



Technical Ceramics

- Advice
- Design
- Production
- Supply

Gimex technische keramiek
 een divisie van **Ammertech BV**
 Grasbeemd 21 | NL-5705 DE | HELMOND
 T +31 (0)345 57 42 55 | F +31 (0)345 57 48 66
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Quartz inspection report

1) Chemical purity(PPM): Vitreous silica SiO₂: ≥ 99.995%

Fe	Mg	Mn	K	Li	Co	Ni	Cu	Na	B	Ti	Ca	Al
1.2	0.4	0.1	2.0	0.5	<0.02	0.03	0.57	2.3	0.8	0.1	0.8	16

2) Optical properties: Index refractive and scattering(na=1.45845)

20°C	UV	IR	RAY
1.4586±4*10 ⁻⁴	1.5341-1-1492	1.45251-1.47451	1.4698-1.45413
Coefficient of scattering Nf-Nc=0.00674±3*10 ⁻⁵			

3) Thermal properties

Coefficient of mean expansion *10 ⁻⁷						
Temperature	100	300	500	700	900	1100
Coefficient of mean expansion	5.11	5.92	5.65	5.73	5.52	5.48

Thermal conductivity W/m°C						
Temperature	100	300	500	700	900	1100
Thermal conductivity	1.38	1.47	1.55	1.67	1.84	2.68

Specific heat J/Kg °C				
Temperature	20	100	500	900
Specific heat	690	772	964	1052

4) Electrical properties

Dielectric constant (e)	20°C	23°C	28°C	
	3.7	3.77	3.81	
Dielectric loss factor (tgδ)	1 kilohertz	1-1000 MHZ	3*10 ⁴ MHZ	
	0.0005	0.0001	0.0004	
Electrical resistivity(Ωcm)	20°C	400°C	800°C	1200°C
	10 ¹⁶	10 ^{1°}	6.3 x 10 ⁶	1.3 x 10 ⁵

5) Reactivity

Al ₂ O ₃	MgO	CaO	ZnO	Fe-oxide	CuO	BaO	Basic-Oxide	PbO
>1200°C	>950°C	>1000°C	>800°C	>950°C	>900°C	>900°C	>800°C	Fusion point



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6) Mechanical properties

Density	2.21 g/cm ³
Hardness	5.5-5.6 N/mm ²
Compressive strength	6000 N/mm ²
Torsional coefficient	3.1 x 10 ⁴ N/mm ²
Tensile strength	50 N/mm ²
Flexural strength	67 N/mm ²
Niu strength	30 N/mm ²
Sound velocity	5720 ms

7) Temperature: long time use: 1100°C – short time use: 1450°C

Straint point:	Annealing point:	Softening point:	Fusion point:
1000-1125°C	1180°C	1600-1710°C	1730°C