

MICATHERM™



 Morgan

 MATROC

We can manufacture your components in MICATHERM™ glass-bonded mica.



Automotive applications benefit from the electrical and thermal insulation properties of MICATHERM™



MICATHERM™ components for the aerospace industry where precision is particularly important.



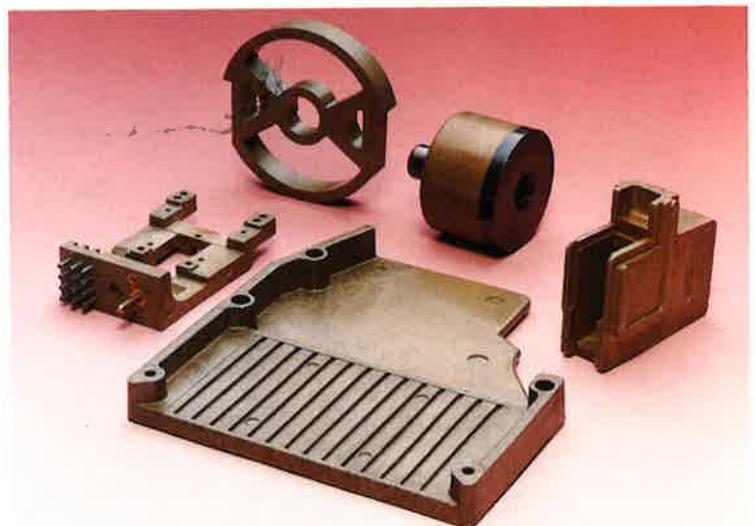
Domestic appliance components, note the thin wall sections and metal inserts. Close tolerances and temperature stability requirements are met by MICATHERM™

MICATHERM™ glass-bonded mica is a mouldable, machinable ceramic material. Its properties enable it to be formed with the precision of plastic injection moulding, whilst maintaining many advantages of ceramics. It has a coefficient of expansion close to many metals and can therefore accommodate moulded-in metal inserts.

After successfully completing our initial development programme, we can now commercially offer the service of producing accurately formed components in MICATHERM™ glass-bonded mica. Now, engineers have a viable alternative material and manufacturing facility which can help achieve an elegant, cost-effective solution to their design problems.

Advantages

- ★ Precision of plastic injection moulding.
- ★ Dimensional and physical stability to 350°C which is far in excess of any existing thermoplastic material.
- ★ Will not burn; hence will not emit toxic fumes.
- ★ Resistant to solvents.
- ★ Suitable for high or low temperature applications.
- ★ Resistant to radiation and ultraviolet light.
- ★ Excellent electrical insulator.
- ★ Resistant to electric arcing.
- ★ Low electrical loss.
- ★ Thermal expansion close to metal, permitting metal inserts to be moulded-in.
- ★ Thin wall sections can be achieved.
- ★ Excellent thermal insulation and thermal shock resistance.
- ★ Surfaces can be coated to increase wear resistance or provide surface conductivity.



Heavy electrical components including arc barriers, insulators and spacers. MICATHERM™ was selected because of its inherent electrical properties.

MICATHERM™ mouldable ceramic, bridges the gap between plastics and conventional ceramics.

▲ DIMENSIONAL TOLERANCE

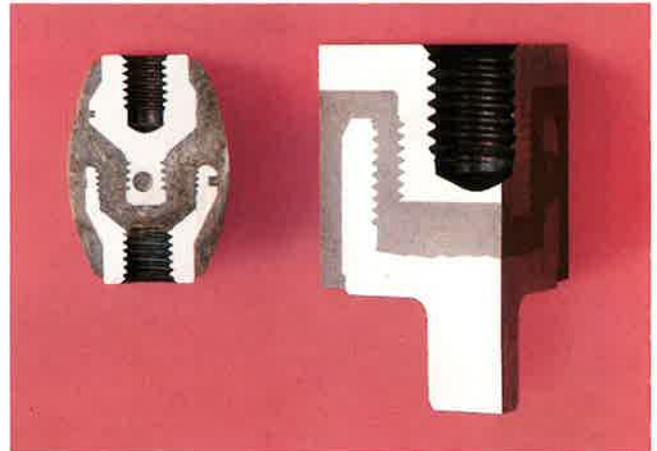
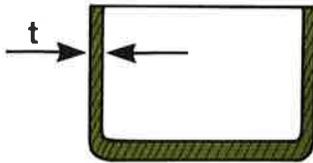
Ceramics $\pm 1\%$
MICATHERM™ $\pm 0.1\%$

▲ METAL INSERTS (moulded-in)

