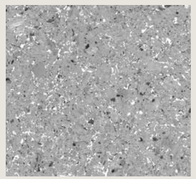
Range of Materials – from Hard to Soft

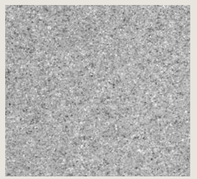
Material		CarSiK				FH				FE			FF
		SD	NT	CT	SiC30	42ZH	82A	82ZH	71ZH	45Y	65	679PS	521
Characteristics	Unit	SSiC	SiSiC	SiSiC-C	C-SiC	Carbon graphite				Electro graphite			Resin bonded carbon
Bulk density	g/cm³	3.10	3.09	2.90	2.65	1.70	2.15	1.80	2.80	1.70	1.80	2.20	1.75
Porosity	%	-	-	-	-	1	1	1	1	8	8	2	-
Flexural strength	MPa	390	280	120	140	60	90	75	75	40	45	90	60
Compressive strength	MPa	3800	3000	650	500	210	350	250	170	100	110	210	145
Young's modulus	GPa	400	360	260	140	18	26	24	27	12	13	20	20
Thermal expansion 20-200 °C	10^{-6}/K	4.0	3.9	3.9	3.0	4.6	4.5	4.7	7.0	3.6	3.1	4.1	23
Thermal conductivity	W/mK	110	120	120	125	11	9	8	6	65	65	45	5
Temperature limit, oxidized	°C	1720	1380	600	600	260	350	260	260	500	600	500	180
pH range		0-14	1-10	1-10	0-14	*	*	*		*			*
Chemical composition	% SiC	99	88	75	62	-	-	-	-	-	-	-	-

* The table shows a selection of our antifriction materials. The values in the table are typical values and are subject to material and product-specific variation. For manufacturing our carbon and graphite materials, we exclusively use defined preparations or specified raw materials which are processed in accordance with precisely prescribed procedures. More information about the chemical resistance of the materials is available upon request.

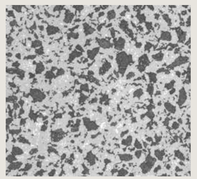
metal-impregnated material



high-strength carbon material



C-SiC composite material



Schunk Kohlenstofftechnik GmbH
Rodheimer Straße 59-61
35452 Heuchelheim ¬ Germany
Phone +49 (0) 641 6080
Fax +49 (0) 641 608 1223
E-Mail division-carbontechnology@schunk-group.com
www.schunk-carbontechnology.com

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Carbon Technology

The Best for Your Pump

Carbon and Ceramic Solutions from Schunk

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Schunk Carbon Technology

A worldwide success. Always at your side.

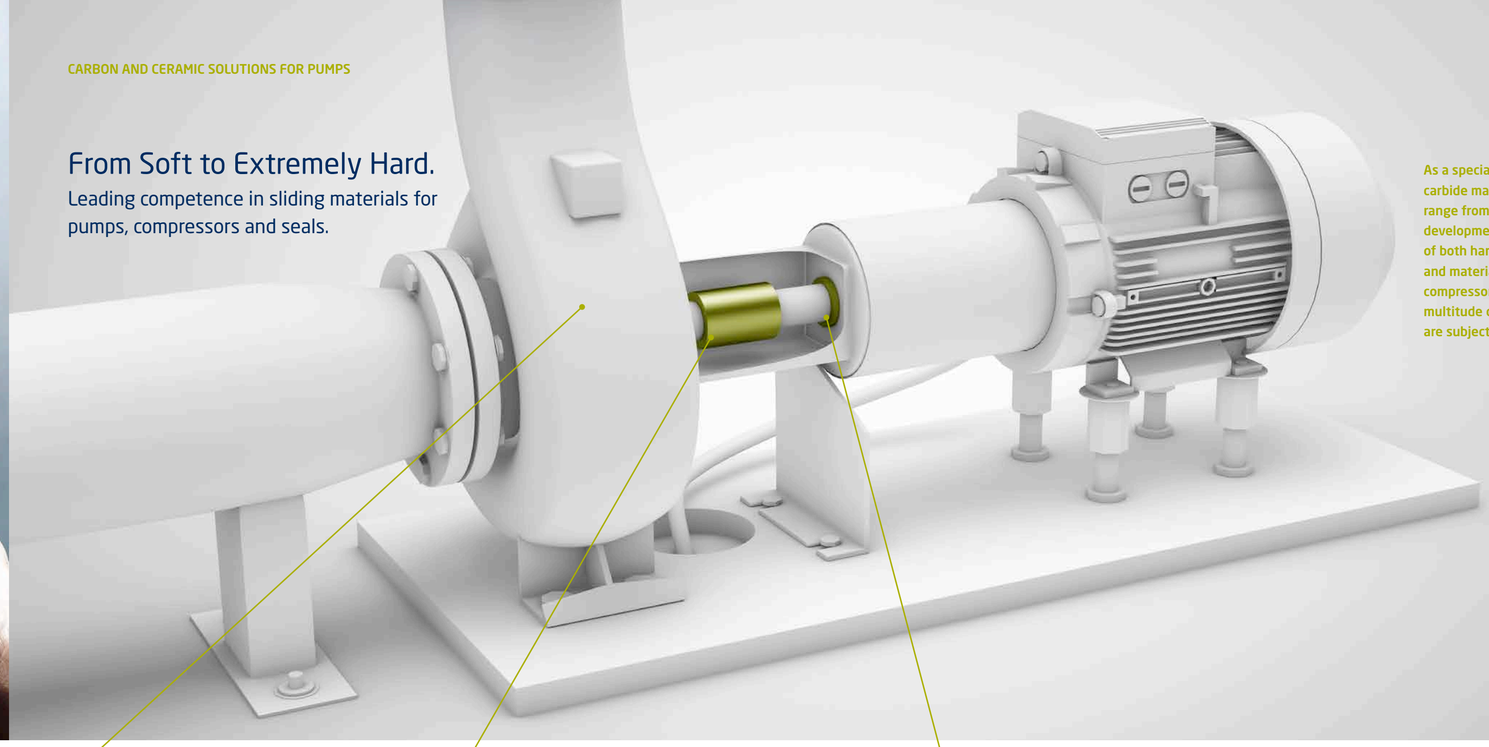
Schunk Carbon Technology focuses on development, manufacture and application of carbon and ceramic solutions. It combines innovative spirit and technological expertise with exceptional customer service to provide a range of products and services unique to the market. In Schunk Carbon Technology, you have a partner who can offer all the technological possibilities of an international company and implement ideas custom-tailored to your needs, both for high-volume industrial markets and for highly specialized niche markets. After all, this is our commitment: Ahead in Carbon Technology. Closer to your Business.

