MATERIAL TECHNICAL DATA SHEET

TRADE NAME: BX-1

I. Material Description

Chemical Name & Formula: Zirconia Toughtened Alumina - $Al_2O_3 + ZrO_2$

II. Components

Al_2O_3	MIN %	85
ZrO_2	MAX %	14
Y_2O_3	MAX %	1

III. Physical Data

Physical form	Polycrystalline Structure
Boiling Temperature	NA
Melt Temperature	NA
Vapor Pressure	NA
Evaporation Rate	NA
Specific Gravity	NA
Density	4,10 g/cm^3
Water Solubility	Insoluble
Color	White - Creamy
Odor	None

IV. Mechanical Properties at Room Temperature

Water Absorption	%		:	0
Vickers Hardness (HV 0.5)	Gpa		:	16
Flexural Strength	Mpa		:	450
Compressive Strength	Mpa		:	3100
Young's Modulus	Gpa		:	380
Fracture Toughness	MPa*m$^{1/2}$		:	5,6
Maximum Service Temperature	°C		:	1400
Thermal Conductivity at 20 °C	W/m*k		:	29
Thermal Expansion Coeff.	x10^{-6} / °C	20 ± 400 °C	:	7,4
		20 ± 800 °C	:	8,8
Thermal Shock Resistance	ΔT °C		:	140

V. 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).

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.

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