



BS-1 – Silicon / Titanium Nitride

MATERIAL TECHNICAL DATA SHEET

TRADE NAME: BS-1

MATERIAL DESCRIPTION

Chemical Name & Formula: Silicon / Titanium Nitride – $\text{Si}_3\text{N}_4 + \text{TiN}$

MAIN COMPONENTS

Si_3N_4 / TiN: >90% min

PHYSICAL DATA

Physical Form:	Polycrystalline structure
Boiling Temperature:	N.A.
Vapour Pressure:	N.A.
Evaporation Rate:	N.A.
Specific gravity:	N.A.
Density:	$\geq 3,96 \text{g/cm}^3$
Water solubility:	Insoluble
Colour:	Bronze
Odour:	None

MECHANICAL PROPERTIES AT ROOM TEMPERATURE

Water Absorption	%	0
Vickers Hardness	(HV 0,5)	2000
Flexural Strength	MPa	540
Compressive Strength	MPa	2600
Young's Modulus	GPa	260
Thermal Conductivity @20°C	W/(m·K)	32
Thermal Conductivity @1000°C	W/(m·K)	22
Thermal Expansion Coefficient (RT-1000°C)	$10^{-6}/^\circ\text{C}$	5,1

PHYSICAL AND CHEMICAL PROPERTIES

Good thermal shock and wear resistance.

Not magnetic material.

The material is electroconductive: it can be processed by electroerosion.

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.

BETTINI s.r.l.

Via Industriale, 11 I - 23804 - Monte Marengo (LC) - ITALY

Tel. +39 0341 63.15.88 - E-mail: box@bettini.srl

www.bettini.srl

It is strictly forbidden to publish, edit, market, distribute, radio or video transmitted in any way or in any form, reproduce, communicate to public, make available to public, rent and loan, perform publicly, use in any way and disseminate -from anyone- trademarks, graphics settings, text, photos, graphics, audio and video works by third parties and everything else included in this document, unless written permission to ask exclusively at box@bettini.srl