

## Silicon Nitride Bearing



Silicon Nitride is an ideal material for bearings. Ceramic bearings have good wear and corrosion resistance, and great mechanical strength under high temperature. Nextgen Advanced Materials supplies the Silicon Nitride Bearing with high quality and fast delivery. Meanwhile, the customization is available.

### Product Description

You can rest assured to buy Nextgen Silicon Nitride Bearing from our factory and we will offer you the best after-sale service and timely delivery. The high standards we have established since our inception and maintained to date have earned us a solid reputation and helped us to attract a large number of new customers and talents.

Silicon Nitride is a high-melting-point ceramic material that is extremely hard and relatively chemically inert. The material is prepared by heating powdered silicon between 1300 °C and 1400 °C in an atmosphere of nitrogen. Then the powder of silicon nitride can be sintered to designed shape. Silicon Nitride is an ideal material for bearings. Ceramic bearings have good wear and corrosion resistance, and great mechanical strength under high temperature. Si<sub>3</sub>N<sub>4</sub> bearings have already been applied in automobiles, rockets high-speed engines, equipment working in a corrosive environment and some performance model cars. As the price of ceramic materials decreased, it could have more applications.



### Comparison of ceramic and steel for bearings

	Si <sub>3</sub> N <sub>4</sub>	ZrO <sub>2</sub>	Steel
Working temperature	800°C	800°C	180°C

Density	3.24 g/cm <sup>3</sup>	6 g/cm <sup>3</sup>	7.8 g/cm <sup>3</sup>
Thermal expansion coeff.	3.4×10 <sup>-6</sup>	10.5	12.5×10 <sup>-6</sup>
Hardness, HV	1500	1300	About 750
Young's Module	320 GPa	210 GPa	208 GPa
Corrosion resistance	Good	Good	Poor
Thermal conductivity	Low	Low	High
Magnetism	None	None	Yes
Wear resistance	Excellent	Excellent	Good