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 +200ºC. See our "HT" grades for use up to + 270ºc. They are also suitable for use at temperatures as low as -60ºC.

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 -80ºc ASTM D746
Limited Oxygen Index 24.0% BS 2782 Part 1
Thermal Conductivity 6.4 x 10^{-2} $W.m^{-1}.K^{-1}$ BS 874 Part 2
Radiation Resistance >10^5 Grays (10^7 Rads) typical

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).

MECHANICAL PROPERTIES

GRADE		SIL 10		SIL 16		SIL 24		SIL 33		
Property	UNITS	SPEC. LIMITS	TYPICAL VALUE	SPEC. LIMITS	TYPICAL VALUE	SPEC. LIMITS	TYPICAL VALUE	SPEC. LIMITS	TYPICAL VALUE	TEST METHOD
*Apparent 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	400 ± 40 25.0 ± 2.5	400 25.0	530 ± 40 33.0 ± 3.1	550 34.3	BSENISO 845
**Hardness	Shore OO ShoreA	-	335 ± 5 <5	-	45 ±5 5	-	65 ± 5 17	-	80 ± 5 30	ASTM D2240
***Compression Stress 40% strain	kPa psi	50 ± 40 7.3 ± 5.8	50 7.3	90 ± 40 13 ± 55.8	90 13	170 ± 40 24.7 ± 5.8	165 24	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	1.5 min 217	2.0 290	BSENISO 1798
Elongation to failure	%	75 min	140	100 min	145	110 min	120	110 min	130	BSENISO 1798
Compression Set 50% compression 24 hours recovery										
22 hours @ 70ºC (158ºF)	%	20 max	15.0	15 max	12.0	15 max	10.0	15 max	9.5	BSENISO 1856
22 Hours @ 100ºC (121ºF)	%	20 max	18.0	15 max	14.5	15 max	12.0	15 max	12.0	BSENISO 1856

* 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.

The Shore A values are provided as a guild line for comparison to solid materials and as such are not designed for use in specifications.
*** Compression set measured on samples as defined in 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.