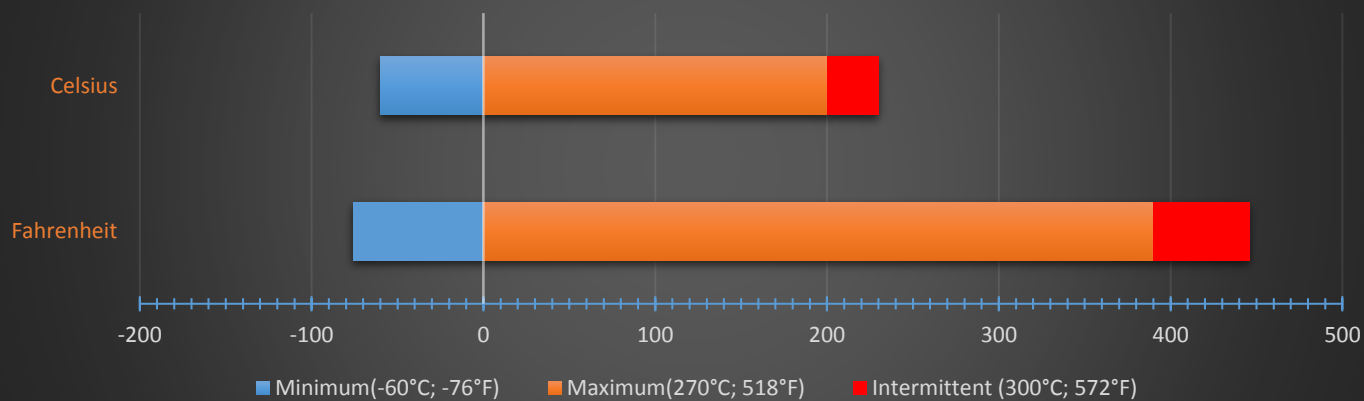
Closed cell Silicone Sponge

Available Grades

SIL10, SIL16, SIL20, SIL24, SIL33

Temperature

Temperature Range



General Information

The density range in white has been approved by the WRAS (Water Regulations Advisory Service) for use in contact with potable water at temperatures up to 85°C (185°F).

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.

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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Availability Format

EXTRUSIONS

- ✓ Cord, section, strip, profiles
- ✓ Joined rings and gaskets
- ✓ Pressure sensitive adhesive backing
- ✓ Full range of standard colours
- ✓ Capability to colour match

SHEETING

- ✓ Supplied in rolls or individual sheets
- ✓ Widths up to 1000mm
- ✓ Pressure sensitive adhesive backing
- ✓ Punched/Water jet gaskets
- ✓ Full range of standard colours
- ✓ Capability to colour match

Typical Applications

- ❖ Automotive
- ❖ Electronics
- ❖ Energy
- ❖ Construction
- ❖ Heating and Ventilation (HVAC)
- ❖ Industrial
- ❖ Insulations
- ❖ Lighting and Marine

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SILEX SILICONES LIMITED

Unit 10, Oakhanger Farm Business Park, Oakhanger, Hampshire, GU35 9JA, Tel 0044 1420 470 360, Fax 0044 472 802
E-Mail: info@silex.co.uk, Website: www.silex.co.uk, Registered in England No. 1951973
Directors: N J R Soudah, S J Fearn

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Mechanical Properties

EXTRUSIONS		SIL 10	SIL 16	SIL 20	SIL 24	SIL 27	SIL 33	
Property	Units	Typical Value	Typical Value	Typical Value	Typical Value	Typical Value	Typical Value	Test Method
Density *	kg.m ³ lb.ft ³	200 12.5	250 15.5	300 19	400 25	450 28	530 33	BSENISO 845 ASTM D3574
Hardness **	Shore OO Shore A	35 ±5 <5	42 ±5 5	55 ±5 15	65 ±5 17	70 ±5 24	80 ±5 30	ASTM D2240
Compression Stress 40% strain ***	kPa PSI	50 7.3	90 13	120 17.4	165 24	230 34	470 68	BSENISO 3386 part 1, 2
Compression Stress 25% strain	kPa PSI	28 4	38 5.5	52 7.5	83 12	105 15	214 31	ASTM D1056
Tensile Strength	MPa PSI	0.6 87	0.6 87	0.75 108	0.75 108	1.5 217	2.0 290	BSENISO 1798 ASTM D412
Elongation to failure	%	140	145	120	120	130	130	BSENISO 1798 ASTM D412
Compression Set 50% Compression 24hrs Recovery. 22hrs @ 70°C (158°F)	%	5.0	3.8	3.6	3.0	3.0	3.0	BSENISO 1856
Compression Set 50% Compression 24hrs Recovery. 22hrs @ 100°C (212°F)	%	6.7	4.8	4.4	4.3	4.3	6.0	BSENISO 1856

In-house capabilities for extensive industry specific testing available on request

*Density measured on 25mm diameter cord sample. The density of samples of different sizes will be different from that stated here.
 **Hardness measured on 10mm thick samples. At less than 10mm the measured hardness will increase with density.
 ***Compression Stress measured on samples as defined by BSENISO 3386. The compressive stress on samples of different dimensions, especially thickness, may vary from that quoted here. For further information about physical properties for other sample sizes, please contact the technical department.

It is not possible to perform a Shore A hardness test on sponge material. These values are provided as a guideline for comparison to solid materials and as such are not designed for use in specifications.
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Property	Units	Typical Value	Typical Value	Typical Value	Typical Value	Typical Value	Typical Value	Test Method
Density *	kg.m ³ lb.ft ³	200 12.5	250 15,6	320 20.0	400 25.0	460 28.7	550 34.3	BSENISO 845 ASTM D3574
Hardness **	Shore OO Shore A	35 ±5 <5	42 ±5 5	55 ±5 15	65 ±5 17	70 ±5 24	80 ±5 30	ASTM D2240
Compression Stress 40% strain	kPa	50	90	120	165	230	470	BSENISO 3386 part 1, 2
Compression Stress 25% strain	PSI	4.6	6.4	8.3	11.9	17.4	34.8	ASTM D1056
Tensile Strength	MPa PSI	0.6 87	0.6 87	0.75 108	0.75 108	1.5 217	2.0 290	BSENISO 1798
Elongation to failure	%	140	145	120	120	130	130	BSENISO 1798
Compression Set 50% Compression 24hrs Recovery. 22hrs @ 70°C (158°F)	%	15.0	12.0	12.0	10.0	10.0	9.5	BSENISO 1856
Compression Set 50% Compression 24hrs Recovery. 22hrs @ 100°C (212°F)	%	18.0	14.5	14.0	12.0	12.5	12.0	ASTM D1056
Water Absorbtion	<5%	<5	<5	<5	<5	<5	2	ASTM D1056

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General Characteristics

Test	Result	Standard
Brittle Point	-80°C (-112 °F)	ASTM D746
Limiting Oxygen Index	24.0 %	BS 2782 Part 1
Thermal Conductivity	0.24 W.m ⁻¹ .K ⁻¹	VDE 0304
Radiation Resistance	>10 ⁵ Grays (10 ⁷ Rads) typical	
Dielectric Strength	23 kV.mm ⁻¹	VDE 0303
Dielectric Constant	2.9	VDE 0303
Dissipation factor	3x10 ⁻⁴	VDE 0303
Volume Resistivity	3x10 ¹⁵ Ω.cm	VDE 0303

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 ROSH compliant

Additional Information

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