

Typical Physical Properties of Seal Face Materials

Scenic Seals - The Best Partner for Industrial Sealing Solution

Item & Unit		Silicon Carbide			Tungsten Carbide					SCENIC SP Series Carbon Graphite	
		S-SIC	R-SIC	RG-SIC	TC-N6	TC-N8	TC-C6	TC-C8	TC-15	SP-263R	SP-263A
Composition		Sintered	Reaction-bonded	R-SIC+ Graphite	Ni 6%	Ni 8%	Co 6%	Co 8%	Co 15%	Resin Impregnated 8~9%	Antimony Impregnated 8~9%
Purity [%]		> 97	> 90	> 90	> 93	> 91	> 93	> 91	> 84	> 91	> 91
Density [g/cm ³]		3.1	3.05	2.94	14.8	14.6	15.0	14.8	14.2	1.83	2.25
Porosity (open) [%]		< 0.15	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 1.5	< 1.5
Hardness		94HRA/ 24HV	125 HS / 20HV	97 HS	90 HRA	89 HRA	91 HRA	90 HRA	88 HRA	92HS	92HS
Temperature Resistance [°C]	In oxidizing atm.	800~900	1400	700~800	-	-	-	-	-	200	400
	In inert atm.	1600	1300	1200	2400	2500	2500	2300	2000	200	400
3 Point Bending Strength [MPa]		470	360	350~400	1500	1600	1550	1700	2160	72	75
Compressive Strength [MPa]		> 2500	> 2500	1800	4970	4900	5100	4950	4600	235	255
Fracture Toughness (Kic-value) [MPa · m ^{1/2}]		5.1	4	-	-	-	-	-	-	-	-
Young' s Modulus [GPa]		390	380	-	625	615	640	630	605	28	24
Thermal Conductivity [W/m K]		100	110	90	55	45	47	53	51	14	20
Coefficient of Thermal Expansion [(1/°C) x10 ⁻⁶]		4.2	4.0	4.0	5.2	5.3	5.0	5.1	6.3	5.1	4.2
Poisson Ration		0.14	0.15	-	0.24	0.25	0.25	0.26	0.3	-	-