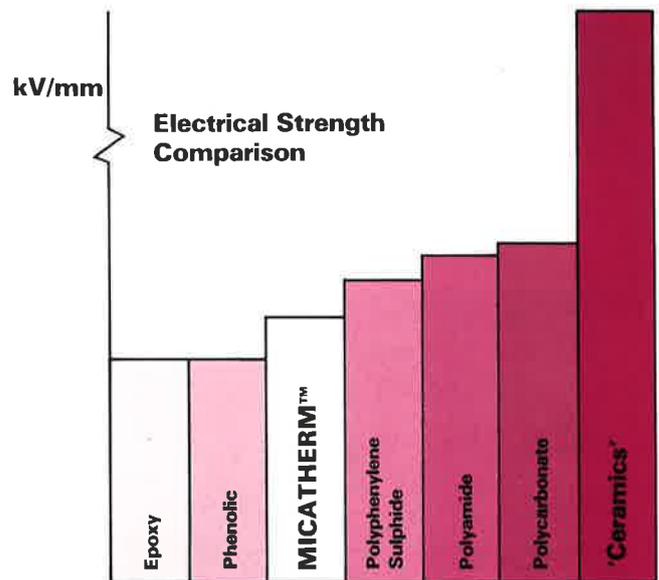
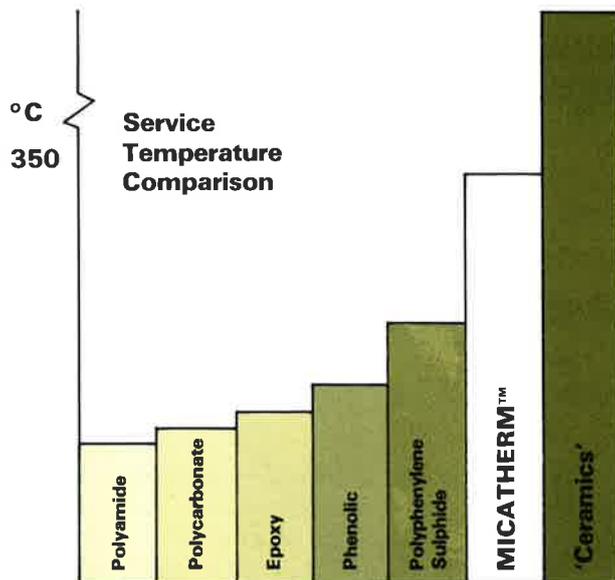
Ceramics – impracticable
Plastics – practicable
MICATHERM™ – practicable

▲ MINIMUM WALL THICKNESS

MICATHERM™ $t = 0.5\text{mm}$



Moulded-in metal inserts are possible because the thermal expansion of MICATHERM™ and metal are similar.



Lighting components, where the ability to accept moulded-in inserts is particularly important.

Material Characteristics

Specific gravity	4.0
Porosity	Nil
Colour	Green/Brown
Dielectric strength kV/mm	9
Volume resistivity Ω/cm^3	10^{13}
Flexural strength kg/cm^2	425
Compressive strength kg/cm^2	1375
Thermal conductivity C.G.S.	0.015
Maximum continuous operating temperature °C	350
Coefficient of thermal expansion ($10^{-6}\text{mm}/\text{mm}/^\circ\text{C}$)	11.3

Above table and graphs are for guidance only, no other guarantee is implied.

Morgan Matroc Ltd.

Park Royal Division.



Offices and Factory

At Park Royal, we have been making technical ceramics for over 50 years. The wealth of knowledge and experience thus accumulated, enables us to provide a comprehensive service to designers and engineers.

For example, we will always welcome a dialogue with our customers during the early stages of their project.

We will also seek to develop a close working relationship, since we know from decades of experience, that this will usually lead to the most cost-effective application of our ceramic technology. Additionally, we can offer a total design package, from concept, through prototype and development, to the finished article.

All MICATHERM™ glass-bonded mica components are manufactured at Park Royal, where production commenced on a small scale during 1984. By late 1985, our expanded production facilities enabled us to make MICATHERM™ components generally available.



Morgan Matroc

Leaders in ceramic technology

Matroc is the name given to Morgan Crucible's European technical ceramics companies.

Matroc operations are based in seven main locations; three in the UK and four in Europe. Matroc is also supported by specialist agents and the Morgan group's world-wide operations.

Almost all conceivable ceramic materials and processes exist in Morgan Matroc, together with some of the most modern production equipment available in the world. Few, if any, of our competitors can match the total ceramics capability offered by our companies.

Morgan Matroc Limited

Park Royal Division

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Location

Park Royal is 70km north of London and has convenient main road and rail links. Luton Airport is 23km to the south-west and Stansted Airport is 44km to the south-east.

