



MECHANICAL SEAL MATERIAL GRADES

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CARBON GRAPHITE

Material Type		Grade Designation	Material Type	Bulk/Apparent Density g/cm ³	Hardness Shore	Compressive Strength		Transverse Rupture Strength		Coefficient of Thermal Expansion 10 ⁻⁶ /C ²	Max Operating Temp C ² / F ²
						Mpa	Kpsi	Mpa	Kpsi		
Resin Impregnated Carbon Graphite	Impregnated Carbon Graphite - High Temperature	IAGM106HT	Resin Impregnated Carbon Graphite	1.85	95	230	33	76	11	4	260 / 500
Epoxy Resin Impregnated Carbon Graphite	Impregnated Carbon Graphite	IAGM106H	Epoxy Resin Impregnated Carbon Graphite	1.65	85	210	30	60	87	4.8	250 / 480
	Impregnated Carbon Graphite	IAGM120H	Epoxy Resin Impregnated Carbon Graphite	1.7	85	200	2	55	80	4.8	200 / 390
Furan Resin Impregnated Carbon Graphite	Impregnated Carbon Graphite	IAM120K	Furan Resin Impregnated Carbon Graphite	1.85	80	160	23	60	8.7	4	250 / 480
	Impregnated Carbon Graphite	IAM106K	Furan Resin Impregnated Carbon Graphite	1.85	90	176	25	60	8.7	4	250 / 480
Antimony Impregnated Carbon Graphite	Impregnated Carbon Graphite	IAM106D	Antimony Impregnated Carbon Graphite	1.85	80	160	23	60	8.7	4	480 / 890
	Impregnated Carbon Graphite	IAM120D	Antimony Impregnated Carbon Graphite	2.3	90	220	32	65	9.4	7.2	400 / 750
	Impregnated Carbon Graphite	IAM254D	Antimony Impregnated Carbon Graphite	1.75	60	110	16	55	8	3.4	500 / 930

SILICON CARBIDE

Material Type		Grade Designation	Material Type	Bulk/Apparent Density g/cm ³	Hardness Knoop kg/mm ²	Compressive Strength		Transverse Rupture Strength		Coefficient of Thermal Expansion 10 ⁻⁶ /C ²	Thermal Conductivity W/m K
						Mpa	Kpsi	Mpa	Kpsi		
Solid Phase SiC	Self / Direct Sintered SiC	IADSSC	Silicon Carbide	3.08	2800	3800	550	400	58	4	120
Reaction Bonded SiC	Siliconized SiC	IARBSiC	Silicon Carbide	3.03	2500	2700	390	460	66	4	120
Liquid Phase SiC	Liquid Phase SiC	IALPSiC	Silicon Carbide	3.2	2800	3600	520	600	87	4.7	80
Pressure Assisted Densification SiC	HIP Processed SiC	IAHIPSiC	HIP SiC	3.15	2400	3400	490	570	82	4	120

TUNGSTEN CARBIDE

Material Type		Grade Designation	Material Type	Density g/cm ³	Hardness HRA	Compressive Strength		Transverse Rupture Strength	
						Mpa	Kpsi	Mpa	Kpsi
Sinter-HIP Processed Tungsten Carbide	Tungsten Carbide 6% Nickel Binder	IA6N	Tungsten Carbide	14.50 - 14.90	91.0 - 92.0	4800	696	1890	275
	Tungsten Carbide 10% Nickel Binder	IA10N	Tungsten Carbide	14.45 - 14.60	89.5 - 90.5	3600	525	2000	290

CERMET TI(C,N)

Material Type		Grade Designation	Material Type	Density g/cm ³	Hardness HRA	Transverse Rupture Strength		K1C Fracture Toughness K1C Mpa M ^{1/2}
						Mpa	Kpsi	
Cermet Ti(C,N)	Composite Ceramic/Metallic Cermet	IAST30	CERMET	6.6	88	2800	406	18

NOTES: All data listed above are typical values - Custom "made to specification" material formulations available