Continental Trade
Sp. z o.o.

MICA AND MICANITE

Properties and products

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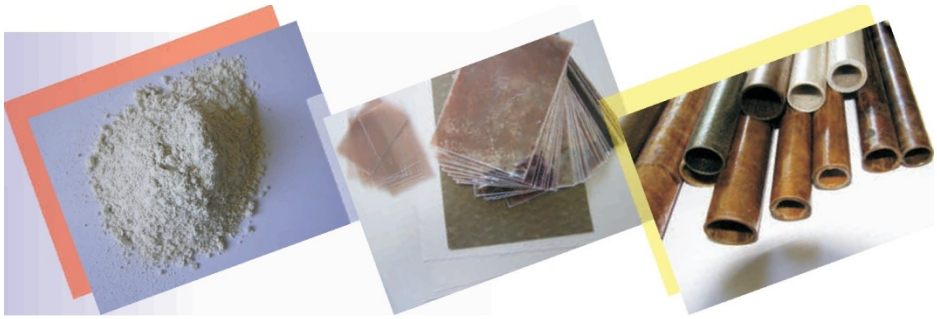
NATURAL MICA PROPERTIES



Property	Unit	Muscovite	Phlogopite
Color		ruby red, green	yellowish brown
Density	g/cm^3	2,6 – 3,2	2,6 – 3,2
Specific heat	J / (kg K)	0,21	0,21
Hardness	Mohs	2,8 – 3,2	2,3 – 3,0
	Shor's	80 – 150	70 – 100
Tensile strength	kg/cm^2	~ 1 750	~ 1 000
Shear strength	kg/cm^2	2 200 - 2 700	1 000 - 1 300
Compression strength	kg/cm^2	1 900 - 2 850	
Modulus of elasticity	kg/cm^2	1,4 - 2,1	1,4 - 2,1
Coefficient of expansion per °C *)		$9x10^{-6}$ - 36 $x10^{-6}$	$30x10^{-6}$ - 60 $x10^{-6}$
Calcining temperature	°C	700 - 800	900 - 1 000
Maximum operating temperature	°C	500 - 600	800 - 900
Thermal conductivity *)	W/(m · °C)	~0,54	~0,419
Humidity	%	4,5	3,0
Moisture absorption		very low	very low
Apparent electric strength	kV /mm (@ 25 - 75 µm thick)	120 - 200	
	kV/25 µm	3,0 – 5,0	
Dielectric strength @ 15 °C	kV /mm (@ 25 - 75 µm thick)	40 – 80	30 - 60
	kV/25 µm	1,0 – 2,0	0,75 – 1,5
Dielectric constant (@ 15 °C)		6 – 7	5 - 6
Power factor (loss tangent) @ 15 °C		0,1 - 0,4 x 10^{-3}	1 - 5 x 10^{-3}
Volume resistivity @25 °C	Ω·cm	$4x10^{13}$ - $2x10^{17}$	$1x10^{12}$ - $1x10^{14}$
Acid reaction		Affected by HF	Affected by H_2SO_4

*) Perpendicular to cleavage plan

NATURAL MICA PRODUCTS

Mica sheets/windows

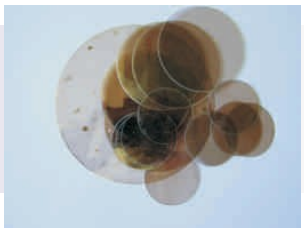
Occurs in sheets of size 6 – 90 cm^2. Thickness from 0,18 to 16,0 mm. Ideal for use as a window in traditional fireplaces, stoves, giving unforgettable stunning visual effects. Can be cut into various shapes

Mica shields

Mica shields provides the best protection possible to flat transparent sight glasses in water and liquid level gauges and columns in high pressure steam boilers. Available for all dimensions of glasses.

Mica disc

Mica discs offered by us are die cut or lathe cut round discs, which find usage in liquid level indicators, breathing apparatus, communication devices, fuses and other end products. Available in many sizes and thicknesses.



Mica flakes

Flakes, usually from 1 to 3 mm, obtained by crushing natural mica blocks, are usually used for decorating plasters, wallpaper and decorations. **Available in many different colors.**

Ground mica (40 µm – 500 µm)

Used for the production of gypsum wallboard, paints, plastics, tires, welding electrodes, sealants, cosmetics, etc.

Micronized mica (10 µm –40 µm)

It is suitably used as filler in paints and plastics and in cosmetics. Especially suitable for industrial paints exposed to harsh environmental conditions and aggressive substances.

Mica paper

Produced by drying the pulp flakes of mica phlogopite or muscovite type. Good thermal and electrical insulator. Used for production of mica tapes and micanite plates.

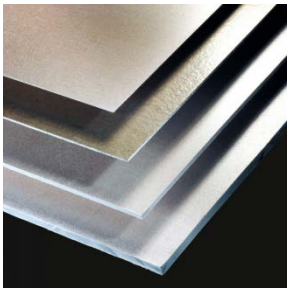
Mica tapes

Produced by bonding mica paper with artificial fibers by epoxy or silicone resin. For electrical and thermal insulation of cables, engines, coils etc.

