

## MATERIAL DATA SHEET

Material type: Mg-PSZ (magnesia partially stabilized zirconia)

### FZM

Properties		Unit	Specific value
Main component		-	ZrO <sub>2</sub> , MgO
Purity		wt.-%	> 99.7
Density		g / cm <sup>3</sup>	≥ 5.70
Open porosity		vol.-%	0
Average size of crystallites		µm	50
Bending strength $\sigma_m$	DIN EN 843-1	MPa	500
Weibulls modulus		-	> 15
Toughness $K_{Ic}$	SEVNB	MPa * m <sup>0.5</sup>	6.3
Compressive strength		MPa	2000
Young's modulus	static	GPa	185
Poisson's ratio		-	0.3
Hardness	HV1	-	1220
Maximum service temperature in air		°C	900
Coefficient of thermal expansion	- 100 - 20 °C	10 <sup>-6</sup> / K	7.7
	20 - 500 °C	10 <sup>-6</sup> / K	10.4
	20 - 900 °C	10 <sup>-6</sup> / K	10.6
Specific heat	20 °C	J / (kg * K)	400
Thermal conductivity	20 °C	W / (m * K)	3
	500 °C	W / (m * K)	2.3
	900 °C	W / (m * K)	2
Resistivity	20 °C	Ω * cm	10 <sup>10</sup>
	900 °C	Ω * cm	84
Typical colour		-	yellow

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.