

SILICON NITRIDE (Si3N4) BALLS

Light weight ceramic material balls, they provide very good mechanical toughness properties and corrosion resistance. They are auto lubricant materials and good electric insulators. They have excellent resistance to thermal shocks. Balls are manufactured according to ASTM F 2094 Class II standards.

Special bearings, high-speed bearings, under vacuum pumps, compressors, centrifugal pumps, shafts/mandril, recirculating balls, flow meters, measurement instruments. They are used in aerospace and military industry.			
Silicon Nitride	Nierite	Si3N4	90.0 - 95.0

Physical / mechanical / thermal / electric / magnetic properties

Property	Symbol	U.o.M.	Type	Notes	Values
Density	δ	[g/cm ³]	Physical	Room temp.	3.26
Young's modulus	E	[GPa]	Mechanical	-	300
Friction coefficient	μ	-	Mechanical	Room temp.	0.1
Specific heat	c	[J/kg-K]	Thermal	Room temp.	740
Coefficient of linear thermal expansion	α	[10 ⁻⁶ /°C]	Thermal	($\Delta T=0-100^{\circ}C$)	3.4
Thermal conductivity	λ	[W/(m·K)]	Thermal	Room temp.	23.0
Volume resistivity	ρ	[$\Omega \cdot m$]	Electric	-	> 10 ¹³
Relative magnetic permeability	μ	-	Magnetic	Diamagnetic	<~1

Technical data

Property	Type	U.o.M.	Values	U.o.M.	Values
Hardness	Mechanical	[HV]	1400 - 1600	-	-
Ultimate compressive strength	Mechanical	[MPa]	2300 - 4000	[psix10 ³]	334 - 580
Service temperature	Thermal	[°C]	0 / 1200	[°F]	32 / 2192

Range

0.4000 - 200.000	[mm]	1/64 - 8	["]	G3-G5-10-16-20-24-28-40-60-100
Excellent corrosion resistance in all almost corrosive environments, apart from acids (except sulphuric acid) and basic solutions at high concentrations.				