

## MATERIAL DATA SHEET

Material type: ZTA (zirconia toughened alumina)

**FZT**

Properties		Unit	Specific value
Main component		-	Al <sub>2</sub> O <sub>3</sub> , ZrO <sub>2</sub>
Purity		wt.-%	> 99.5
Density		g / cm <sup>3</sup>	≥ 4.10
Open porosity		vol.-%	0
Average size of crystallites		µm	5
Bending strength $\sigma_m$	DIN EN 843-1	MPa	460
Weibulss modulus		-	> 15
Toughness $K_{Ic}$	SEVNB	MPa * m <sup>0.5</sup>	3.3
Compressive strength		MPa	3000
Young's modulus	static	GPa	360
Poisson's ratio		-	0.24
Hardness	HV1	-	1880
Maximum service temperature in air		°C	1700
Coefficient of thermal expansion	-100 - 20 °C	10 <sup>-6</sup> / K	4.9
	20 - 500 °C	10 <sup>-6</sup> / K	7.5
	20 - 1000°C	10 <sup>-6</sup> / K	8.3
Specific heat	20 °C	J / (kg * K)	850
Thermal conductivity	100 °C	W / (m * K)	25
Typical colour		-	white

The data indicated on this table are in line with the introductory German Industrial Standard DIN 60672-2 and relate to test specimens from which they are obtained. They are not unconditionally applicable to other forms of the same material. The data must be regarded as indicative only. All data refer to a temperature of 20 °C, unless otherwise specified.