POLYMAX
Leaders in rubber technology

Unit 75, Whitehill & Bordon Enterprise Park
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Polymax Silo-Cell Silicone Sponge

PRODUCT FORM
Profile extrusions, sheeting, cord, joined rings, punched forms and self adhesive backed.

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 self-adhesive backing to ease assembly.

THERMAL PROPERTIES
The range is suitable for continuous use at temperatures up to +200°C. It has even been found that at temperatures as high as +300°C useful lives of up to 10 hours can be achieved. 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.

FLAMMABILITY CHARACTERISTICS
SIL16FR has a Limiting Oxygen Index (LOI) of 28%, the other products have an LOI of 23.2% (BS2782 Part 1) and comply with the following flammability specifications:
FAR 25.853 (a)(1)(iv) and (a)(1)(v) horizontal flammability tests.
CAA specification 8 issue 2 (2.2)(c) and (d) horizontal flammability tests.

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

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).

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GRADE		P10		P16		P24		P33		
Property	UNITS	SPEC. LIMITS	TYPICAL VALUE	SPEC. LIMITS	TYPICAL VALUE	SPEC. LIMITS	TYPICAL VALUE	SPEC. LIMITS	TYPICAL VALUE	TEST METHOD
*Apparent Density	$Kg.m^3$	200 ± 40	195	250 ± 40	256	400 ± 40	400	530 ± 40	550	BSENISO 845
**Hardness	Shore OO #Shore A	35 ± 5 <5	35	45 ±5 5 ± 2	45	65 ± 5 17 ± 3	64	80 ± 5 30 ± 10	82	ASTM D2240
***Compressio n Stress 40% strain	kPa	50 ± 40	50	90 ± 40	90	160 ± 40	160	580 ± 150	584	BSENISO 3386 part 1, 2
Tensile Strength	$N.mm^{-2}$	0.5 min	0.9	0.75 min	1.2	1.0 min	1.6	1.5 min	3.2	BSENISO 1798
Elongation at break	%	75 min	120	100 min	200	75 min	150	100 min	190	BSENISO 1798
Compression Set 22 hrs @70°C	%	20 max	16	15 max	10	15 max	10	15 max	10	BSENISO 1856 Type A

* 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 set measured on 25mm thick sample. The compressive stress of the material increases with the density as the sample thickness is reduced.
# 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.