MICANITE PRODUCTS

Rigid micanite plates

There are three types of rigid plates::
- **muscovite** rigid plates: R-5660-H1
- **phlogopite** rigid plates: R-5660-H3
- **synthetic** rigid plates: R-5660-H2



Item	Unit	R-5660-H1	R-5660-H3	R-5660-H2
Mica paper		Muscovite	Phlogopite	Synthetic
Mica content	%	ca. 90	ca. 90	ca. 90
Bond content	%	ca. 10	ca. 10	ca. 10
Density	g/cm^3	1,6 - 2,45	1,6 - 2,45	2,2 - 2,3
Heat resistant				
- continuous work	°C	500	750	900
- intermittent work	°C	800	1000	1100
Heat loss at 500 °C	%	<1	<1	<1
Heat loss at 700 °C	%	<2	<2	
Water absorption	%	<1	<1	< 1.5
Dielectric strength	kV/mm	>20	>20	> 25
Insulation resistance at 23 °C	Ω.cm	10^{17}	10^{17}	
Insulation resistance at 500 °C	Ω.cm	10^{12}	10^{12}	
Flame resistance		90V0	90V0	
Test for flammability	s	<4	<4	
Compressive strength at 20°C	MPa		330	
Compressive strength at 200°C	MPa		240	
Tensile strength	MPa		110	140
Flexural strength	MPa		170	180

Flexible micanite plates

There are two types of flexible plates:
- **muscovite** plates: R-5660-S1
- **phlogopite** plates: R-5660-s3

Item	Unit	E-5660-S1	E-5660-S3
Mica paper		Muscovite	Phlogopite
Mica content	%	ca. 90	ca. 90
Bond content	%	ca. 10	ca. 10
Density	g/cm^3	1,6 - 2,0	1,6 - 2,0
Heat resistant			
- continuous work	°C	500	750
- intermittent work	°C	800	1000
Heat loss at 500 °C	%	<1	<1
Heat loss at 700 °C	%	<2	<2
Flexural strength	N/mm^2	<1	<1
Dielectric strength	kV/mm	>15	>15
Flame resistance		90V0	90V0
Tensile strength	N/mm^2		20
Compressibility	%		15
Return from deformation	%		40
Relaxation strength	N/mm^2		40

Micanite washers

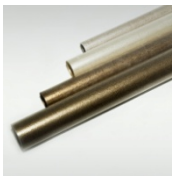
We supply micanite washers:
- based on **muscovite** - working temperature up to 450 °C
- based on **phlogopite** - working temperature up to 750 °C
- based on **synthetic mica** - working temperature up to 1000 ° C

We deliver washers in different shapes and sizes according to customer requirements.


Micanite tubes

Availability
- length: from 10 mm to 1000 mm
- internal diameter: from 8 mm to 300 mm
- customized sizes for special customer request.

Muscovite tubes working temperature is 550 °C, **phlogopite** tubes working temperature is up to 750°C.

Micanite insulators

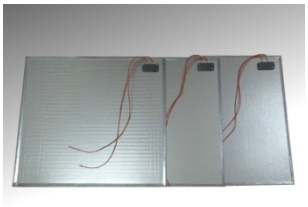
Mica insulators are formed from mixture of mica, glass and other mineral materials. Molten particles of glass or mineral material combine with of mica flakes to form a dense and solid mass. They can operate at temperatures up to 400 ° C. Various types are available depending on application.


Micanite heating elements

The etched foil inserted between two mica elements bonded at high temperature and pressure, forms the heating element highly resistant to delamination. Thus prepared heaters are lighter thinner and more thermally efficient than standard heating elements.

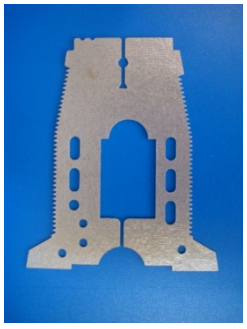
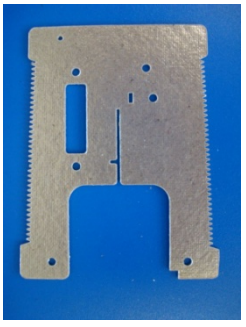
Infrared radiators

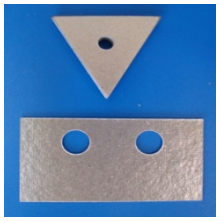
Infrared heaters are panels that generate radiation in the far infrared, felt as heat. The heating is etched resistive metal foil covered with a specially prepared mica paper layer. Wide range of supply voltage and power panels create a wide range of applications.

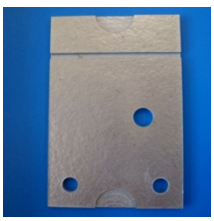



Special elements

We deliver items that meet the special customer's requirements. Basis to supplied documentation we can prepare complex shapes from the micanite plates and tubes in wide range of sizes. Depending on operational requirements, elements may be made using phlogopite, muscovite or synthetic mica.





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