MicroCeram

Innovative Solutions in Ceramic

Modern shaping technology, CNC controlled machining and laser machining for the manufacturing of components made out of Ceramic high-performance materials such as Aluminium oxide, Zirconium oxid, Silicon carbide and Silicon nitride are opening up new application possibilities.

Mechanical Engineering and Apparatus Design

Medical Technology

Ceramic in the field of mechanical engineering and apparatus design serve as alternatives to conventional materials due to their wear resistance, high hardness, high strength and thermo stability.

Applications

Apparatus Design
Vacuum Technology
Medical Technology
Analysis Technology
Sensor Technology
Wear-out Section
Thermo Application
Nozzle Application
Laser Technology

Laser and Sensor Technology

Analysis Technology

Slight tooling increase and final profile forming are the key for our customer production improvement.

TÜV CERT
DIN EN ISO 9001:2000
Certificate: 01 100 045014

Properties of Ceramic Materials

Material		Aluminium oxide	Zirconium oxide	Silicon nitride	Aluminium nitride	Silicon carbide
Proberties		**Al_2O_3**	**ZrO_2 - Y_2O_3**	**SSN**	**AIN**	**LPSSiC**
		99,7%	PSZ			
Structure						
Density	g/cm^3	3,9	6,05	3,22	3,24	3,18
Open Porosity	%	0	0	0	0	0
Mechanical Proberties						
Bending Test Strength	MPa	400	1200	700	350	590
Hardness	HV	2100	1300	1550	1400	2990
Fracture Toughness	$Mpa*m^{1/2}$	5,2	8	7	3,4	6,9
Elasticity Module	GPa	390	200	290	310	-
Weibull Module	m	12	22	15	10	12
Thermo Properties						
Maximal Application Temperature at Air	°C	1700	1200	1450	1400	1600
Thermo conductibillity at 100 degrees Celsius	W/m*K	30	2	40	140	30
Expansion Coefficient	10^{-6} K	8,2	10,5	3,2	3,9	4,9
Temperature Variation Stability	K	120	300	450	500	450
Electrical Proberties						
Specific Electric Resistance at 20 degrees Celsius	Ohm*cm	10^{14}	10^{10}	10^{11}	10^{12}	0,2 - 0,5
at 1000 degrees Celsius	Ohm*cm	10^7	10^3	10^7	-	-
Dielectric strength	KV/mm	> 25	-	-	> 25	-

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