

Carbon Brush Grades and Typical Properties

SGL CARBON GmbH (Ringsdorff®, EKL)

	Grade designation	Resistivity $\mu\Omega\text{m}$	Density g/cm^3	Flexural strength MPa	Hardness Rockwell B	Current density A/cm^2	Peripheral speed m/s
Electrographite	RE 28	42	1,63	21	70 HR 10/100	12	50
	RE 50	9	1,40	7	-	10	80
	RE 54	18	1,58	28	65 HR 10/60	12	50
	RE 59	49	1,67	24	75 HR 10/150	12	56
	RE 60	50	1,67	20	70 HR 10/150	12	56
	RE 75	25	1,56	21	58 HR 10/60	12	50
	RE 76	25	1,57	25	68 HR 10/60	12	50
	RE 78	23	1,54	17	75 HR 10 / 40	12	50
	RE 80	15	1,50	9	30 HR 10/40	10	50
	RE 92	16	1,53	14	55 HR 10/40	12	50
	RE 98	61	1,41	12	50 HR 10/60	12	60
	RE 140	90	1,68	25	95 HR 10/150	10	50
RE 170	74	1,68	27	92 HR 10/150	10	50	

It is possible to improve the running properties of the grades by impregnation: in that case, numbers or letters are added to the basic grades, e.g. RE 59 N1

SGL CARBON GmbH (Ringsdorff®, EKL)

	Grade designation	Resistivity	Density	Flexural strength	Hardness Rockwell B	Current density	Peripheral speed
		$\mu\Omega\text{m}$	g/cm^3	MPa		A/cm^2	m/s
Electrographite	E 33	57	1,62	22	105 HR 10/100	12	60
	E 33T	57	1,65	25	108 HR 10/100	12	60
	E 33U	57	1,65	27	110 HR 10/100	12	60
	E 34	48	1,58	25	90 HR 10/100	12	60
	E 34T	48	1,60	25	90 HR 10/100	12	60
Metal graphite	RC 53	1,3	3,2	30	84 HR 10/60	18	40
	RC 67	0,4	3,8	35	83 HR 10/60	18	35
	RC 73	0,20	4,2	44	85 HR 10/60	20	30
	RC 87	0,10	5,2	55	60 HR 10/60	22	25
	RC 90	0,09	5,3	36	74 HR 10/40	22	25
	RC 95	0,12	6,2	115	75 HR 10/60	25	20
Resin bonded graphite	RS 70	0,8	4,3	30	90 HR 10/60		20
	RX 88	140	1,68	32	85 HR 10/60	10	35
	RX 91	330	1,41	18	80 HR 10/40	10	40

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SGL CARBON Corporation, St. Marys (USA), (C/G bzw. AIRCO Speer Carbon)

	Metal	Grade designation	Resistivity	Density	Flexural strength	Hardness Rockwell B	Current density	Peripheral speed
	%		$\mu\Omega\text{m}$	g/cm^3	MPa		A/cm^2	m/s
Electrographite		E 3	8	1,69	21	30	12	45
		E 31	48	1,60	28	70	12	40
		E 37	43	1,60	34	75	10	40
		E 41	58	1,55	21	60	12	45
		E 44	43	1,72	38	80	10	35
		E 45	58	1,55	23	55	12	45
		E 49	43	1,64	21	70	12	50
		E 57	53	1,53	18	50	12	45
		E 60	48	1,66	37	75	12	50
		E 61	15	1,45	10	30	12	45
		E 63	14	1,58	14	30	12	50
		4029	64	1,46	14	45	12	40
	4041	76	1,49	9	50	12	37	
	6677	76	1,60	17	65	12	50	
Natur Graphite		702	25	1,43	5	15	10	70
Copper Graphite	15	626	12,7	2,04	17,2	35	14	40
	30	661	6,6	2,35	18,6	35	16	40
	40	672	3,1	2,69	25,5	35	17	40
	50	673	2,03	2,95	22,1	30	18	35

Identical grade names have historical backgrounds.

However properties and applications are not similar.

SGL ANGRAPH SP. Z O.O., Nowy Sacz, Polen

	Grade designation	Resistivity	Density	Flexural strength	Hardness Rockwell B	Current density	Peripheral speed
		$\mu\Omega\text{m}$	g/cm^3	MPa		A/cm^2	m/s
Electrographite	E 13	10–16	1,70	5	29	12	40
	E 13S	10–17	1,75	11	33	12	40
	E 17	15–22	1,55	6	34	12	40
	E 17S	15–25	1,60	10	36	12	40
	E 28	22–35	1,60	10	56	10	40
	E 28S	20–34	1,70	18	64	10	40
	E 30	28–42	1,69	8	55	10	40
	E 30K	26–41	1,65	12	55	10	40
	E 33S	27–42	1,68	16	58	10	50
	E 35	32–48	1,70	10	59	10	40
	E 35S	30–47	1,72	16	63	10	40
	E 40K	27–42	1,65	12	56	10	50
	E 44S	37–52	1,68	18	62	10	50
Natur Graphite	G 12	9–15	1,55	5	25	11	25
	G 20	17–26	1,66	5	32	11	25
	G 20S	15–26	1,68	10	35	11	25

It is possible to improve the running properties of the grades by impregnation: in that case, numbers or letters are added to the basic grades, e.g. E 28S. Identical grade names have historical backgrounds.

However properties and applications are not similar.