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Materials Catalogue

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SiC & TC sintering


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Rubber


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Silicon Carbide

Silicon Carbide Physical Property

		Reaction Bonded Silicon Carbide	Sintered Silicon Carbide	Reaction Bonded Silicon Carbide with Graphite	Sintered Silicon Carbide with Graphite	Sintered Silicon Carbide with Pore
Technical Parameter		**SiC**	**SSiC**	**SiC+C**	**SSiC+C**	**QSSiC+C**
Hardness	HS	110	115	≥105	≥110	≥100
Porosity Rate	%	<0.3	<0.2	<0.5	<0.5	<5
Density	g/cm^3	3.00-3.05	>3.10	2.69-2.90	2.70-3.0	2.65
Compressive Strength	MPa	>2200	>2500	>1400	>1600	>800
Fractural Strength	MPa	>350	>380	>150	>160	>100
Coefficient of Heat Expansion	10^{-6}/°c	4	4.2	3.5	3	2.5
Content of Sic	%	≥90	≥98	≥85	≥92	≥90
Free Si	%	≤10	≤1	≤12	/	/
Elastic Modulus	GPa	≥400	≥410	≥350	≥360	≥180
Temperature	°c	1300	1400	1300	1400	1400

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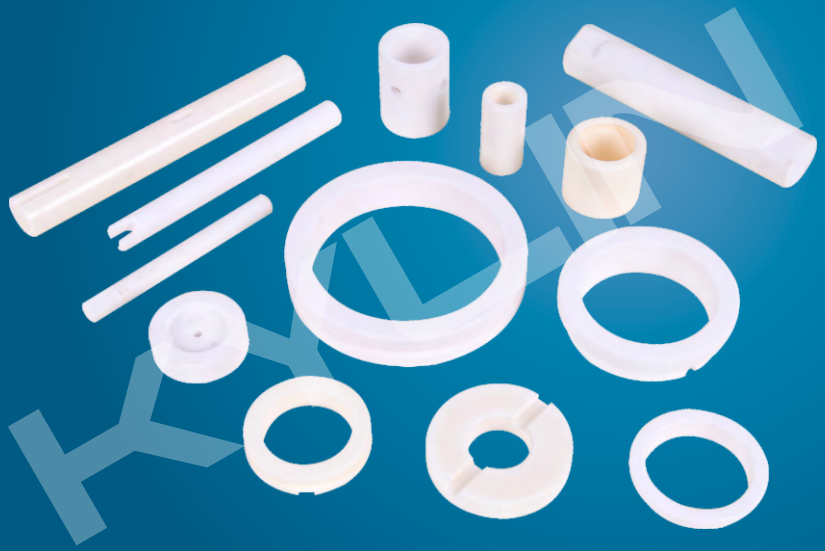
Aluminum Oxide



Al_2O_3 Physical Property

Technical Parameter	Unit	99%	99.5%
Content of Al_2O_3	%	99	99.5
Density	g/cm^3	3.88	3.9
Hardness	HRA	88	90
Porosity Rate	%	<0.2	<0.15
Fractural Strength	Mpa	310	350
Coefficient of Heat Expansion	$10^{-6}/K$	5.3	5.2
Thermal Conductivity	W/M.K	26.7	26

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Tungsten Carbide

Tungsten Carbide Physical Property

Technical parameter		Unit	YWN6	YWN8	YG6	YG8	NT60
Composition	TC	%	94	92	94	92	
	Ni	%	6	8			
	Co	%			6	8	
Density		g/cm^3	14.5-14.9	14.4-14.8	14.6-15	14.5-14.9	6.5-6.8
Hardness		HRA	⩾88.5	⩾88	⩾89.5	⩾89	⩾90
Fractural Strength		MPa	1490	1470	1421	1470	1480
Heat Expansion Co-efficient		$10^{-6}/K$	5.2	5.3	5	5.1	7.5

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Carbon

Carbon physical Property

Category		Model	Density (g/cm^3)	Fractural Strength (Mpa)	Compressive Strength (Mpa)	Shaw Hardness (HS)	Porosity (%)	Temperature (°C)
Carbon -graphite	Hot molded Carbon	M1	>1.65	65	150	>70	<0.2	180
	Sintered Carbon	MJ	>1.75	60	160	>85	<2.5	200
	Impregnated Epoxy Resin(H)	M106H	1.75	65	200	85	<1	250
		M120H	1.7	60	180	80	<1	250
	Impregnated Furan Resin(K)	M106K	1.75	67	200	90	<1	250
		M120K	1.7	62	180	85	<1	250
	Impregnated Phenol Aldehyde Resin(F)	M106F	1.75	60	200	85	<1	250
		M120F	1.7	55	180	80	<1	250
	Antimony Carbon(D)	M106D	2.3	65	220	90	<1.5	400
		M120D	2.3	60	220	90	<1.5	400
		M254D	2.3	55	210	65	<1.5	400

Carbon has the good property of good resistant-corrosion, high thermal conductivity and lower friction, good self-lubrication, and smaller expansion. They can be made into the seal faces, bearings and so on. It is ideal to choose it as the frictional mating rings.

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Rubber Parts

NBR	Resistant to oil, pressure and wear, good elasticity and mechanical strength; applicable to the mediums including water, oil, alcohol, etc from -20°C to 100°C
EPDM	Resistant to high or low temperatures, ozone and chemicals; applicable to weak acids with temperatures from -35°C to 150°C
Viton	Resistant to heat, oil, medicine and chemical reagents, acid and alkali with medium corrosive degrees; applicable to the corrosive mediums from -20°C to 180°C
Silica Gel	Resistant to ozone, aging, acetic acid, ammonia and alcohol; applicable to alcohol, alkali, etc from -50°C to 210°C
Chlorinated Rubber	Resistant to Freon, petroleum; applicable to inorganic acid, alkali, running from -30°C to 130°C

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