

Single Layer Wet Process 8Mm 12Mm Pe Battery Separator Film

Item Number: FZ44



Introduction

High-performance 8 μ m and 12 μ m PE battery separator films engineered for advanced lithium cell manufacturing, featuring exceptional tensile strength, high puncture resistance, controlled porosity, and minimal thermal shrinkage to guarantee electrochemical safety and cycle life across demanding energy storage applications.

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Application	Description	Key Benefit
High-Energy-Density Pouch Cells	Utilized as the primary inter-electrode isolation barrier in stacked pouch cell configurations for consumer electronics and mobile devices.	Ultra-thin profile maximizes active material volume while preventing edge shorts during z-fold stacking.
Cylindrical Lithium-Ion Batteries	Integrated into high-speed continuous winding operations for standard cylindrical cell formats (such as 18650, 21700, and 4680).	High tensile strength and elongation balance prevent web breakage during high-tension cylindrical winding.
Electric Vehicle (EV) Module R&D	Applied in pilot-line testing of high-capacity automotive battery cells subject to severe dynamic stress and rapid discharge cycles.	Superior puncture resistance prevents dendrite-induced shorts under high C-rate cycling and vibration.
Stationary Grid Energy Storage (ESS)	Deployed in large-format prismatic cells engineered for long-calendar-life utility and commercial grid storage systems.	Exceptional chemical stability and low thermal shrinkage ensure safe, multi-year electrochemical reliability.
Solid-State & Hybrid Electrolyte Research	Serves as a mechanical support scaffold and baseline control substrate in advanced electrolyte and solid-liquid hybrid battery R&D.	Uniform porosity and well-defined pore structure provide a reliable baseline for interfacial ion-transport analysis.
Academic Materials Science Testing	Utilized in university laboratories and battery R&D institutes for symmetric cell characterization, half-cell evaluations, and cyclic voltammetry.	Standardized Grade-A quality guarantees reproducible electrochemical impedance spectroscopy (EIS) results.
Ultracapacitor & Supercapacitor Devices	Applied as a dielectric separator layer in high-power electrochemical double-layer capacitors (EDLCs).	Low ionic resistance and uniform permeability allow ultra-fast charge and discharge switching without thermal runaway.

Specification Parameter	FZ44-8 (8 μ m Specification)	FZ44-12 (12 μ m Specification)	Unit
Base Material	Single-layer Wet-process Polyethylene (PE)	Single-layer Wet-process Polyethylene (PE)	—
Grade Rating	Grade A (Clean, flat, zero contamination)	Grade A (Clean, flat, zero contamination)	—
Nominal Thickness	8.0 $\pm$ 1.0	12.0 $\pm$ 1.5	μ m
Coating Thickness	0 (Uncoated base film)	0 (Uncoated base film)	μ m
Film Width	455	50.5 $\pm$ 0.2	mm
Roll Length	1000	1000	m
Areal Density	—	7.0 $\pm$ 1.0	g/m ²
Air Permeability (Gurley)	120 $\pm$ 50	150 $\pm$ 50	s / 100 ml
Porosity	45 $\pm$ 5	40 $\pm$ 5	%
Puncture Strength	$\geq$ 300	$\geq$ 450	g
Tensile Strength (Machine Direction - MD)	$\geq$ 1000	$\geq$ 100	kgf / cm ²

Specification Parameter	FZ44-8 (8μm Specification)	FZ44-12 (12μm Specification)	Unit
Tensile Strength (Transverse Direction - TD)	≥ 1000	≥ 150	kgf / cm ²
Thermal Shrinkage (90°C / 1 hour) - MD	≤ 2.0	—	%
Thermal Shrinkage (90°C / 1 hour) - TD	≤ 1.0	—	%
Thermal Shrinkage (90°C ± 2°C / 2 hours) - MD	—	≤ 4.0	%
Thermal Shrinkage (90°C ± 2°C / 2 hours) - TD	—	≤ 1.5	%
Thermal Shrinkage (130°C / 1 hour) - MD	≤ 2.5	—	%
Thermal Shrinkage (130°C / 1 hour) - TD	≤ 1.5	—	%