



Certificate No. 0372

TECHNICAL DATA SHEET

SILICONE RUBBER SPONGE

GRADES: SIL10, SIL16, SIL24, SIL33

PRODUCT FORM

Profile extrusions, sheeting, cord, joined rings, punched forms and pressure sensitive adhesive backing.

APPLICATIONS

Cellular silicone rubber is suitable where a soft, easily deformed rubber is required, for example, for high temperature seals and gaskets. The sheets and punched parts are all available with pressure sensitive adhesive backing to ease assembly.

THERMAL PROPERTIES

The range is suitable for continuous use at temperatures up to +200°C. See our "HT" grades for use up to + 270°C. They are also suitable for use at temperatures as low as -60°C.

CHEMICAL COMPOSITION

This range of polydimethylsiloxane have been "free-blown" with a chemical blowing agent and crosslinked with an organic peroxide. The cellular structure is produced without the use of CFC's thus making less damaging to the environment.

GENERAL INFORMATION

Meets the flammability requirements of FAR 25/JAR25/CS 25 Appendix F, Part 1(a)(1)(iv) and (a)(1)(v) horizontal flammability test and Automotive Standard Part 571FMVSS302.

Closed Cell – can be compressed to meet IP 65
Brittle Point -80°C ASTM D746
Limited Oxygen Index 24.0% BS 2782 Part 1
Thermal Conductivity $6.4 \times 10^{-2} \text{W.m}^{-1}.\text{K}^{-1}$ BS 874 Part 2
Radiation Resistance $>10^5$ Grays (10^7 Rads) typical

SILEX Limited

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S I L I C O N E S ₀

MOISTURE ABSORPTION

The range has a very low degree of moisture absorption. Mechanical properties shows little change even after long periods of immersion.

PIGMENTABILITY

The product range is available in off-white as standard. Other colours, such as red oxide, are available, we can colour match to most customer requirements.

ENVIRONMENTAL RESISTANCE

Silicone rubber has excellent resistance to ozone, oxidation, ultraviolet light, corona discharge, cosmic radiation, ionising radiation and weathering in general. Typical radiation resistance is greater than 10 grays (greater than 10 rads).

This information and our technical advice, whether verbal, in writing or by way of trials, is given in good faith but without warranty. This also applies where proprietary rights are involved. Our advice does not release you from the obligations to check its validity and to test our products as to their suitability for the intended use. The storage, application and use of our products are beyond our control and, therefore, entirely your own responsibility. The information contained within this data sheet is subject to change without notice.

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MECHANICAL PROPERTIES

EXTRUSION GRADE

GRADE		SIL 10		SIL 16		SIL 19		SIL 24		SIL27		SIL 33		
Property	UNITS	SPEC. LIMITS	TYPICAL VALUE	SPEC. LIMITS	TYPICAL VALUE	SPEC. LIMITS	TYPICAL VALUE	SPEC. LIMITS	TYPICAL VALUE	SPEC. LIMITS	TYPICAL VALUE	SPEC. LIMITS	TYPICAL VALUE	TEST METHOD
*Density	Kg.m ³ Lb.ft ³	200 ± 40 12.5 ± 2.5	195 12.2	250 ± 40 15.6 ± 2.5	256 16.0	300 ± 40 18.7 ± 2.5	320 20.0	400 ± 40 25.0 ± 2.5	400 25.0	450 ± 50 28.0 ± 3.0	460 28.7	530 ± 50 33.0 ± 3.1	550 34.3	BSENISO 845
**Hardness	Shore OO #ShoreA	-	35 ± 5 <5	-	42 ± 5 5	-	55 ± 5 15	-	65 ± 5 17	-	70 ± 5 24	-	80 ± 5.0 30	ASTM D2240
***Compression Stress 40% strain	kPa psi	50 ± 40 7.3 ± 5.8	50 7.3	90 ± 40 13 ± 5.8	90 13	120 ± 40 17.4 ± 5.8	120 17.4	170 ± 40 24.7 ± 5.8	165 24	235 ± 80 34.0 ± 11	230 34	450 ± 150 65.2 ± 22	470 68	BSENISO 3386 part 1, 2
Tensile Strength	MPa psi	0.5 min. 72	0.6 87	0.5 min. 72	0.6 87	0.6 min. 87	0.75 108	0.6 min. 87	0.75 108	1.2 min. 174	1.5 217	1.5 min. 217	2.0 290	BSENISO 1798
Elongation to Failure	%	75 min.	140	100 min.	145	110 min.	120	110 min.	120	110 min.	130	110 min.	130	BSENISO 1798
Compression Set 50% Compression 24hrs Recovery														
22 hrs @70°C (158°F)	%	20 max.	5.0	15 max.	3.8	15 max.	3.6	15 max.	3.0	15 max.	3.0	15 max.	3.0	BSENISO 1856
22 hrs @100°C (212°F)	%	20 max.	6.7	15 max.	4.8	15 max.	4.4	15 max.	3.0	15 max.	4.3	15 max.	4.0	BSENISO 1856

