

### ■ Introduction:

Silicon Nitride (Si3N4) ceramic is an excellent combination of material properties. They are nearly as light as silicon carbide (SiC), but their microstructure gives them excellent thermal shock resistance and their high fracture toughness makes them resistant to impacts and shocks. It is formed by cold isostatic pressing (CIP) and sintered by Gas Pressure Sintering (GSPN).

### ■ Technical data sheet:

Properties	Unit	Data
Si3 N4 Content	%	≧92%
Density	g/cm <sup>3</sup>	≧3.1
Relative Density	g/cm <sup>3</sup>	>99.6
Elasticity Modulus	Gpa	300-500
Crushing Load Ratio	(25℃)%	≧45
Hardness	(Hv)Mpa	1800-2000
Fracture Toughness	Mpa•m <sup>1/2</sup>	7.0-8.5
Flexural Strength	Mpa	≧600
Poisson Ratio	/	0.25
Coefficient of linear expansion	10 <sup>-6</sup> K <sup>-1</sup>	3.2-3.4
Heat Conductivity	W•(M•K) <sup>-1</sup>	20-25
Surface smoothness	/	≤0.3
Electrical isolation	KV	≧20
Acid&Alkali Resistance	/	excellent
Magnetism	/	Without
Working Temperature	℃	1400

### ■ Advantages:

- 1.High density: High density of Si3N4 degassing rotor, which can effectively reduce mechanical vibration and noise.
- 2.Good oxidation resistance: Rotor for Aluminum Foundry Industry have good oxidation resistance and can effectively prevent oxidation and corrosion.
3. Light weight: The light weight of Silicon nitride ceramic rotor can reduce the load and inertia force, and improve the rotation efficiency.
- 4.Low friction coefficient: Si3N4 rotor Aluminum casting have low friction coefficient, which can reduce energy loss and heat generation, and improve mechanical efficiency.