A Schunk Group division.
Enabling, idea-driven, cooperative – if you hope to apply technology to develop better products and capture new markets, we can help. The Schunk Group has been supporting customers with innovative technologies since 1913. As an idea-driven technology company, innovation is fundamental to our culture. We forge long-lasting, cooperative working relationships with our clients.

You will find our custom-tailored high-tech products and systems in markets such as carbon technology and ceramics, environmental simulation and air conditioning, sintered metals and ultrasonic welding. The Schunk Group is active in a large number of key industries, from automotive, rail, aviation and marine technologies to solar and wind energy, medical and electrical technology as well as the semiconductor industry. Our more than 8,100 employees in 29 countries are ready to serve you.

From Soft to Extremely Hard.

Leading competence in sliding materials for pumps, compressors and seals.



As a specialist for carbon and silicon carbide materials, we offer a wide product range from a single source: From the development, production and processing of both hard and soft sliding materials and material combinations for pumps, compressors and seals to solutions for a multitude of machine components which are subjected to tribological loads.

Ceramic Wear Protection made out of SiC

For components and pump linings subjected to high mechanical and tribological loads, our extremely hard silicon carbide stands for its outstanding temperature resistance with an extraordinarily low degree of thermal expansion. Furthermore, SiC is highly resistant to chemical corrosion.

Take advantage of these benefits:

- High abrasion and corrosion resistance
- Outstanding temperature resistance
- Complex shapes feasible via 3D printing

Slide Bearings

Silicon carbide bearings provide excellent abrasion and corrosion resistance and make space-saving designs possible due to their high load capacity. Carbon bearings, on the other hand, stand out for their outstanding running properties for mixed friction and dry running conditions.
The unique composite material SiC30 combines the advantages of both groups of material.

Take advantage of these benefits:

- High degree of reliability with the longest possible MTBF
- Lowest possible friction loss
- Optimal results due to precise customization during selection of the material

Seal rings for mechanical seals

Whether for hard/hard or hard/soft contact-seal pairings, the Schunk's range of materials always provides the perfect solution.
Take advantage of our carbon-graphite solutions with their excellent dry-running capabilities for bad lubrication conditions.
Seal components made of SiC are known for their performance in corrosive and abrasive media.

Take advantage of these benefits:

- Schunk offers optimal tribological pairings
- Even the largest dimensions can be realized
- Blister-resistant material pairings

CFRP Reinforcement Sleeves

Schunk fiber-reinforced materials are most frequently used for components which require the highest degree of material strength. Our reinforcement sleeves made of carbon-fiber-reinforced plastic are thus excellently suited for applications with very high rotational speeds, e.g. as armor sleeves for permanent-magnet drives.

Take advantage of these benefits:

- High-strength carbon-fiber-reinforced materials
- Efficient lightweight material
- Production within tight tolerance ranges