Properties

I. Thermal

	SI/Metric	Imperial
Coefficient of Expansion		
CTE -100°C → 25°C	81 x 10^{-7} /°C	45 x 10^{-7} /°F
CTE 25°C → 300°C	90 x 10^{-7} /°C	50 x 10^{-7} /°F
CTE 25°C → 600°C	112 x 10^{-7} /°C	62 x 10^{-7} /°F
CTE 25°C → 800°C	123 x 10^{-7} /°C	68 x 10^{-7} /°F
Specific Heat, 25°C	0,79 kJ/kg°C	0.19 Btu/lb°F
Thermal Conductivity, 25°C	1,46 W/m°C	10.16 Btu.in/hr.ft²°F
Thermal Diffusivity, 25°C	7,3 x 10^{-7} m²/s	0.028 ft²/hr
Continuous Operating Temperature	800°C	1472°F
Maximum No Load Temperature	1000°C	1832°F

II. Mechanical

	SI/Metric	Imperial
Density	2,52 g/cm³	157 lbs/ft³
Porosity	0%	0%
Young's Modulus, 25°C (Modulus of Elasticity)	66,9 GPa	9.7 x 10^6 PSI
Poisson's Ratio	0,29	0.29
Shear Modulus, 25°C	25,5 GPa	3.7 x 10^6 PSI
Knoop Hardness, 100g	250 kg/mm²	
Modulus of Rupture, 25°C (Flexural Strength)	94 MPa (Minimum specified average value)	13 600 PSI
Compressive Strength (After polishing)	345 MPa up to 900 MPa	49 900 PSI 130 000 PSI

III. Electrical

	SI/Metric	Imperial
Dielectric Constant, 25°C		
1 kHz	6,01	6.01
8,5 GHz	5,64	5.64
Loss Tangent, 25°C		
1 kHz	0,0040	0.0040
8,5 GHz	0,0025	0.0025
Dielectric Strength (AC) avg. 25°C, under 0,03 mm thickness.	45 kV/mm	1143 V/mil
Dielectric Strength (DC) avg. 25°C, under 0,03 mm thickness	129 kV/mm	3277 V/mil
DC Volume Resistivity, 25°C	10^{17} Ohm.cm	10^{17} Ohm.cm

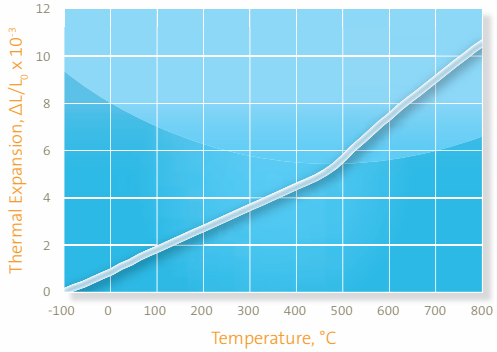
IV. Chemical

				Weight Loss (mg/cm²)
Solution	pH	Time	Temp.	Gravimetric
5% HCl (Hydrochloric Acid)	0,1	24 hrs	95°C	~100
0,002 N HNO_3 (Nitric Acid)	2,8	24 hrs	95°C	~0,6
0,1 N $NaHCO_3$ (Sodium Bicarbonate)	8,4	24 hrs	95°C	~0,3
0,02 N Na_2CO_3 (Sodium Carbonate)	10,9	6 hrs	95°C	~0,1
5% NaOH (Sodium Hydroxide)	13,2	6 hrs	95°C	~10

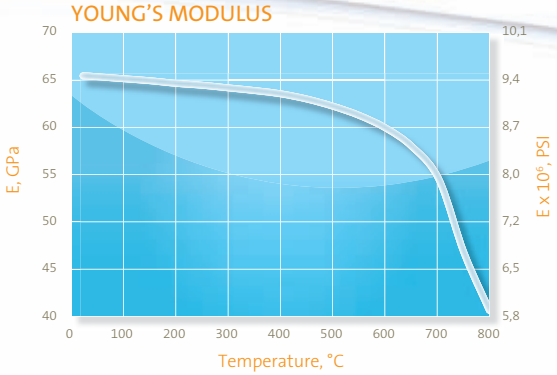
Chemical durability		Class
DIN 12111 / NF ISO 719	Water	HGB2
DIN 12116	Acid	4
DIN 52322 / ISO 695	Alkali	A3

