

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

Morgan Advanced Materials is a global materials engineering company which designs and manufactures a wide range of high specification products with extraordinary properties, across multiple sectors and geographies. From an extensive range of advanced materials we produce components, assemblies and systems that deliver significantly enhanced performance for our customers' products and processes. Our engineered solutions are produced to high tolerances and many are designed for use in extreme environments.

We design and manufacture products for demanding applications in a variety of markets using a comprehensive range of advanced ceramic, glass, precious metal, piezoelectric and dielectric materials. We utilise core competences of applications engineering and superior materials technology, together with state of the art fully integrated manufacturing processes to offer precision ceramic components, ceramic-to-metal assemblies and special coatings for use in a variety of applications.