GROUPE RUBIS PRECIS MICROPIERRE HIGH TECH CERAM
HIGH TECH IN PRECISION

MATERIALS TABLE

	ALUMINA	ZIRCONIA		BORON CARBIDE	SILICON CARBIDE	SILICON NITRIDE	ALUMINIUM NITRIDE	QUARTZ	ZERODUR®	MACOR®
	AL 96 à 99,7	MgO	Y2O3	B4C	SIC	Si3N4	AIN	SiO2		
PHYSICAL PROPERTIES										
Density (g/cm3)	3.98	5.7	6	2,45 - 2,52	>3,16	3.2	3.32	2.22	2.53	2.52
Porosity	0	0	0	< 0,1	0	0	0	0	0	0
MECHANICAL PROPERTIES										
Max. Working Temperature (°C)	1850	900	1200	2000	1450	1400	1800	1200	600	800
Hardness (vickers)	2300	1100	1300	3800	2600	1600	1100	500	630 (knoup)	/
Young's Modulus (GPa)	310	200	200	450	410	315	310	50	91	67
Poisson's ratio	0.27	0.29	0.29	0.15	0.17	/	/	/	0.24	0.26
Flexural strength (MPa)	380	500	1000	450	400	900	>300	75 - 90		94
Tenacity (MPa.m1/2)	2_3	8	10	3	4	7.5	3.35	0.6		/
Structural performance (Mpa 20c)	2500	2000	2200	1400 - 3400	2200	2500	>2000	600 - 720		350
THERMAL PROPERTIES										
Linear expansion (10-6)	8.6	10	11	4.5	4_5	3.1	5.6	0.4	0.05	12.6
Specific heat (J/kg/K)	1025	400	400	/	0.6	/	/	750	881	/
Thermal conductivity (W/mk)	26 - 35	2.5	2.5	/	110	19	180	0,99 - 1,63	1.646	1.5
Melting point (°C)	2050	2700	2700	2450	2500	/	/	1710	/	/
Thermal shock resistance	low	good	low	/	very good	very good	excellent	good	good	good
ELECTRIC PROPERTIES										
Electrical resistivity (Ωm)	> 10^{12}	>10^{7}	>10^{7}	/	10^{6}	10^{10}	5 x 10^{12}	10^{16}	2,10^{11}	10^{16}
Dielectric rigidity (Kv/mm)	12	/	/	/	/	15	>20	/	/	>20
Dielectric Constant (1MHz)	0	/	/	/	/	/	8.6	3,6(10 GH)	/	6 (1kHg)

The values are for guidance only