Technical Data

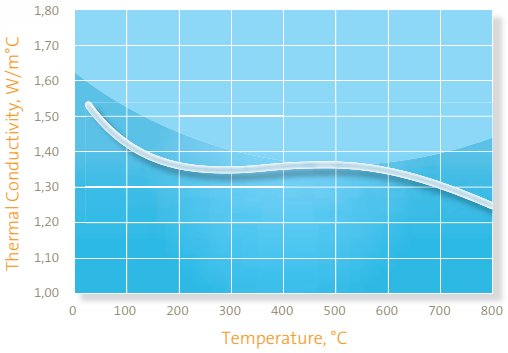
THERMAL EXPANSION



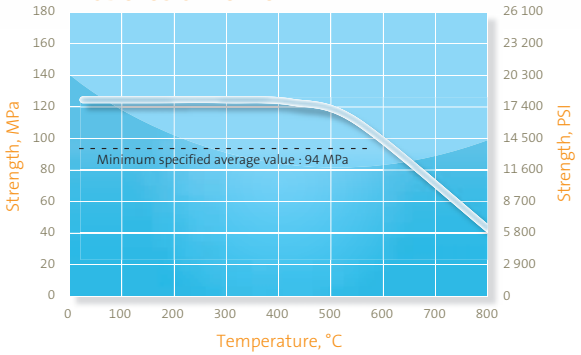
YOUNG'S MODULUS



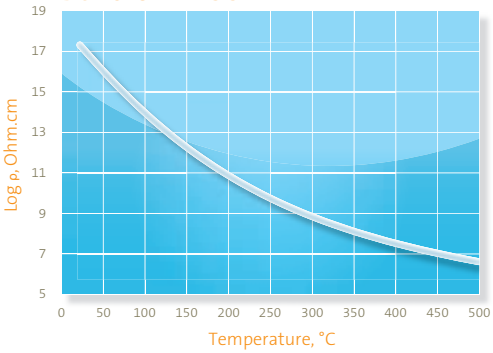
THERMAL CONDUCTIVITY



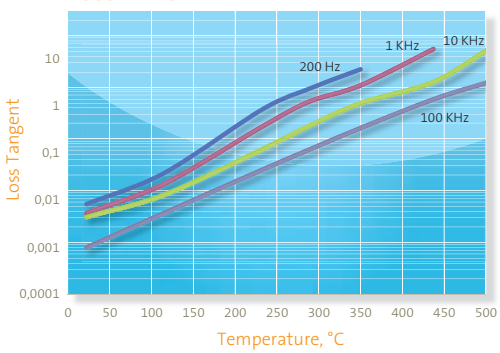
MODULUS OF RUPTURE



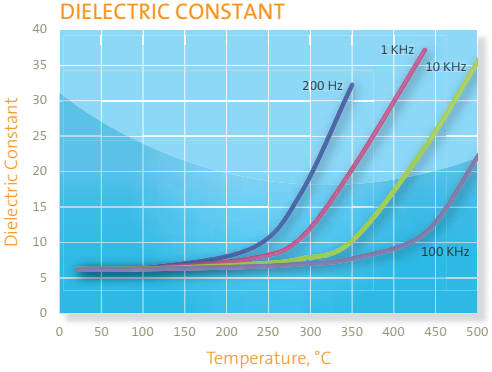
DC VOLUME RESISTIVITY



LOSS TANGENT



DIELECTRIC CONSTANT



Actual properties of specific production batches may vary.
Stated general properties reflect results from regular tests on sample quantities in Corning labs.