

HEAT-RESISTANT MATERIAL SERIES **MICALEX**

Advanced-technology material. Machineable ceramics made from natural mica, artificial mica and special glass with hot forming.

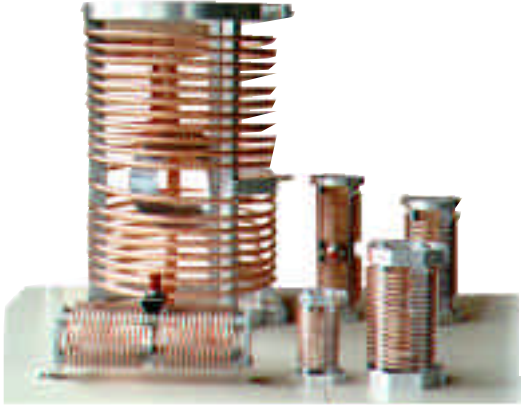


Specifications for MICALEX			
	Max.thickness	Min.thickness	Material dimension
M-31 (Natural mica)	35mm	3.2mm	300 × 300mm 280 × 500mm
M-25 (Artificialmica)	35mm	3.2mm	290 × 340mm

- Excellent electrical insulation.
- Excellent high frequency properties.
- Heat, pressure and arc resistance.
- Superior workability.
- Excellent dimensional accuracy and form-stability.

Today, heat-resistance materials play an important role in semiconductor which is the core of our computer world. MICALEX is on the cutting edge of heat-resistance material technology by minimizing the generation of gas caused by the corrosion of glass material at a temperature of 700 .With its excellent accuracy and stability, MICALEX is behind the scenes supporting the microchip industry.

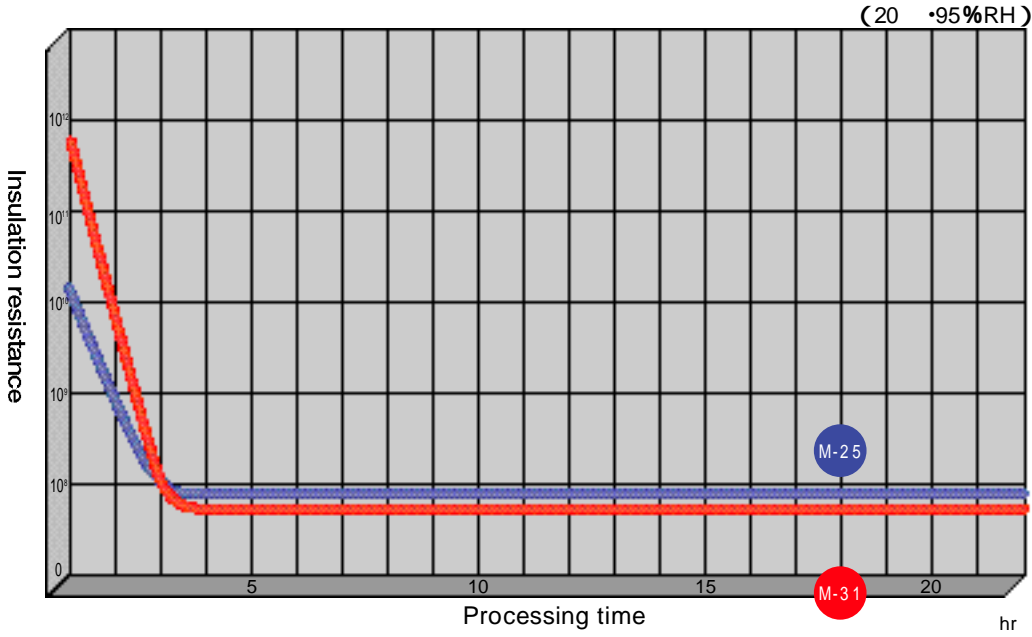
Physical Properties of MICALEX			
Test Items	Unit	M-25 (Artificial mica)	M-31 (Natural mica)
Heat resistance		700	400
Flexural strength	MPa	73	108
Compressive strength	MPa	216	226
Tensile strength	MPa	148	115
Izod impact strength	J/cm	0.4	0.6
Water absorption	%	0.002	0.005
Thermal conductivity	W/m · K	1.42	1.24
Coefficient of thermal expansion (Vertical to laminations)	1/	7.0×10^{-6}	9.0×10^{-6}
Specific gravity		2.5	2.6
Withstand voltage (1 min.)	kV/mm	10	15
Volume resistivity	J · cm	1.9×10^{14}	2.0×10^{14}
Insulation resistance	M	2.2×10^5	2.5×10^5
Arc resistance	sec	420	246



