

MATERIAL TECHNICAL DATA SHEET

TRADE NAME: BN-1

I. Material Description

Chemical Name & Formula: Silicon Nitride - Si₃N₄

II. Components

Si₃N₄ (+ Al₂O₃; Y₂O₃; MgO) > 99 %

III. Physical Data

Physical form	Polycrystalline Structure
Boiling Temperature	NA
Melt Temperature	NA
Vapor Pressure	NA
Evaporation Rate	NA
Specific Gravity	NA
Density	3,22 g/cm ³
Water Solubility	Insoluble
Color	Dark Grey
Odor	None

IV. Mechanical Properties at Room Temperature

Water Absorption	%	:	0	
Vickers Hardness (HV 0.5)	Gpa	:	17,5	
Flexural Strength	Mpa	:	800	
Compressive Strength	Mpa	:	3200	
Young's Modulus	Gpa	:	300	
Fracture Toughness	MPa*m ^{1/2}	:	7	
Maximum Service Temperature	°C	:	1300	
Thermal Conductivity at 20 °C	W/m*k	:	33	
Thermal Expansion Coeff.	x10 ⁻⁶ / °C	20 ± 400 °C	:	2,4
		20 ± 800 °C	:	4,3

V. Physical and Chemical Properties

Good thermal shock resistance, excellent wear and corrosion resistance

VI. Fire and Explosion Data

Flashpoint	:	NA
Auto - Ignition Temperature	:	NA
Flammability Limits in Air	:	NA

Product is non - flammable
Not an explosion hazard

Please, note that all the above-mentioned values are based on test pieces and may vary according to component design.
These values are not guaranteed in any way and should only be treated as indicative values.
They should be used for guidance only and for no other purpose.