



BN-1 – Silicon Nitride

MATERIAL TECHNICAL DATA SHEET

TRADE NAME: BN-1

MATERIAL DESCRIPTION

Chemical Name & Formula: Silicon Nitride – Si_3N_4

MAIN COMPONENTS

Si_3N_4 (+ Al_2O_3 ; Y_2O_3): 99% min

PHYSICAL DATA

Physical Form:	Polycrystalline structure
Boiling Temperature:	N.A.
Vapour Pressure:	N.A.
Evaporation Rate:	N.A.
Specific gravity:	N.A.
Density:	3,22g/cm ³
Water solubility:	Insoluble
Colour:	Dark Grey
Odour:	None

MECHANICAL PROPERTIES AT ROOM TEMPERATURE

Water Absorption	%	0
Vickers Hardness	(HV 0,5)	1650
Flexural Strength	MPa	800
Compressive Strength	MPa	3200
Young's Modulus	GPa	300
Maximum service temperature	°C	1300
Thermal Conductivity @20°C	W/(m·K)	33
Thermal Expansion Coefficient (RT-800°C)	10 ⁻⁶ /°C	4,3
Thermal Shock Resistance (ΔT)	°C	200

PHYSICAL AND CHEMICAL PROPERTIES

Good thermal shock resistance, excellent wear and corrosion resistance.

Please, note that all values quoted 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.

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