

Macor Properties

Macor Machinable Glass Ceramic

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

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)

Note: Macro is a machinable ceramic produced by Corning Inc

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. <small>(25°C, under 0,3 mm thickness.)</small>	45 kV/mm	1143 V/mil
Dielectric Strength (DC) avg. <small>(25°C, under 0,3 mm thickness)</small>	129 kV/mm	3277 V/mil
DC Volume Resistivity, 25°C	10 ¹⁷ Ohm.cm	10 ¹⁷ Ohm.cm

Chemical				Weight Loss (mg/cm ²)	
Solution	pH	Time	Temp.	Gravimetric	
5% HCl <small>(Hydrochloric Acid)</small>	0,1	24 hrs	95°C	~100	
0,002 N HNO₃ <small>(Nitric Acid)</small>	2,8	24 hrs	95°C	~0,6	
0,1 N NaHCO₃ <small>(Sodium Bicarbonate)</small>	8,4	24 hrs	95°C	~0,3	
0,02 N Na₂CO₃ <small>(Sodium Carbonate)</small>	10,9	6 hrs	95°C	~0,1	
5% NaOH <small>(Sodium Hydroxide)</small>	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	

Note: This value is for reference only and may vary slightly depending on the batch conditions.

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We produce high-quality and complex products, providing significantly enhanced performance for customers engineering.

Our comprehensive service range includes material selection, precision machining, surface treatment, and quality testing to ensure that each product can perform its best practical applications.

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