



Representative silicon nitride bearing family for rotating-equipment applications.

Silicon Nitride Ceramic Bearings

Product ID / SKU: FWM/SN-BRG-001

Material: Silicon Nitride

Product type: Silicon Nitride Ceramic Component

Silicon nitride bearing components for high-speed, wear-resistant, electrically insulating and precision rotating systems.

95% Si₃N₄ Typical Properties

Property	95% Si ₃ N ₄	Condition / method
Density (g/cm ³)	≥3.2	-
Young's modulus (GPa)	300	-
Fracture toughness (MPa·m ^{1/2})	6.2	-
Flexural strength (MPa)	>720	25°C
Compressive strength (MPa)	2200	25°C
Thermal conductivity (W/(m·K))	15-20	25°C
Coefficient of thermal expansion (10 ⁻⁶ /K)	3.0-3.2	25-1000°C
Volume resistivity (Ω·cm)	>10 ¹⁴	25°C
Typical maximum material temperature (°C)	1200	-
Poisson's ratio	0.26	-
Dielectric strength (kV/mm)	16	-
Relative permittivity	8.2	1 MHz; 25°C
Dielectric loss tangent	0.004	1 GHz; 25°C