



科学材料站
SCI Materials Hub

Tel: +86 156 0553 2352
Fax: +86 553 7458 388
Email: contact@scimaterials.cn
Website: www.scimaterials.cn

官方合作

碳能一级经销商



Carbon Paper

Gas Diffusion Layer and Electrode for fuel cells

Product Features

1. Offer many types of GDLs for different operating conditions
2. GDL can be customized for specific operating conditions



A. with Micro Porous Layer

Substrate with MPL & PTFE			Carbon Paper			
Measurement	Units	Method	GDL210S	GDL240	GDL280	GDL340
Thickness	mm	TECLOCK SM-114	0.21	0.24	0.28	0.34
Basic Weight	g/m ²	ASTM D-646	85	90	100	125
Air Permeability	sec	Gurley	<225	<85	<200	<200
Through-Plane Resistance	mΩcm ²	Base on ASTM C-611	<15	<15	<10	<10
Tensile Strength (MD)	N/cm	ASTM D-828	35	30	37	45
Tensile Strength (XD)	N/cm		17	18	33	36
Flexural Modulus (MD)	MPa	ASTM D-790	3100	4000	4000	4600
Flexural Modulus (XD)	MPa		1300	1500	1400	2400

B. without Micro Porous Layer and PTFE

Substrate without MPL & PTFE			Carbon Paper			
Measurement	Units	Method	GDS180S	GDS210	GDS250	GDS310
Thickness	mm	TECLOCK SM-114	0.18	0.21	0.25	0.31
Basic Weight	g/m ²	ASTM D-646	50	50	65	80
Air Permeability	sec	Gurley	<10	<10	<10	<10
Through-Plane Resistance	mΩcm ²	Base on ASTM C-611	<7	<6	<6	<5
Tensile Strength (MD)	N/cm	ASTM D-828	25	24	24	20
Tensile Strength (XD)	N/cm		18	20	22	10
Flexural Modulus (MD)	MPa	ASTM D-790	3300	4700	4000	3500
Flexural Modulus (XD)	MPa		1500	1600	1500	2000
Porosity	%	Mercury Intrusion Porosimeter	77	77	77	77

Carbon Paper

Gas Diffusion Layer and Electrode for fuel cells

Product Features

1. Offer many types of GDLs for different operating conditions
2. GDL can be customized for specific operating conditions

New Product



		Carbon Paper			
Measurement	Units	GDS090S (w/o MPL & PTFE)	GDS180SHT (w/o MPL & PTFE)	GDL120S (with MPL & PTFE)	GDL210SHT (with MPL & PTFE)
Thickness	mm	0.09	0.18	0.12	0.21
Basic Weight	g/m ²	50	50	80	85
Air Permeability (Gurley)	sec	<50	<10	<100	<225
Through-Plane Resistance×2	mΩcm ²	<6	<5	<15	<10
Tensile Strength (MD)	N/cm	15	25	20	35
Tensile Strength (XD)	N/cm	10	18	15	17
Voltage Loss×1	mV	<7	<15	<10	<15
Porosity	%	68	77	63	70

※ 1. Voltage loss at 500mA/cm² and 20 N/cm²

※ 2. Through-Plane Resistance(mΩcm²) Four Point measurement, copper plate contact under 200psi, testing area 19.6cm²

Carbon Cloth

Gas Diffusion Layer and Electrode for fuel cells

Product Features

1. Offer many types of GDLs for different operating conditions
2. GDL can be customized for specific operating conditions



A. with Micro Porous Layer

Substrate with MPL & PTFE			Carbon Cloth	Carbon Cloth
Measurement	Units	Method	WIS1010	WIS1011
Thickness	mm	TECLOCK SM-114	0.38	0.41
Basic Weight	g/m ²	ASTM D-646	180	200
Air Permeability	sec	Gurley	<55	<55
Through-Plane Resistance	mΩcm ²	Base on ASTM C-611	<13	<13
Tensile Strength (MD)	N/cm	ASTM D-828	10	10
Tensile Strength (XD)	N/cm		5	5

B. without Micro Porous Layer and PTFE

Substrate without MPL & PTFE			Carbon Cloth	Carbon Cloth
Measurement	Units	Method	WOS1009	WOS1011
Thickness	mm	TECLOCK SM-114	0.33	0.36
Basic Weight	g/m ²	ASTM D-646	120	130
Air Permeability	sec	Gurley	<10	<10
Through-Plane Resistance	mΩcm ²	Base on ASTM C-611	<5	<5
Tensile Strength (MD)	N/cm	ASTM D-828	10	10
Tensile Strength (XD)	N/cm		5	5

Titanium Fiber Paper

Gas Diffusion Layer and
Electrode for fuel cells

Product Features

1. Low resistance
2. Incompressible
3. Hydrogen generator applicable



New Product

		Titanium Fiber Paper			
Measurement	Units	TiP025L	TiP040L	TiP060L	TiP080L
Thickness	mm	0.25	0.4	0.6	0.8
Porosity	%	50-60%	50-60%	50-60%	50-60%

