SILICON NITRIDE Si_3N_4

Light weight ceramic material balls, they provide very good mechanical/thoughness 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.

APPLICATIONS

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.

CHEMICAL COMPOSITION

Commercial name	Other name	Formula	Nitride / %
Silicon Nitride	Nitrite	Si3Ni4	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.	3,25
Youngs modulus	E	[GPa]	Mechanical	-	300
Friction coefficient	μ	-	Mechanical	Room temp	0,10
Spezific Heat	C	[J/kg-K]	Thermal	Room temp.	740
Coefficient of linear. thermal expansion	α	[10^{-6}/ºC]	Thermal	(ΔT=0-100°C)	3,4
Thermal conductivity	λ	[W/(m·K)]	Thermal	Room temp.	23,0
Volume resistivity	ρ	[Ω*m]	Electric	-	>10^{13}
Rel. magnetic permeability	μ	-	Magnetical	Diamagnetic	<~1

TECHNICAL DATA

Property	Type	U.o.M.	Values	U.o.M	Values
Hardness	Mechanical	[HV]]	1400-1600	-	-
Ultimate compressive strength	Mechanical	[MPa]	0 - 1200	[psix10^3]	32 / 2192
Service Temperature	Thermal	[ºC]	0 – 1200	[ºF]	334 - 580

QUALITY AND DIAMETER

DRM mm	U.o.M.	DRM “	U.o.M.	Quality DIN5401 / ISO 3290
0,400 - 200,000	[mm]	1/64 – 8	["]	G5-G100

CORROSION RESISTANCE

Excellent corrosion resistance in all almost corrosive environments, apart from acids (except sulphuric acid) and basic solutions at high concentrations.