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MECHANICAL PROPERTIES

CALENDARED GRADE

GRADE Property	UNITS	SIL 10		SIL 16		SIL 19		SIL 24		SIL27		SIL 33		TEST METHOD
		SPEC. LIMITS	TYPICAL VALUE	SPEC. LIMITS	TYPICAL VALUE	SPEC. LIMITS	TYPICAL VALUE	SPEC. LIMITS	TYPICAL VALUE	SPEC. LIMITS	TYPICAL VALUE	SPEC. LIMITS	TYPICAL VALUE	
*Density	Kg.m ³ Lb.ft ³	200 ± 40 12.5 ± 2.5	195 12.2	250 ± 40 15.6 ± 2.5	256 16.0	300 ± 40 18.7 ± 2.5	320 20.0	400 ± 40 25.0 ± 2.5	400 25.0	450 ± 50 28.0 ± 3.0	460 28.7	530 ± 50 33.0 ± 3.1	550 34.3	BSENISO 845 ASTM D3574
**Hardness	Shore OO #ShoreA	-	35 ± 5 <5	-	42 ± 5 5	-	55 ± 5 15	-	65 ± 5 17	-	70 ± 5 24	-	80 ± 5.0 30	ASTM D2240
***Compression Stress 40% strain	kPa	50 ± 40	50	90 ± 40	90	120 ± 40	120	170 ± 40	165	235 ± 80	230	450 ± 150	470	BSENISO 3386 part 1, 2
***Compression Stress 25% strain	psi	2 to 5	4.6	5 to 9	6.4	6 to 10	8.3	7 to 11	9.0	15 to 20	17.4	31 to 36	34.8	ASTM D1056
Tensile Strength	MPa psi	0.5 min. 72	0.6 87	0.5 min. 72	0.6 87	0.6 min. 87	0.75 108	0.6 min. 87	0.75 108	1.2 min. 174	1.5 217	1.5 min. 217	2.0 290	BSENISO 1798 ASTM D412
Elongation to Failure	%	110 min.	140	110 min.	145	100 min.	120	100 min.	120	100 min.	130	100 min.	130	BSENISO 1798 ASTM D412
Compression Set 50% Compression 24hrs Recovery														
22 hrs @70°C (158°F)	%	20 max.	15.0	15 max.	12.0	15 max.	12.0	15 max.	10.0	15 max.	10.0	15 max.	9.5	BSENISO 1856
22 hrs @100°C (212°F)	%	20 max.	18.0	15 max.	14.5	15 max.	14.0	15 max.	12.0	15 max.	12.5	15 max.	12.0	ASTM D1056

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* Density measured on 25mm diameter cord sample. The density of samples of different sizes will be different from that stated here.
** Hardness measured 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.
For further information about physical properties of other sample sizes, please contact the technical department.

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