



## **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

## MOISTURE ABSORPTION

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

## PIGMENTABILITY



## 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 <sup>3</sup> Lb.ft <sup>3</sup>	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

## 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.m³ Lb.ft³	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

# ДЕА ТРЕЙД БГ ЕООД

- \* 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.

