

TECHNICAL DATA SHEET

(DB+ SINT)

1. Material Description

Chemical Name & Formula: Yttria partially stabilized zirconia – Y₂O₃ PSZ

2. Chemical composition

ZrO ₂ + HfO ₂ :	≈	94.6	%
Y ₂ O ₃ :	≈	5.2	%
Al ₂ O ₃ :	≈	0.2	%

III. Physical Data

Physical form	:	Polycrystalline structure
Boiling Temperature	:	NA
Melt Temperature °C	:	2730
Vapour Pressure	:	NA
Evaporation Rate	:	NA
Specific Gravity	:	NA
Density	g/cm ³ :	6,07
Water Solubility	:	Insoluble
Color	:	white
Odor	:	None

IV. Mechanical Properties at Room Temperature

Water Absorption	%	:	0	
Vickers Hardness	(HV)	:	1250	
Flexural Strength	MPa	:	1400	
Fracture Toughness	MPa m ^{0,5}	:	5	
Young 's Modulus	GPa	:	160	
Thermal Conductivity at 20°C	W/m*k	:	2,68	
Maximum service temperature	°C	:	100 0	
Transmittance (D65)	%	:	0	
Thermal Expansion Coeff.	x10 ⁻⁶ °C ⁻¹	25 ÷ 400°C	:	10
		25 ÷ 800°C	:	10,5
Thermal Shock Resistance	ΔT°C	:	300	

V. Physical and Chemical Properties

Excellent chemical and wear resistance. High value mechanical loads.
Low resistance to HF (Hydrofluoric acid - highly concentrated solutions).

Before using the DB+ , this pre-sintered form must be sinterized at 1450°C in order to obtain DB+ SINT.

VI. Fire and Explosion Data

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

The product is not flammable
Not an explosion hazard

Please, note that all the 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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