

# Speciality Carbon & Graphite

Felts, fabrics, cloths and Strings

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# Graphite And Carbon Felts, Cloths, Fabrics and Cord

Olmec Advanced Materials offer a range of felts and fabrics, from activated graphite battery felts to carbon cloth. The industries served by these materials are varied. Olmec often support novel applications.

Olmec felts are used in filtration systems, cutting edge battery technologies, as insulation and in R&D projects around the world tackling new demands for sustainability.

## Products & Applications

### Activated Graphite PAN Based Battery Felts:

Our activated graphite PAN based battery felts are engineered for optimum performance in energy storage applications. With exceptional conductivity and durability, these felts ensure long-lasting and efficient battery performance.

### Rayon Graphite Felts:

Find fantastic thermal stability and insulation with our rayon graphite felts. These premium materials are heat-treated to withstand extreme temperatures, making them perfect for high-temperature insulation in vacuum furnaces and other demanding environments.

### Carbon Felt

Our carbon felts offer an ideal product for use in applications such as filtration systems and high temperature applications such as vacuum and inert atmosphere furnaces.

### Activated Carbon Cloth:

Our activated carbon cloth offers superior adsorption properties, making it ideal for air and water purification, gas masks, medical applications, and more. With a soft texture and lightweight design, it provides exceptional performance while ensuring comfort and durability.

### Carbon Cord/ String:

An excellent binding tool for insulation in high temperature applications such as vacuum furnaces.



## Product: GS-60B

### Pan-based graphitised battery felts

Olmec's GS-60B is a graphitised, activated, PAN based carbon felt. This material is referred to as a 'graphite felt' as it is a carbon felt which has undergone the graphitisation process. The felt is designed for high performance as a battery felt, meaning that it is most commonly used as permeable electrodes in high temperature batteries like redox flow batteries. These felts can be used as anodes and cathodes, and come in a range of thicknesses. Please enquire for further information.

### Properties:

Carbon Content	>99	
Ash/ %	<0.2	
Bulk Density (g/cm <sup>3</sup> )	0.08-0.11	
Specific Surface Area/ (m <sup>2</sup> /g)	2.3-4	
Fibre Peeling Rate (µg/g)	2-3	
Oxidisation rate/ (mass loss/hour @ 600°C Air)	<2.6%	
Porosity / %	85-95	
Surface Resistivity/ mΩ/cm <sup>2</sup>	0.165-0.193	
Internal resistance / mΩ	15.3-26.7	
Energy Efficiency / %	current density 80mA/ cm <sup>2</sup>	85.33
	current density 100mA/ cm <sup>2</sup>	84.22
	current density 110mA/ cm <sup>2</sup>	82.68
Standard sizes	Length (m)	25
	Width (m)	1.22
	Thickness (mm)	2.5, 4.8*

\*Alternative thicknesses & sizes are available upon request.

\*All datasheet properties are typical and subject to variation.

## Product: GS-90 graphitised rayon felt

Rayon Felt is processed up to 2200 Celsius and like our other PAN based graphite and CFF soft felts has exceptionally high purity levels, with ash contents of <0.005%. The rayon soft felt is lower density than the PAN graphite felt and therefore offer superior insulation properties to a PAN graphite felt Rayon felts cause lower levels of skin irritations than PAN based felts Applications include: Photovoltaic Silicon (PV) production and High Temperature vacuum furnaces.

Property	Unit	GS-90
Carbon content	%	>99
Conductivity (Thermal)	W/m <sup>°K</sup>	0.18-0.22
Density	g/cm <sup>3</sup>	0.08-0.10
Processed temperature	°C	2200
Strength (Tensile)	MPa	0.13
Operating Conditions by Media		
Air	°C	<350
Inert atmosphere	°C	<3200
Vacuum	°C	<2200
Size available (thickness)*	mm	10
Roll length	m	15-20
Roll width	m	1.2-1.3

\*other thickness options may be available upon request.

## Product: Activated carbon fibre cloth

Activated carbon fiber cloth is one of the few forms of activated carbon available at Olmec Advanced Materials. This material offers high adsorption capacity and fast adsorption velocity, good regeneration, heat-resistance, acid and alkaline-resistance, and low ash content.

It is used predominantly in air purification, solvent recovery, water treatment systems, the medical and energy industries.

Property	Activated Carbon Fibre Cloth
Surface Area	1300±100m <sup>2</sup> /g
CTC Adsorption	≥ 68%
Benzene Adsorption	≥ 38%
Iodine Value	≥ 1100 mg/g
STD Weight	140 +/-10g/m <sup>2</sup>
Thickness	0.2-0.8 mm
Length of full roll	100m <sup>2</sup>

\*All datasheet properties are typical and subject to variation.

## Product: CF-14 carbon felt

Olmec's CF-14 is a PAN based soft carbon felt, which unlike battery grade felts or GS-90, has not been through the graphitisation process. Our carbon felts offer an ideal product for use in filtration systems and high temperature applications and can be cut easily to shape.

Carbon Content	%	>97
Thermal Conductivity	W/m <sup>°K</sup>	0.19 - 0.25
Density	g/cm <sup>3</sup>	0.14 - 0.16
Processed Temperature	°C	1400
Tensile Strength	MPa	0.18

### Operating Conditions by Media:

Air	°C	<400
Inert Atmosphere	°C	<2200
Vacuum	°C	<1600
Sizes Available	mm	10 & 12*
Roll Length	m	15 - 28
Roll Width	mm	1200

\*Further sizes and thicknesses may be available upon request

## Product: Pan-based GRI (foil faced)

Sometimes referred to as Graphite rigid board or insulation, GRI is used in high temperature applications. Standard Olmec Pan based graphite rigid insulation has graphite foil facing on both sides. High ablation resistance, thermal shock resistance, airflow washing resistance and thermal insulation performance.

Grade		BC-GRI
Density (g/cm <sup>3</sup> )		0.16-0.20
Ash (ppm)		≤ 300
Thermal conductivity (w/mk)		0.2
Electric resistance (mm <sup>2</sup> /m)		35-45
Process temperature (C)		2400
Operation temperature (C)	Air	≤ 400
	Vacuum	≤ 2400
	Inert Gas	≤ 3400
Length (mm)		1500-1700
Width (mm)		1000-1250
Thickness (mm)		20-240
Standard size (mm)		1500*1000*40

## Product: Carbon cord

Olmec carbon cord or string is created using PAN based carbon fibre. Carbon cords perform excellently as a binding tool for insulation in high temperature applications such as vacuum furnaces.

Density	g/cm <sup>3</sup>	1.74–1.79
Carbon content	%	≥99
Thermal Conductivity	W/m <sup>°K</sup>	0.10–0.14
Resistivity	Ωmm <sup>2</sup> /m	20–25
Tensile strength	MPa	450–500
Elongation	%	1.0
Ash	%	≤1.0
Process temperature	°C	2000
Operation Temperature		
Air	°C	≤400
Vacuum	°C	≤2200
Inert gas	°C	≤3200
Standard size	mm x m	Φ2mm,Φ3mm,Φ4mm,Φ6mm x200m