



## Silicon Nitride Rod

Silicon nitride rod has great strength and fracture toughness, good thermal shock resistance, and excellent wear and impact resistance. Nextgen Advanced Materials supplies the Silicon Nitride Rod with high quality and fast delivery. Meanwhile, the customization is available.

### Product Description

Silicon nitride ceramic is an inorganic material ceramic that does not shrink during sintering. There are five different methods to produce Silicon Nitride including SRBSN, GPSN, HPSN, HIP-SN and RBSN, make the application and working material different slightly. In these 5 methods of production, GPSN is most commonly used to produce Si<sub>3</sub>N<sub>4</sub> components. The strength of silicon nitride, especially hot-pressed silicon nitride, is one of the hardest substances in the world. Si<sub>3</sub>N<sub>4</sub> Rod is a covalent bond compound with high strength, low density, and high temperature resistance. It is ideal for a wide range of applications. Its low density and great strength also enable the optimal implementation of lightweight structures.

### Silicon Nitride Rod Specifications

Item	Unit	Typical Values
Density	g/cm <sup>3</sup>	3.22
Physical Properties		
Hardness	–	HRA90
Vickers Hardness (Hv50)	HV0.5	>1550
Modulus of Elasticity	Gpa	290
Flexural Strength	MPa	>600
Compressive Strength	MPa	2500
Fracture Toughness, K <sub>1c</sub>	MPa•m <sup>1/2</sup>	>6.0
The Thermodynamic Property		
Max. Use Temperature	°C	1200
Thermal Conductivity	W/m•k	15-20
Thermal Expansion Coefficient	10 <sup>-6</sup> / °C	>3.1
Thermal Shock Resistance	ΔT °C	500
Specific Heat Capacity	KJ/kg.k	700
Electrical Property		
Volume Resistivity at 20 °C	Ω•cm	1.0×10 <sup>12</sup>

