

Tecsic-P Silicon Carbide

Tecsic-P products are produced from ultra fine pressureless sintered silicon carbide (SSIC) powders at the temperature of 2100°C-2200°C in an inert gas atmosphere. The material can be formed into complex shapes with greater than 98% theoretical density (3.10g/cm³).

Tecsic-P has an extremely high corrosion resistance in acidic and basic media even at very high temperatures. Tecsic-P also has high thermal shock resistance, high thermal conductivity, high resistance to wear, and a hardness close to that of diamond. Thus, Tecsic-P is ideal for extremely demanding applications, for example, slip ring seals in chemical pumps, bearing bushes, high temperature burner nozzles, or as kiln furniture for very high application temperatures.



SSIC BEARING BUSH

The lighter specific gravity of pressureless sintered silicon carbide bush can make the weight of the bearing lighter, thereby reducing energy consumption. Its extremely high hardness makes the surface of the all-ceramic bearing smoother, the geometric shape is better, and the running noise is reduced, making the equipment more precise, harder and more resistant to strong corrosion, which directly prolongs the service life of the bearing.

SPECIFICATIONS

PROPERTY		RESULT
Composition	%	SiC \geq 98
Grain Size	μ m	5-8
Density	g/cm ³	3.1
Hardness	HV	2600
Compressive strength R.T.	MPa	2500
Flexural Strength R.T.	MPa	395
Elasticity	GPa	429
Coefficient of thermal expansion	Mm/mm $^{\circ}$ K	4.3*10 ⁻⁶
Thermal conductivity	w/(m·k)	104
Electrical Resistivity R.T.	Ohm-cm	10 ⁶ -10 ⁸
Max working temperature	$^{\circ}$ C	1900



Photomicrograph of Tescic-P Silicon Carbide (200x).

SSIC MECHANICAL SEAL FACE

TechCeramic offer Tecsic-p seal face materials for diverse applications such as automotive water pumps, chemical processing, refining, mining, pulp and paper processing, mixers and refrigeration.

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Hardness	HV	2600
Compressive strength R.T.	MPa	2500
Flexural Strength R.T.	MPa	395
Elasticity	GPa	429
Coefficient of thermal expansion	$\text{Mm/mm}^\circ\text{K}$	$4.3 \cdot 10^{-6}$
Thermal conductivity	$\text{w/(m}\cdot\text{k)}$	104
Electrical Resistivity R.T.	Ohm-cm	$10^6\text{-}10^8$
Max working temperature	$^\circ\text{C}$	1900



Photomicrograph of Tecsic-P Silicon Carbide (200x).

SSIC NOZZLES

TechCeramic offers Tecsic-P pressureless sintered silicon carbide nozzles, which is widely used in machinery equipment for surface cleaning and surface strengthening in the fields of machinery, petroleum, chemical industry, automobile, metallurgy, aerospace, shipbuilding, glass, coal etc.

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SSIC ARMOR

We offer Tecsic-P armor materials which is used for protection of body, vehicle armor. These pressureless sintered silicon carbide armors are with high strength, high hardness, high compressive strength, light specific gravity, high elastic modulus and excellent ballistic performance.

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