

Data Sheet

MACOR® (Mac-MGCW)

Description

Macor® is the machinable glass ceramic made by Corning Glass and widely used for critically exacting electrical duties. It is a composite of oxides of **Si, Mg, Al, K, B** and **F**.

Prime Features:

- Easily machined into complex shapes and precision components
- Swift and inexpensive to shape using standard machine tools
- Vacuum tight
- Excellent dielectric strength
- Very high volume resistivity
- Low thermal conductivity
- Dimensionally stable

Typical Applications:

- Vacuum feed-thrus
- Defense equipment
- Nuclear related components

Production Capabilities:

- Distributor of Corning MACOR® in USA and France
- Wide variety of sizes stocked
- Machining of simple or complex components to customer specification

Specifications

- Quality Assurance to ISO 9002

Physical Properties

Colour	White	
Bulk Density (fired)	2.52 Mg/m ³	0.091 lb/in ³
Porosity (apparent)	0 (fully dense) % nominal	
Knoop Hardness	250 kg/mm ²	
Compressive Strength	345 MPa	50,000 lb/in ²
Flexural Strength	89 MPa	13,000 lb/in ²
Young's Modulus	68 GPa	9.7 lb/in ²
Thermal Conductivity (Calculated)	1.46 W/m.K	
Thermal Expansion Coefficient	9.3 @25-300C, 10 ⁻⁶ /C	5.2 @77-570°F, 10 ⁻⁶ /°F
	9.3 @25-1500C, 10 ⁻⁶ /C	5.2 @77-2730°F, 10 ⁻⁶ /°F
Maximum no-load Temperature	1000°C	1830°F
Dielectric Strength	39.4 dc kV/mm	1000 V/mil
Dielectric Constant, K ¹	6.03 1kHz @ 25C [77°F]	6.03 1MHz @ 25C [77°F]
Loss Factor, K ¹ .tan δ	0.0047 1kHz @ 25C [77°F]	0.0047 1MHz @ 25C [77°F]
Volume Resistivity	> 10 ¹⁴ @ 25C [77°F]	> 10 ¹⁴ @ 300C [570°F]