

Conductive Carbon Paper Current Collector For Fuel Cell And Supercapacitor Electrodes

Item Number: FZ23



Introduction

Engineered for advanced electrochemical systems, this premium conductive carbon paper functions as an exceptional gas diffusion layer and current collector for fuel cell and supercapacitor electrodes, delivering uniform 75% porosity, ultra-low electrical resistivity, and robust mechanical stability in research.

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Application	Description	Key Benefit
Proton Exchange Membrane Fuel Cells (PEMFC)	Serves as a microporous gas diffusion backing layer between the bipolar plate flow channels and the membrane electrode assembly (MEA).	Facilitates uniform hydrogen and oxygen transport while preventing water flooding at high current densities.
Direct Methanol Fuel Cells (DMFC)	Acts as the anodic and cathodic substrate supporting direct liquid fuel delivery and carbon dioxide release.	Resists liquid methanol swelling and maintains stable electrical conductivity under continuous acidic exposure.
Electrochemical Supercapacitors	Utilized as a freestanding, lightweight current collector and conductive framework for pseudocapacitive and EDLC active materials.	Reduces device equivalent series resistance (ESR) and improves rate capability during rapid pulse cycling.
All-Vanadium Redox Flow Batteries (VRFB)	Serves as a conductive electrode backing and fluid flow distributor adjacent to ion-exchange membranes.	Delivers low flow resistance and excellent kinetic reversibility without surface oxidation or transition metal corrosion.
Lithium-Sulfur & Metal-Air Batteries	Acts as a porous cathode current collector and conductive host matrix for sulfur loading or oxygen reduction catalysts.	Provides ample void volume for reaction product deposition while ensuring continuous electron pathways.
Water Electrolysis & Hydrogen Production	Deployed as a porous transport layer (PTL) in proton exchange membrane water electrolyzers (PEMWE).	Offers low interfacial contact resistance and high corrosion tolerance under positive anode polarization potentials.
Electrochemical Biosensors & Catalyst Testing	Serves as a conductive supporting substrate for micro-volume analytical sensing and novel electrocatalyst screening.	Delivers a clean, highly reproducible background baseline with high surface area and chemical stability.

Specification Parameter	FZ23-0.10	FZ23-0.19	FZ23-0.30
Product Identifier	FZ23-0.10	FZ23-0.19	FZ23-0.30
Nominal Thickness	0.10 ± 0.01 mm	0.19 ± 0.01 mm	0.30 ± 0.01 mm
Sheet Dimensions	21 cm × 20 cm	21 cm × 20 cm	21 cm × 20 cm
Bulk Density	0.78 g/cm ³	0.78 g/cm ³	0.78 g/cm ³
Through-Plane Area Resistivity	2.5 mΩ·cm ²	2.5 mΩ·cm ²	3.0 mΩ·cm ²
Bulk Porosity	75%	75%	75%
Gas Flow Resistance (Air Resistance)	< 12 mmH ₂ O	< 12 mmH ₂ O	< 12 mmH ₂ O
Minimum Bending Radius	> 5 cm	> 5 cm	> 10 cm
Standard Packaging Unit	1 Sheet / Pack	1 Sheet / Pack	1 Sheet / Pack