



Silicon Carbide Ceramics

Silicon carbide ceramics have excellent mechanical properties, excellent oxidation resistance, high wear resistance and low friction coefficient. The biggest advantage of silicon carbide ceramics is that it can still maintain high strength and hardness at high temperatures of 1,400 degrees Celsius.

Features Of Silicon Carbide Ceramics

- ◆ Relatively low density;
- ◆ Higher mechanical strength;
- ◆ Excellent high temperature strength;
- ◆ Excellent thermal shock resistance;
- ◆ High hardness and wear resistance;
- ◆ Low thermal expansion and high thermal conductivity;
- ◆ Excellent chemical resistance.

Silicon Carbide Ceramics Properties

- ◆ Direct Sintered Silicon Carbide(SSiC)
- ◆ Reaction Bonded Silicon Carbide(SiSiC)

PROPERTIES

Properties	Unit	SSiC	SiSiC	Silicon Nitride Ceramics
Colour	—	Dark Gray	Dark Gray	Gray or Black
Density	g/cm ³	3.15	3.04	3.15~3.20
Porosity	%	≤0.1	≤0.1	—
Hardness	GPa	22	22	15
Compressive Strength	MPa	2600	2600	2500
Flexural Strength	MPa	400	250	700
Elastic Modulus	GPa	410	330	300
Maximum Use Temperature	°C	1400	1000	1100
Thermal Conductivity	W/(m · K)	100~120 (50°C)	45 (1200°C)	20 (50°C)
Coefficient Of Thermal Expansion	1 x 10 ⁻⁶ /°C	4	4.5	3

*The values are typical material properties and may vary according to products configuration and manufacturing process.

Typical Applications

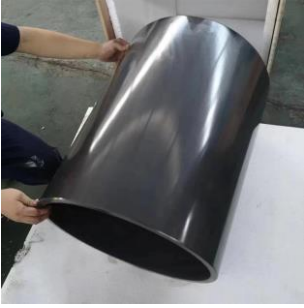
- ◆ Engine components
- ◆ valves, rocker arm pads, seal faces
- ◆ Induction heating coil supports
- ◆ Turbine blades, vanes, buckets
- ◆ Welding & brazing jigs
- ◆ Heating Element components
- ◆ Fixed and mobile turbine components
- ◆ Seals, Bearings, Pump Vanes
- ◆ Ball valve accessories
- ◆ Wear plate
- ◆ Kiln furniture

Great Ceramic are experts in the production of technical ceramics, we offer ceramic processing, ceramic materials, ceramic casting, ceramic metal packaging and surface metallization services.

[Contact us](#) for more information!



Silicon Carbide Product Introduction



Silicon Carbide Chambers

Silicon carbide grinding chambers offer two key advantages: exceptional wear resistance due to the material's hardness, and the ability to withstand high temperatures without degrading.

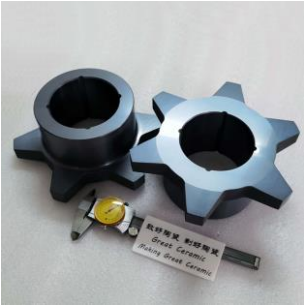
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Silicon Carbide Tubes

Silicon carbide ceramic tubes are tough and long-lasting due to their high temperature tolerance, corrosion resistance, and ability to handle sudden temperature changes, making them ideal for demanding industrial environments.

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Ceramic Mixing Blade

Silicon carbide ceramic mixing blades offer excellent wear resistance due to their extremely high hardness, making them ideal for long-lasting performance in harsh mixing applications.

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Ceramic Sealing Rings

Silicon carbide ceramic sealing rings offer a winning combination of high temperature resistance, corrosion resistance, wear resistance, and self-lubrication, making them ideal for harsh environments and demanding applications.

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Boron Nitride Washer

Silicon carbide ceramic washers offer a winning combination of high-temperature performance, exceptional wear resistance, and resistance to corrosion - making them ideal for harsh environments.

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Silicon Carbide Bushings

Silicon carbide bushings offer excellent wear resistance, high temperature resistance, low friction and excellent corrosion resistance, making them ideal for industrial applications where durability and performance are critical.

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Custom Machining

Great Ceramic has a wide range of grinding and machining equipment to provide customers with efficient ceramic machining solutions.

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Boron Nitride Tube

Silicon carbide ceramic nozzles offer exceptional hardness, wear resistance, thermal conductivity and corrosion resistance, making them ideal for high temperature and abrasive applications.



Silicon Carbide Shafts

Silicon carbide ceramic shafts offer a winning combination of properties: high temperature resistance, low thermal expansion, high wear resistance, and good rigidity. In short, they are super tough and stay stable in extreme conditions.



Silicon Carbide Parts

Silicon carbide ceramic mechanical parts are ideal for demanding applications due to their superior strength, wear resistance, dimensional stability and good thermal conductivity.

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