



BX-1 – Zirconia Toughened Alumina (ZTA)

MATERIAL TECHNICAL DATA SHEET

TRADE NAME: BX-1

MATERIAL DESCRIPTION

Chemical Name & Formula: Zirconia Toughened Alumina – $\text{Al}_2\text{O}_3 + \text{ZrO}_2$

MAIN COMPONENTS

Al_2O_3 :	85%
ZrO_2 :	14%
Y_2O_3 :	1%

PHYSICAL DATA

Physical Form:	Polycrystalline structure
Boiling Temperature:	N.A.
Melt Temperature:	N.A.
Vapour Pressure:	N.A.
Evaporation Rate:	N.A.
Specific gravity:	N.A.
Density:	$\geq 4,10\text{g}/\text{cm}^3$
Water solubility:	Insoluble
Colour:	White - Creamy
Odour:	None

MECHANICAL PROPERTIES AT ROOM TEMPERATURE

Water Absorption	%	0
Vickers Hardness	(HV 0,5)	1500
Flexural Strength	MPa	450
Compressive Strength	MPa	3100
Young's Modulus	GPa	380
Maximum service temperature	°C	1400
Thermal Conductivity @20°C	W/(m·K)	29
Thermal Expansion Coefficient (RT-800°C)	$10^{-6}/^\circ\text{C}$	8,8
Thermal Shock Resistance (ΔT)	°C	140

PHYSICAL AND CHEMICAL PROPERTIES

Excellent chemical and wear resistance, suitable for textile components thanks to very low friction coefficient and very smooth surface.

Not suitable for HF (Hydrofluoric acid).

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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