Example of application in a heater

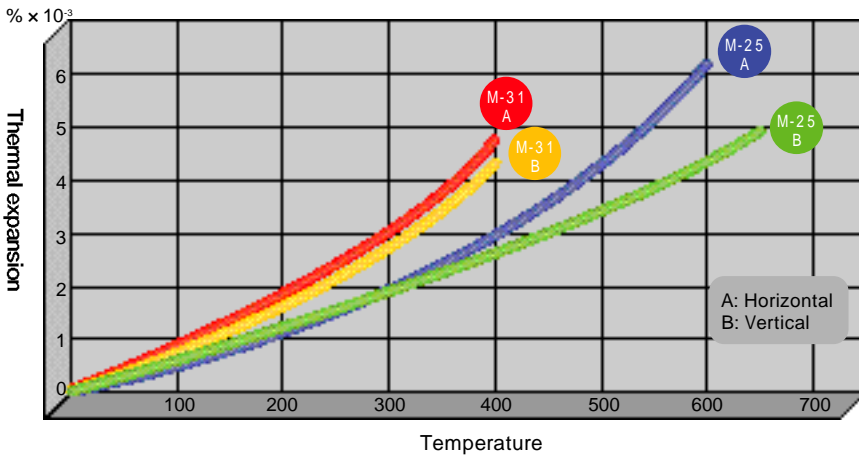


Machined example of MICALEX



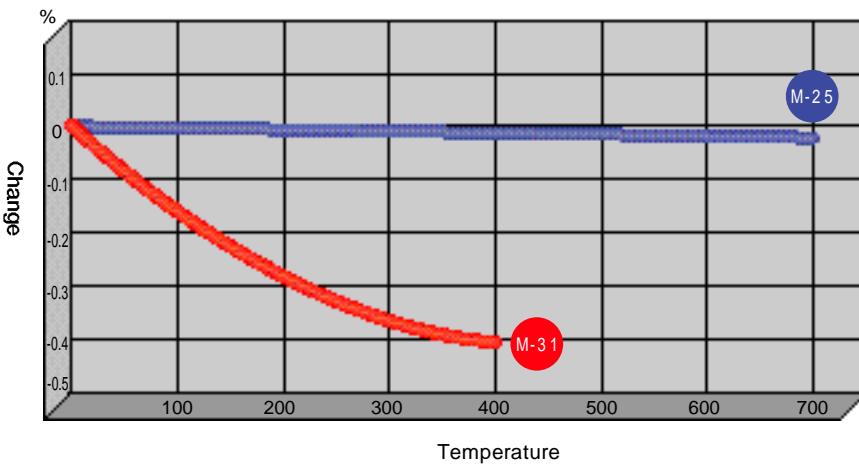
Insulation resistance in high humidity.

The chart on the left shows the transition of insulation resistance as time passes in 95% humidity. MICALEX has high insulation performance even in high humidity and displays excellent water and oil resistance.



Thermal expansion curve

Thermal expansion is minimized, strain and distortion are prevented well with MICALEX. It can maintain excellent dimensional accuracy even at high temperatures. MICALEX displays a special ability as a component of devices related to semiconductors and heat-resistant materials for heaters.



Change in weight upon heating

Upon heating matter, organic substances are burned and they lose weight. MICALEX is composed of an inorganic substance. M-31 is made from natural mica and, therefore, it shows greater changes of weight compared with M-25.