FLEXCOMP®

SILICONE COMPOUNDS

Properties and possibilities
of a high-performance material.

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FLEXCOMP® HIGH-PERFORMANCE MATERIAL

Silicone is one of the most innovative elastomers of the present time and has excellent properties. A typical feature of this elastomer is that the effects of thermal influences on the mechanical properties of the silicone are very low in a wide temperature range; one of the factors why silicone is more versatile in use than almost any other material.

Like any available material silicone is initially represented by its natural properties, i.e. attributes that are only based on the chemical and physical structure of the network. Specifically, these are structures of the polymer and filler material whose structural similarity accounts for a substantial part of the natural properties. For this purpose the following properties can be mentioned; highly flexible silicon-oxygen chains with very high binding energy, high shielding of the "inner" chains and thus reduction of the surface energy.

The interaction of all the natural characteristics of the silicone is already leading to the main basic properties:

- high thermal stability (up to +200°C)
- excellent flexibility at low temperature (down to -50°C)
- natural resistance to chemicals, high-energy radiation and weather conditions / environmental influences
- hydrophobic surfaces
- high transparency
- targeted influence on mechanical properties
- very good flame resistance
- in case of fire, non-toxic products of combustion

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In addition to these natural characteristics we are able to vary specific settings of the property profile using a kind of a "building block system" by adding additives and by the use of special silicone types.

Our portfolio and capabilities include …

- **Material & curing options:** FLEXCOMP® compounds are based exclusively on peroxide and addition cured silicone mixtures (VMQ, PVMQ, FVMQ and corresponding co-polymers).
- **Colors & effects:** Compounds in almost all colors of the RAL and Pantone color chart, and in accordance with customer samples; also phosphorescent, fluorescent, metal and light effects.
- **Special features & wishes:** This expertise includes temperature stabilization up to +300°C, low temperature flexibility down to -110°C, increased electrical conductivity, increased thermal conductivity up to 1.0 W/mK, magnetic detectability, increase of the flame resistance and of course your custom compound.
- **Research & development:** Development, application engineering and established advice at one location. Project support in detail – development of new property profiles of FLEXCOMP® compounds, scale from small lab samples up to large-scale production level.
- **Standards & regulations:** Advice in current standards and regulations. Silicone can be found in almost all areas of the (daily) life; including food applications, drinking water applications, toys and baby care, medical and pharmaceutical technology, construction applications, automotive and railway applications.
- **Flexibility in production & processing technology:** High flexibility in manufacturing (and delivery process) of FLEXCOMP® compounds; targeted customer attendance, from the first idea to the launch.
- **Experience & innovation:** With FLEXCOMP® products you benefit from decades of experience in the field of inorganic and organic elastomers, as well as the innovative capacity of a young, dynamic company.

FLEXCOMP® Series	Material [1]	Density [2]	Hardness [3]	Curing options	Processing	Properties
VG	VMQ	1.07 – 1.23	15 - 90	Peroxide and addition cured	Extrusion / Molding	Allrounder – well-balanced property profile
TR	VMQ	1.07 – 1.20	25 - 85	Peroxide and addition cured	Extrusion / Molding	Increased tear resistance
STR	VMQ	1.10 – 1.20	25 - 80	Addition cured	Extrusion / Molding	Very high tear resistance and elongation at break
STRH	VMQ	1.10 – 1.20	25 - 75	Addition cured	Extrusion / Molding	Very high tear resistance and elongation at break; increased temperature resistance up to +250°C and +300°C peak temperature
STRB	VMQ	1.10 – 1.23	25 - 75	Addition cured	Extrusion / Molding	Very high tear resistance and elongation at break; increased flame retardancy
CSTR	VMQ	1.10 – 1.20	25 - 80	Addition cured	Extrusion / Molding	High tear resistance and elongation at break; optimized compression set
RH	VMQ	1.07 – 1.23	15 - 80	Peroxide and addition cured	Extrusion / Molding	Increased temperature resistance up to +250°C and +300°C peak temperature
CS	VMQ	1.10 – 1.24	30 - 80	Addition cured	Molding	Very low compression set
RC	PVMQ	1.11 – 1.19	35 - 65	Peroxide cured	Extrusion / Molding	Low temperature flexibility down to -110°C
RB	VMQ	1.10 – 1.23	30 - 70	Peroxide cured	Extrusion / Molding	Increased flame retardancy
RS	VMQ	1.13 – 1.23	40 - 80	Peroxide and addition cured	Extrusion / Molding	Increased (swelling-) resistance to animal / vegetable oil and fat
(F-)RX	(FVMQ)/VMQ	1.16 – 1.23	50 - 80	Peroxide and addition cured	Extrusion / Molding	Increased (swelling-) resistance in oil contact applications
ME	VMQ	1.13 – 1.19	40 - 70	Peroxide and addition cured	Extrusion / Molding	Increased electrical conductivity Anti-static Magnetic / metallic detectable
MS	VMQ	1.07 – 1.23	30 - 80	Addition cured	Extrusion / Molding	Oil-bleeding
TC	VMQ	1.19 – 2.16	50 - 80	Peroxide cured	Extrusion / Molding	Increased thermal conductivity

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The values, characteristics and standards (compliances and certificates) given in the table, form an overview of the possibilities and typical characteristics of the respective compounds within a FLEXCOMP® series. For detailed information and individual advice for your custom compound please ask our technical service and pay attention to our respective customer information and technical data sheets.

1 Material: ASTM D 1418
2 Density: DIN EN ISO 1183-1 A (g/cm³)
3 Hardness: DIN 53505 (Shore®A)

Regulations		
Food applications BfR XV "Silikone" FDA CFR 21 § 177.2600	Drinking water applications 3-A Sanitary Standard KTW-Leitlinie DVGW W270 WRAS	Medical and pharmaceutical technology DIN ISO 10993 USP Class VI Eur. Pharm. 3.1.9
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Fire protection BS 6853:1999, EN 45545-2:2013, NFF 16101:1988, UL 94		
Food applications BfR XV "Silikone" FDA CFR 21 § 177.2600		Medical and pharmaceutical technology DIN ISO 10993
Food applications BfR XV "Silikone" FDA CFR 21 § 177.2600	Automotive DBL 5568.10 + 11 DBL 5556.30 VW 2.8.1.	Electronic applications VDE 0207-20:1993
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Fire protection BS 6853:1999, EN 45545-2:2013, NFF 16101:1988, UL 94, DIN 5510-2: 2009, UNI CEI 11170-3: 2005		
Food applications BfR XV "Silikone" FDA CFR 21 § 177.2600		
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