

■ Introduction:

Silicon nitride ceramic riser tube for metallurgy is an excellent combination of material properties. Silicon nitride ceramic riser are nearly as light as silicon carbide (SiC), but their microstructure gives them excellent thermal shock resistance and their high fracture toughness makes them resistant to impacts and shocks. Silicon nitride ceramic tube is formed by cold isostatic pressing (CIP) and sintered by Gas Pressure Sintering (GSPN). The life time of silicon nitride riser tube for aluminium foundry is over 10 times longer than traditional iron riser tube. So it greatly reduces the changing times of riser tube and full ensure the continuous and automatic of production. Silicon nitride riser tubes are widely used for aluminum melting and non-ferrous metal industry.

■ Technical data sheet:

Properties	Unit	Data
Si3 N4 Content	%	≥ 92%
Density	g/cm ³	≥ 3.1
Relative Density	g/cm ³	> 99.6
Elasticity Modulus	Gpa	300-500
Crushing Load Ratio	(25 °C)%	≥ 45
Hardness	(Hv)Mpa	1800-2000
Fracture Toughness	Mpa•m ^{1/2}	7.0-8.5
Flexural Strength	Mpa	≥ 600
Poisson Ratio	/	0.25
Coefficient of linear expansion	10 ⁻⁶ K ⁻¹	3.2-3.4
Heat Conductivity	W•(M•K) ⁻¹	20-25
Surface smoothness	/	≤ 0.3
Electrical isolation	KV	≥ 20
Acid&Alkali Resistance	/	excellent
Magnetism	/	Without
Working Temperature	°C	1400

■ Advantages:

1. High strength good compactness of Silicon nitride tube for metallurgy
2. Low thermal expansion coefficient of Silicon nitride riser for smelting
3. Good corrosion resistance of Silicon nitride ceramic tube
4. Excellent thermal shock resistance of Silicon nitride ceramic riser
5. No wetting by molten aluminium & other non-ferrous molten metal

