

High Purity Supercapacitor Electrolyte Solution For Advanced Energy Storage

Item Number: FZ52



Introduction

Engineered for high performance energy storage devices this advanced supercapacitor electrolyte delivers ultra low internal resistance high operating voltage up to 3V exceptional ionic conductivity and superior stability across extreme operating temperatures for demanding industrial and research applications

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Application	Description	Key Benefit
Electric Double-Layer Capacitors (EDLCs)	Liquid electrolyte for commercial and pilot-scale activated carbon cylindrical and pouch-type supercapacitors.	Maximizes specific capacitance and power density with an extended 3.0V operating range.
Automotive Regenerative Braking & Start-Stop	Energy storage modules designed for rapid capture and release of kinetic energy during vehicular braking.	Sustains ultra-high current charge/discharge cycles with minimal thermal dissipation.
Renewable Energy Grid Smoothing	High-capacity capacitor banks deployed in solar and wind power conversion systems for frequency regulation.	Provides rapid millisecond response times and durable cycle life spanning hundreds of thousands of cycles.
Industrial Pulse Power Systems	Backup power systems, heavy machinery actuator burst power, and uninterruptible power supplies (UPS).	Delivers immediate, high-amperage bursts with ultra-low equivalent series resistance.
Cold-Climate Energy Storage Devices	Tactical, aerospace, and outdoor utility energy units operating in extreme sub-zero weather conditions.	Maintains high ionic mobility and low viscosity at low temperatures to prevent power collapse.
Academic & Industrial Battery R&D	Standardized testing media for novel carbon nanomaterials, MXenes, conducting polymers, and hybrid asymmetric devices.	Ensures repeatable, baseline electrochemical data free from uncontrolled trace impurity interference.

Parameter Category	Specification Property	Standard Value (Item: FZ52)
Basic Chemistry	Solvent Base	Acetonitrile (AN)
	Salt Concentration	1.0 mol/L
	Physical Appearance	Colorless, transparent liquid
Physical Properties	Density (at 25°C)	0.87 ± 0.01 g/cm³
	Ionic Conductivity (at 25°C)	56 ± 2 mS/cm
Electrochemical Limits	Rated Operating Voltage	2.7 V to 3.0 V
Purity & Moisture	Moisture Content (\$H_2O\$)	≤ 20 ppm
	Acidity (as HF/equivalent)	< 20 ppm
Cation Impurities	Sodium (\$Na\$)	< 10 ppm
	Iron (\$Fe\$)	< 1 ppm
	Calcium (\$Ca\$)	< 1 ppm
Anion Impurities	Lead (\$Pb\$)	< 1 ppm
	Chloride (\$Cl^-\$)	< 1 ppm

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	Sulfate (SO_4^{2-})	< 5 ppm