

About Sintered Silicon Carbide



Sintered silicon carbide is sintered by pressureless sintering of submicron silicon carbide powder in a 2100 ° C vacuum sintering furnace. Due to its high-strength single-phase fine-grained structure at high temperatures, SSiC's high purity and high density make it highly resistant to corrosion, and its excellent surface finish makes it ideal for applications in mechanical seals and valves. , bearings and oil, chemical, aerospace, automotive and other fields.

Characteristics



After the corrosion-free sintered silicon carbide material is etched, the crystal phase diagram under a 200X optical microscope shows that the crystal distribution and size are uniform, and the largest crystal does not exceed 10 μm.

Sintered Silicon Carbide Technical Data

Item	Unit	SSiC
Volume Density	g/cm ³	3.10~3.15
Hardness	HV0.5	≥2600
Indicated Porosity	%	<0.2
Compressive Strength	Mpa	≥2200
Flexural Strength	Mpa	≥400
Elastic Modulus	GPa	400
Thermal Conductivity	W/m ² K	90~110
Maximum Temperature	°C	1600
Coefficient Of Heat Expansion	10 ⁻⁶ /°C	4.0



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Main Uses For Sintered Silicon Carbide (SSiC)

Items	Application Environment	Applications	Qualities
Petrochemical	High Temperature High Hydraulic Pressure Abrasion	Nozzles Mechanical Seals Bearings Ball Valves Valve Plates	Wear Resistant
Chemical	Strongly Acidic Strongly Alkaline High-Temperature Oxidization	Mechanical Seals Bearings Pump Assemblies Heat Exchangers Ventilation Piping Thermocouple Sheaths	Corrosion Resistant Wear Resistant Air Impermeability High Temperature Corrosion Resistant
Mechanical	Engines Abrasion	Nozzles Turbine Blades Rotors Combustion Device Components Sand-Blasting Nozzles Container Lining	Thermal Shock Resistant Wear Resistant High Strength Wear Resistant
General Industry	Pulp Mill Waste High Temperature High-Power Heat Dissipation	Mechanical Seals Bearings Molding Plates Kiln Furniture Heat Transfer Materials Crucibles Encapsulationmaterial Substrates	Corrosion Resistant Wear Resistant Heat Resistant Fast Heat Ttransfer High Thermal Conductivity
Nuclear Power / Laser	High-Temperature Boric Acid High Power	Mechanical Seals Axle Sleeves Reflection Screens	Radiation Resistant High Strength Highly Stable
Metallurgy		Heat Resistantmaterial Heat Exchangers	Heat Resistant Corrosion Resistant Oxidation Resistant Air Impermeability
Defense	Tanks Helicopters Naval Vessels	Armor Plating	Lightweight Highly Bulletproof