



Silicon Carbide Bearing

Silicon carbide is an ideal material for bearings. It has good corrosion resistance, great mechanical strength under high temperature and excellent wear resistance. Nextgen Advanced Materials supplies Silicon Carbide Bearing with high quality and fast delivery. Customization is also available.

Product Description

Nextgen Advanced Materials supplies Silicon Carbide Bearing with high quality and fast delivery. Silicon carbide (SiC) is a lightweight ceramic material with high strength properties comparable to diamond. It has excellent thermal conductivity, low thermal expansion, and is resistant to corrosion from acids. Silicon carbide is an excellent ceramic material for applications requiring good erosion and abrasive resistance. Consequently, it is useful in a variety of applications including spray nozzles, shot blast nozzles and cyclone components.

Silicon carbide is an ideal material for sealing rings and bearings. The SiC bearing has good corrosion resistance, great mechanical strength under high temperature and excellent wear resistance. We can supply ring and bearing products made by SiC as well as other SiC parts.



Silicon Carbide Bearings Specifications

Item	Parameter
Inner Diameter (ID)	4~100mm
Outer Diameter (OD)	ID + 5~40mm

Length/Thickness	4~34mm
Material	SiC, ZrO ₂ , Si ₃ N ₄

Material Properties Reaction Bonded Silicon Carbide

Item	Unit	Parameter
Density	gm/cc	3.1
Crystal Size (Average)	Microns	12
Water absorption (open porosity)	%	0
Gas permeability	%	0
Color	-	Black
Flexural Strength (MOR) 20°C	MPa (psi x 103)	462 (67)
Elastic Modulus 20°C	GPa (psi x 106)	393 (57)
Poisson's Ratio 20°C	-	0.20
Compressive Strength 20°C	MPa (psi x 103)	2700 (363)
Hardness	GPa (kg/mm ²)	26 (2500)
	R45N	-
Tensile Strength 25°C	MPa (psi x 103)	307 (44.5)
Fracture Toughness K (I c)	mpa m ^{1/2}	4
Thermal Conductivity 20°C	W/m K	125
Coefficient of Thermal Expansion 25-1000°C	X 10 ⁻⁶ /°C	4.3
Specific Heat 100°C	880 J/kg*K	800
Thermal Shock Resistance ΔTc	°C	400
Maximum Use Temperature	°C	1000
Dielectric Strength 6.35mm	ac-kV/mm (ac V/mil)	-
Dielectric Constant 1 MHz	25°C	-
Dielectric Loss (tan delta) 1 MHz	25°C	-

Sintered Silicon Carbide:

Item	Unit	Parameter
Density	gm/cc	3.15
Crystal Size (Average)	Microns	43169
Water absorption (open porosity)	%	0
Gas permeability	%	0
Color	-	Black
Flexural Strength (MOR) 20°C	MPa (psi x 103)	480 (70)
Elastic Modulus 20°C	GPa (psi x 106)	410 (59)
Poisson's Ratio 20°C	-	0.21
Compressive Strength 20°C	MPa (psi x 103)	3500 (507)
Hardness	GPa (kg/mm ²)	26 (2800)
	R45N	-
Tensile Strength 25°C	MPa (psi x 103)	-

Fracture Toughness K(I c)	mpa m ^{1/2}	4
Thermal Conductivity 20°C	W/m K	150
Coefficient of Thermal Expansion 25-1000°C	X 10 ⁻⁶ /°C	4.4
Specific Heat 100°C	880 J/kg*K	800
Thermal Shock Resistance ΔTc	°C	300
Maximum Use Temperature	°C	1600
Dielectric Strength 6.35mm	ac-kV/mm (ac V/mil)	–
Dielectric Constant 1 MHz	25°C	–
Dielectric Loss (tan delta) 1 MHz	25°C	–