

## Physical Values of Our Most Important Materials

Grade	Material type	Vol-tage Drop	Coefficient of friction	Test conditions	Resistivity $\mu\Omega\text{m}$	Rockwell		Bending strength $\text{N}/\text{mm}^2$	Bulk density $\text{g}/\text{cm}^3$	Metal content %
						HR10/40	HR5/40			
C20	Bronze-graphite	sn	n	5	0,1	95	–	80	5,60	90
C40Z3	Bronze-graphite	sn	n	6	0,2	100	–	55	4,20	75
C50	Bronze-graphite	sn	n	6	0,5	95	–	100	5,65	92
C60	Bronze-graphite	sn	n	5	0,6	100	–	80	5,70	92
C72	Bronze-graphite	n	n	7	6,5	85	–	25	2,30	27
C80X	Bronze-graphite	sn	n	6	0,70	100	–	30	3,10	50
K14Z3	Copper-graphite	sn	n	6	1,0	110	–	50	3,30	62
S11	Silver-graphite	sn	m	–	0,05	–	70	150	7,50	95
S13	Silver-graphite	sn	n	–	8,0	75	–	–	3,35	60
S14	Silver-graphite	sn	n	–	6,5	95	–	25	3,20	53
S15	Silver-graphite	sn	n	–	0,5	100	–	30	5,00	75
S20	Silver-graphite	sn	n	–	1,5	100	–	25	3,20	60
SI20	Silver-graphite	sn	m	7	20	70	–	20	1,65	5
HG2634	Graphite	m	n	4	15	–	–	10	1,30	–
HG6634	Graphite	m	n	4	18	–	–	10	1,32	–
F49	Resin-bonded graphite	h	n	3	350	105	–	30	1,68	–
F51	Resin-bonded graphite	h	n	3	300	100	–	25	1,70	–
F61	Resin-bonded graphite	h	n	3	250	100	–	30	1,70	–
F63	Resin-bonded graphite	h	n	3	250	75	–	12	1,60	–
E43	Electrographite	m	n	7	20	100	–	30	1,70	–
E46	Electrographite	m	m	1	22	70	–	10	1,50	–
E46X	Electrographite	m	m	1	22	90	–	17	1,60	–
E468	Electrographite	m	m	1	20	65	–	10	1,50	–
E49	Electrographite	h	n	1	55	–	90	18	1,60	–
E50	Electrographite	h	n	1	100	–	110	25	1,64	–
E55	Electrographite	m	n	1	20	–	85	25	1,70	–
E79X	Electrographite	m	m	1	35	90	–	16	1,65	–
E101	Electrographite	m	n	1	45	–	95	30	1,60	–
E104	Electrographite	m	m	4	28	–	–	5	1,40	–
E108	Electrographite	m	n	1	45	–	90	27	1,60	–
L300	Carbon-graphite	h	m	7	23	95	–	24	1,62	–
L310	Carbon-graphite	h	m	7	33	90	–	20	1,73	–

\* The table shows a selection of commonly-used materials. For special applications a multitude of further materials can be supplied. 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 and details about the advantages and properties of our materials are available upon request.

## 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.

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Carbon Technology

Current Transmission  
Your Partner in General Industry

## Make Your Industrial Processes More Efficient and Profitable

Efficiency improvements and a high level of machine uptime are decisive success factors for reducing production and systems costs. As a development partner, we offer our customers comprehensive competence in the field of current-transmission equipment from the planning phase on, for integrating products which are custom designed for the application at hand into their systems.

### Your Best Solution Is Our Drive

Whenever the issue is the safe and reliable transmission of current for industrial systems, our components are the first choice and they are the first choice worldwide. As a technology and development partner, we offer all of our know-how to the industrial sector and develop customized solutions in close collaboration with our customers.

The results are technologically-advanced carbon brushes, brush-holder systems, grounding systems and contacts made of materials which meet the performance requirements. And with our products, our customers can always rely on the cost effectiveness, efficiency and durability of the products we develop.

### Operational Reliability Starts with Schunk

With innumerable applications in the industrial sector, our solutions push back the frontiers of what is technological-ly feasible and provided added value through operational reliability in current transmission. For instance, we help you to avoid unplanned downtime and additionally to optimize your maintenance cycles and expenses.

▼ Schunk Carbon Technology is represented in numerous industries.



### Reliable Grounding Systems for the Motor Shaft

Electrostatic charges, shaft currents and high switching frequency of motor controls cause vagrant current to the shaft. If these are not rerouted they can cause serious damage to bearings and gear boxes. Our high-quality grounding brushes and shaft-grounding devices reliably protect rolling bearings and gear components while preventing unplanned downtime and costly repairs.

#### Take advantage of these benefits:

- Customized carbon materials
- Outstanding protection for bearings and gear boxes
- Prevention of downtime



### Brush Rockers for DC Motors

Schunk brush rockers for DC motors ensure a precise positioning of the brushes at all times and support the brush contact with a stable design of the holder in connection with a pressure perfectly matched to the system requirements.



### Brush Holder for Slip-Ring Motors

Our holders are perfectly matched to our carbon brushes with respect to the brush guide and brush pressure and ensure exact positioning.



### Carbon Brushes for DC Motors and Slip-Ring-Motors

Our graphite materials combine high electrical and thermal conductivity with outstanding wear resistance. Customized to your particular applications, they stand out for current slope in idle modes, in low-load operation and in aggressive media as well as in environments with high dust content and humidity.

#### Take advantage of these benefits:

- Customer-specific design to the respective application
- High degree of dependability and operational reliability
- Low (no) tendency to swell
- High stability for alternating loads