

## MATERIALS

Reference	Zircon	Mullite	Alumina				Zirconia					Zirconia Alumina	Aluminium titanate	
	KZ	KM	92%	96%	99,7%	99,99%	Mg-PSZ	Y-TZP		Y-PSZ	Y-FSZ	Ca-PSZ	ATZ	AT
			KA-92	KA-96	KA-997	KA-999	KZM	KZY-1000	KZY-2000	KZY-8	KFSZ	KZCa	KATZ	KTiAl
<b>PHYSICAL PROPERTIES</b>														
Melting point	Units	°C	2550	1920	2000	2000	2050	2050	2750	2700	2700	2700	2700	1860
Max. operating temperature	°C	1500	1600	1500	1650	1700	1800	1100	1000	1000	1000	2000	1000	1650
Density (20°C)	g/cm <sup>3</sup>	4,5	3,1	3,6	3,8	3,9	3,98	5,6	6,02	6,04	5,9	5,7	5,6	3,1
<b>MECHANICAL PROPERTIES</b>														
Polished surface quality (Ra)	µm	0,2	0,2	0,2	0,3	0,3	0,015	0,08	0,04	0,02	0,04		0,02	
Vickers hardness (20° Hv)	Gpa	9	9	14,4	17,1	19,3	19	11	13	14	13	12	14	
Bending strength (4 points) 20°C	MPa	250	250	296	296	380	380	620	1000	1500	1000	180	750	30
800°C				200	215	287	260	322	270	360	270	270	350	
Tensile strength 20°C	MPa			155	150	180		350	420	520	420			
Compressive strength 20°C	MPa							3500	4000	4000	4000	7500		
800°C								1800	2000	2000	2000	1500	3500	
Young's modulus 20°C	GPa		150	278	334	371	380	200	210	210	210	160	195	310
Fracture toughness 20°C K <sub>1c</sub>	MPa·√m		2	4,95	5,4	5,6	4,5	6	6,8	7,2	6,8	3,5	8	20

- The published figures are given solely as a guide. The product attributes can vary depending on the design, production process and conditions of use.
- If in any doubt, do not hesitate to ask our technical department.
- Other materials are available on demand.

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<b>THERMAL PROPERTIES</b>															
Units															
Coef. of thermal expansion (20-1000°C)	x10 <sup>-6</sup> K <sup>-1</sup>	4,5	5,3	8,2	8,7	8,6	8,5	9	11	11	11,5	11	9	8,1	1,5
Thermal shock resistance	T°C	300	300	300	250	200	200	250	250	250		200			
Thermal conductivity	Wm <sup>-1</sup> K <sup>-1</sup>														
20°C		5	5	22	24	29	29	1,9	3	3	1,7	2,5	1,9		
500°C			4	11,2	11,5	12		2,1	2	2	1,7		2,1		
1000°C			1,8	8,5	8,8	9		2,2	4	4	1,7		2,2		
Specific heat capacity 20°C	Jkg <sup>-1</sup> K <sup>-1</sup>	625	950	950	980	1025	900	680	650	650	650	670			
<b>ELECTRICAL PROPERTIES</b>															
Electrical resistivity	Ω.m														
20°C															
1000°C															
Dielectric strength	kVmm <sup>-1</sup>														
20°C															
1000°C															
Dielectric constant 25°C															
1 KHz															
1 MHz															
1 GHz															
		7,8	7	8,3	8,3	8,7		2,4	2,4	2,4					
			7	8,3	8,3	8,7									
			7	8,1	8,1	8,2									

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