		Titanium Fiber Paper			
Measurement	Units	TiP025H	TiP040H	TiP060H	TiP080H
Thickness	mm	0.25	0.4	0.6	0.8
Porosity	%	60-70%	60-70%	60-70%	60-70%

Carbon Plate

Gas Diffusion Layer and Electrode for fuel cells

New Product

Product Features

1. Offer many types of GDLs for different operating conditions
2. GDL can be customized for specific operating conditions



		Carbon Plate			
Measurement	Units	GPP035 (without MPL & PTFE)	GPP043 (without MPL & PTFE)	GPP050M (with MPL & PTFE)	GPP070M (with MPL & PTFE)
Thickness	mm	0.35	0.43	0.5	0.7
Basic Weight	g/m ²	200	240	300	450
Air Permeability (Gurley)	sec	N/A	N/A	<150	<150
Density	g/cm ³	0.49	0.56	N/A	N/A
Voltage loss※1	mV	<9	<9	<20	<20
Through-Plane Resistance※2	mΩcm ²	<9	<9	<15	<15
Tensile Strength (MD)	N/cm	N/A	N/A	90	200
Tensile Strength (XD)	N/cm	N/A	N/A	40	160

※1. Voltage loss at 500mA/cm² and 20 N/cm²

※2. Through-Plane Resistance(mΩcm²) Four Point measurement, copper plate contact under 200psi, testing area 19.6cm²

Graphite Felt

Electrode for Vanadium Redox Flow Batteries (VRBs)



Product Features

1. Excellent chemical stability
2. Good electrical conductivity
3. Even thickness
4. Long life cycle

		Graphite Felt
Measurement	Units	GF065
Thickness	mm	6.5
Roll Width	mm	1030
Roll Length	Meter	25-35
Basic Weight	g/m ²	590
Carbon Content	%	98.5
Ash Content	%	<0.09
Thermal Conductivity at 1500°C	W/mK	0.1
Tensile Strength	MPa	0.12

New Product

			Graphite Felt	
Measurement	Units	Method	GF020	GF030
Thickness	mm	ISO5084	1.5~3.5	2.5~4.5
Voltage loss	mV	Voltage loss at 500mA/cm ² and 20 N/cm ²	35	35

Insulation Felt

High-temp protection for
vacuums and inert gas
furnaces

Product Features

1. Low thermal conductivity
2. Dimensionally stable at elevated temperature
3. High strength-to-weight ratio
4. Puncture and abrasion resistance
5. Acid and alkali resistance
6. Welding sparks and spatter resistance
7. Excellent flexibility

Measurement	Units	Carbon Felt	Graphite Felt
		CF120	GF100
Thickness	mm	12	10
Roll Width	mm	1200	>1000
Roll Length	Meter	25-35	17-18
Basic Weight	g/m ²	800	500~800
Carbon Content	%	>50	>50
Ash Content	%	<0.2	<0.2
Thermal Conductivity at 1500°C	W/mK	0.15	0.10
Tensile Strength	MPa	0.18	0.20



Insulation Felt

High-temp protection for
vacuums and inert gas
furnaces

Product Features

1. Low thermal conductivity
2. Dimensionally stable at elevated temperature
3. High strength-to-weight ratio
4. Puncture and abrasion resistance
5. Acid and alkali resistance
6. Welding sparks and spatter resistance

New Product



Measurement	Units	Graphite Rigid Felt
Thickness	mm	10
Density	g/cm ³	0.2
Ash Content	%	<0.1
Sheet Size	mm	400*1000

iGS Graphite Sheet

iGS (Intelligent Graphite Sheet) for smart phone, tablet PC, ultrabook, digital camera and camcorder

Product Features

1. Excellent thermal conductivity enables higher heat flow and higher computing speed
2. Light weighted: Only 1/4 of copper and 1/2 of aluminum
3. Flexible as paper and can be bended in three dimension design
4. With low thermal conductivity in z-direction, iGS is able to keep hot spots on one side and maintain its x-y-direction conductivity at the same time
5. Can survive in extreme environment

			iGS Graphite Sheet	
Measurement	Units	Test Method	iGS025	iGS040
Thickness	mm	Micrometer	0.025	0.04
Thermal Conductivity (x,y)	W/mk	Angstrom Method	1500	1250
Thermal Conductivity (z)	W/mk	Laser Flash	10	10
Thermal Diffusivity	cm ² /s	Angstrom Method	7.5	7.5
Density	g/cm ³	Archimedes Law	2.1	1.8
Specific Heat	J/g K	DSC	0.94	0.94
Extensional Strength (x,y)	MPa	ASTM D882	30	15
Bending Test	Frequency	MIT (R5/180°)	>10000	>10000
Electric Conductivity	S/cm	JIS K7194	>13000	>13000
Temperature Condition	°C	Thermometer	-40 ~ 400	-40 ~ 400

*These data are measured at our lab and not guaranteed values.