Advanced Ceramics

Datasheet of our oxide ceramics

For ceramic components, the composition of the material is crucial. We are glad to provide our expertise to assess the suitability of a material for your practical application.

Your desired material is not listed?
Please simply contact us. Our engineers and materials experts will be happy to consult you.

Material		Alumina		Zirconia
Specification		99,7 %	99,9 %	3Y-PSZ
Density [g/cm³]	Mechanical	3,92	3,96	6,05
Hardness HV [GPa]	Mechanical	15	15	12
Compressivestrength [MPa]	Mechanical	2600	2600	2300
Flexuralstrength 4-Point [MPa]	Mechanical	400	430	930
Fracture Toughness K_{ic} [MPa · √m]	Mechanical	3	4	10
Young's modulus [GPa]	Mechanical	380	380	205
Surface roughness [µm]	Mechanical	Ra 0,9 µm	Ra 0,6 µm	Ra 1 µm
Max. operating temperature (°C)	Thermal	1650	1650	1500
Thermal expansion coefficient [10^{-6}/K]	Thermal	8	8	10
Thermal conductivity [W/mK]	Thermal	29	37	3
Electr. resistivity at 20°C [Ωm]	Electrical	10^{14}	10^{14}	10^{13}
Electr. resistivity at 600°C [Ωm]	Electrical	10^{6}	10^{6}	10^{4}

The present characteristic value tables are to be understood as general guide values which can only be transferred to real components to a limited extent. A binding nature of these values cannot therefore be guaranteed for specific applications. The characteristic value table on the real product depend on the manufacturing process, component geometry and powder particle size. We would be pleased to provide you with our expertise to assess of a material for your specific application.