

Silicon Nitride Protection Tube

► Suitable for non-ferrous metal applications

Silicon nitride (Si_3N_4) is a chemical compound of Silicon and Nitrogen, and its synthesis was first published in 1857. Silicon nitride is a structural ceramic refractory material with high hardness and strength, especially hot-pressed sintered silicon nitride, which is one of the hardest substances in the world.

Silicon nitride has excellent thermal stability, oxidation resistance, acid and alkali resistance, and is resistant to non-ferrous metal erosion, it may be a better choice than general refractory materials and recrystallized SIC tubes.

In a wide temperature range, silicon nitride has a certain thermal conductivity, and low thermal expansion coefficient. Unlike ordinary ceramics, these properties make it excellent thermal shock resistance, making it an outstanding protective material, often used in applications requiring high durability and high temperature environments.



Hardness table of abrasion-resistant materials (atmospheric temperature)

MATERIAL	HARDNESS	conversion value to Rockwell hardness A (HRA)
Stellite 1	HRC: 55	78.5
Stellite 6	HRC: 42	71.5
Stellite 12	HRC: 48	74.7
UMCo50	HV: 260-425	62.4 - 72.3
Hard chrome plating	HV: 800-900	83.4 - 85
Silicon Nitride	HRA: 92-94	92 - 94

Technical Data

Si_3N_4 Content	≥99%
Flexural Strength	800-1000MPa
Compression Strength	>3600MPa
Thermal Conductivity	22-24W/m.k.
Porosity	<0.1
Thermal Expansion Coeff. (RT-1000°C)	$1.0 \times 10^{-6}/^\circ\text{C}$
Max. Working Temperature	1100°C
Hardness (HRA)	92-94
Resistivity	10^{14}

Protection Tube Size, unit: mm

16*8*300	22*12*900
16*8*400	28*16*200
16*8*500	28*16*500
16*8*700	28*16*700
22*12*300	28*16*900
22*12*500	28*16*1000
22*12*700	28*16*1500
22*12*800	OD*ID*LENGTH
*Contact us for more size.	