

Silicon Nitride (Si_3N_4)

Features

- More Light
- Super Hardness
- Low Thermal Expansion Coefficient
- High Mechanical Strength and Fracture Toughness
- Resistant to Deformation at Elevated Temperature

Applications

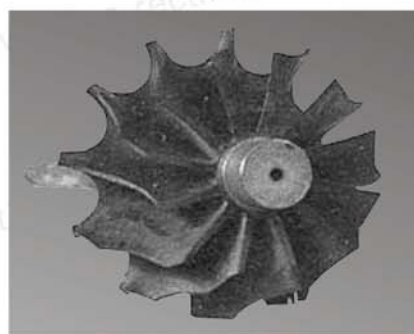
- Valves, Pistons for Gas Turbines
- Parts for Diesel Engines
- Cutting Tools for Processing Gray Cast Iron, Ductile cast Iron, Half Steel and Half Iron, High Manganese Steel, Nickel Base Alloy, Titanium Base Alloy, Silicon-chromium Base Alloy, Carbon Steel and Other Non-ferrous Metals
- Bearings

Characteristics of Material

Item	Unit	Value
Bulk Density	g/cm^3	3.2
Hardness	HRA	93~94
Thermal Expansion Coefficient	$10^{-6}/^\circ\text{C}$	2.8~3 (at 0~1400 $^\circ\text{C}$)
Fracture Toughness	$\text{MPam}^{1/2}$	6~8
Bending Strength	MPa	900
Thermal Conductivity	W/m.K	10~45
Dielectric Strength	kV/mm	>10
Volume Resistivity	$\Omega \text{ cm}$	> 10^{14}



Parts for diesel engines



Engine parts for gas turbimes



Ferrules



Balls and bearings



Balls



Pipe, cutting knife