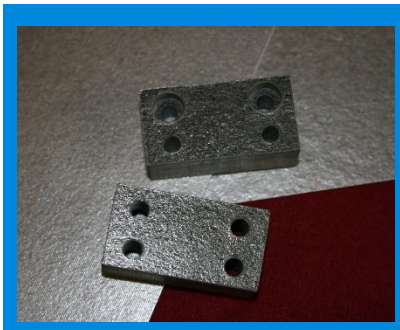
DATA SHEET

Rev. N° 0 - 25.04.2023



8MS.003
Technic Composite Material Mica-Silicone

Applications

- Guide for bottles released from a mould
- High-voltage applications
- Sealing of internal network connections
- Construction of induction furnaces
- Forging presses

Overview

Final Advanced Materials processes mica in various forms. It can be employed in the form of a textile, for flexible solutions, but also in the form of a solid sheet material. Regardless of the product selected, the properties of mica make it an ideal candidate for thermal insulation applications.

MC-5000HT mica is comprised of 90% phlogopite mica and 10% silicone binder. Mica panels can be used as a replacement for products containing asbestos. The continuous service temperature is 1,000°C.

Important: it is necessary for MC5000-HT to be compressed between two plates or flanges. Mechanical compression prevents any crumbling of the product in response to the action of temperature, given that the silicone binder deteriorates at temperatures in excess of 300 °C, and replacement of the component will therefore be necessary after dismantling.

Mica composite materials are mainly used in the following areas:

- In the glass industry, the thermal properties and abrasion resistance of MC-5000 are advantageous.
- In the gas distribution sector, its pressure resistance and high-temperature resistance permit the prevention of gas leaks, even during a fire.
- In the induction furnace construction sector, MC-5000 is employed for its thermal and electrical insulating properties, and for its permeability to high-frequency waves.
- Reduction of heat losses between the plates of forging presses, on the grounds of its resistance to pressure at high temperatures

Physical variables included in this documentation are provided by way of indication only and do not, under any circumstances, constitute a contractual undertaking. Please contact our technical service if you require any additional information.

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Main Characteristics

- Low thermal conductivity
- Good resistance to high temperatures
- A good electrical insulator
- Easy to machine and glue
- Non-toxic
- High mechanical strength
- High compressive strength at high temperature
- Excellent resistance to flame
- Good electrical arcing resistance and erosion resistance

Dimensions

Product	Type	Dimensions	Tolerances
MC-5000HT	**Board**	For every thickness: 1,220 x 1,020 mm and 1,200 x 1,000 mm For 5, 10 and 15 mm thickness: 2,420 x 1,020 mm	±0,7 % thickness 2 mm -5 % to +7% from 2.1 to 6 mm -4 % to +5 % from 6.1 to 40 mm -2 % to +3% from 40.1 to 100 mm
Customed designs are available on request			

Other products available

Depending upon requirements, it is also possible for this composite mica material to be procured in other forms (subject to the confirmation of a minimum order quantity and lead time):

MC-5000 mica tubing (with similar characteristics to panels) up to a diameter of 300 mm and a length of 1,100 mm.

Mica paper impregnated with a silicone resin, laminated on a woven glass-fibre base in order to provide temperature resistance, flame resistance and electrical insulation.

This product is essentially used for the production of cables which are fire-resistant at temperatures of 1,000°C.

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FINAL ADVANCED MATERIALS

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Technical Data

Property		Unit	MC-5000HT
Item N°			080-0011
Composition			90 % phlogopite mica 10 % silicon resin
Density		kg/cm³	2,200
			Thermal Properties
Max. Operating Temperature		°C	750
Max. Peak Temperature		°C	1,000
Weight Loss			V-0 (UL 94) < 2 % IEC 371-2
Thermal Conductivity ⊥ to the board	at 23 °C	W.m⁻¹.K⁻¹	0.30
	at 100 °C		0.31
	at 200 °C		0.32
	at 300 °C		0.345
			Mechanical Properties
Compressive Strength ⊥ to the board ISO 604	at 20 °C	MPa	300
	at 200 °C		240
Flexural Strength IEC 371-2		MPa	120
Tensile Strength ISO 527		MPa	110
			Electrical Properties
Dielectric Strength IEC 371-2		kV/mm	25
			Chemical Properties
Water Absorption IEC 371-2		%	< 0.5
Resistance to chemicals			excellent
Thermal Expansion Coefficient		10⁻⁶ K⁻¹	10

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