

Cogetherm® Technical Data Sheet

Product Description:

Cogetherm is a mica laminate designed for electro-mechanical and thermo-mechanical applications requiring one or more of the following properties:

- Excellent resistance to heat and/or open flame up to 1832°F (1000°C)
- Low thermal conductivity
- Excellent electrical insulation
- Extremely high resistance to pressure
- High resistance to impact, cracking, and chipping
- Impervious to most chemicals, including oil, grease, and water
- ASBESTOS-FREE
- Ecologically safe and non-toxic

Applications:

An excellent asbestos replacement material, Cogetherm can be used for many high temperature and electrical applications including the following:

- Due to its excellent resistance to pressure at temperature, Cogetherm can be used for press insulation between the platen and the die to minimize the transfer of heat through the press mechanism, saving energy and decreasing process cycle times.
- In the construction of induction and arc furnaces, Cogetherm is used as thermal and electrical insulation, taking advantage of its excellent permeability to high frequency waves.
- In the field of induction heated equipment for brazing aluminum and copper discs to cooking utensils, Cogetherm is the ideal replacement for asbestos-cement plates.
- Cogetherm is used in high voltage appliances due to its dielectric qualities and its resistance to electric arc and erosion.
- In the distribution of gases through pipes, internal network connections are sealed using Cogetherm gaskets due to its resistance to pressure and its extraordinary thermal properties which result in the prevention of gas leaks, even during a fire.
- Applications which require very clean, dust-free, abrasion resistant insulation with extremely low permeability to water and oil are well suited for Cogetherm. Some examples are insulators & pads for hot glass handling, electric circuit board parts and electrical insulating components, high temperature insulation for the food processing industry, and any application which requires a clean, dust-free material which will not disperse particles or fibers.

Availability:

Plate Size: 40" x 48" Untrimmed (1016 x 1220 mm Untrimmed)

Usable Area: 39.37" x 47.24" (1000 x 1200 mm)

Thickness: Up to 3" (76 mm)

Tolerance on Thickness:

- Plates from .06" - .2" (1.5 - 5 mm) = ± 7%
- Plates from .2" - 1.2" (5 - 30 mm) = ± 5%
- Plates from 1.2" - 3" (30 - 76 mm) = ± 3%

Cogetherm Technical Data

Property*	Units	Cogetherm-M	Cogetherm-P
Density	#/Ft ³ (g/cm ³)	134 (2.15)	134 (2.15)
Compressive Strength @ 68°F @ 392°F	PSI	58000	47850
	PSI	36250	34800
Flexural Strength	PSI	33350	24650
Tensile Strength	PSI	21750	15950
Dielectric Strength @ 68°F (20°C) @ 752°F (400°C) @ 1112°F (600°C)	V/mil (kV/mm)	625 (25)	625 (25)
	V/mil (kV/mm)	325 (13)	325 (13)
	V/mil (kV/mm)	250 (10)	250 (10)
Tracking Resistance	Volts	500	525
Volume Resistivity @ 68°F (20°C) @ 752°F (400°C) @ 932°F (500°C)	Ohm/cm	>10 ¹⁶	>10 ¹⁶
	Ohm/cm	>10 ¹²	>10 ¹²
	Ohm/cm	>10 ⁹	>10 ⁹
Dielectric Loss @ 160°C	%	<1	<1
Arc Resistance	Seconds	>420	>420
Water Absorption	% After 48 Hrs.	<1	<1
Max. Operating Temp. Cont. Operating Temp.	°F (°C)	1292 (700)	1832 (1000)
	°F (°C)	932 (500)	1292 (700)
Thermal Conductivity (Cross Plane) @ 70°F (21°C) @ 500°F (260°C) @ 1000°F (538°C) @1400°F (760°C) @1800°F (982°C)	BTU-in./hr.-Ft ² .-°F (W/M-K)	1.01 (.15)	1.01 (.15)
		1.19 (.17)	1.19 (.17)
		1.66 (.24)	1.66 (.24)
		N/A	2.41 (.35)
		N/A	3.43 (.50)
Chemical Resistance		Excellent	Excellent
Machinability		Excellent	Excellent

Machining:

Up to .080" (2 mm) thick Cogetherm can be punched. We recommend that tools be fitted with draw rings. Above .080" (2 mm), we recommend machining (sawing, drilling, etc.) with high speed steel, tungsten carbide, or diamond tools and cutters. A hold-down plate is recommended to clamp the mica plate while it is being machined to prevent delamination. Cogetherm can be CNC, laser, or water jet cut.

The Cogetherm properties listed represent typical average values obtained in accordance with accepted test methods and are subject to normal manufacturing variations. They are supplied as a technical service and are subject to change without notice. Check with your supplier to assure current information.

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