

Microporous Pp Lithium Battery Separator Film 16 20 25 40Mm

For Cell Assembly

Item Number: FZ43



Introduction

Discover premium 16 20 25 40μm PP lithium battery separator films engineered for high porosity superior puncture resistance minimal thermal shrinkage and uniform ionic transport across demanding energy storage applications ensuring ultimate safety and consistent electrochemical cell performance

[Learn More](#)

Application	Description	Key Benefit
High-Energy Cylindrical Cells	Applied in 18650, 21700, and 4680 formats using ultra-thin 16 μm and 20 μm membranes to maximize volumetric energy density.	High MD tensile strength supports rapid high-tension automated winding without elongation or tearing.
Pouch Cell R&D and Prototyping	Utilized in multi-layer z-fold stacking and winding configurations for pouch cells across academic and industrial battery laboratories.	Uniform thickness distribution and high puncture resistance prevent edge shorting during hot-pressing and casing.
Industrial Prismatic Cells	Integrated into heavy-duty prismatic power batteries utilizing 25 μm and 40 μm separators for heavy machinery and commercial vehicles.	Thick dielectric barrier and high puncture resistance isolate large-area electrodes against severe mechanical vibration.
High-Rate Discharge Battery Packs	Implemented in cordless power tools, drones, and starter batteries demanding rapid C-rate charge and discharge capabilities.	Highly interconnected pore network facilitates rapid ion diffusion, lowering internal impedance and joule heating.
Stationary Grid Energy Storage (BESS)	Employed in containerized utility-scale energy storage modules requiring multi-year calendar life and long cycle durability.	Low thermal shrinkage and chemical stability ensure long-term physical integrity without membrane degradation.
Next-Generation Separator Coatings	Serves as an ultra-flat base substrate for laboratory and pilot-scale coating of ceramic (Al ₂ O ₃ , boehmite), PVDF, or functional polymers.	Consistent surface topography and pore distribution facilitate defect-free, uniform slurry coating layers.

Parameter	Unit	Test Standard / Equipment	FZ43-16	FZ43-20	FZ43-25	FZ43-40
Base Material	—	DSC (Diamond N5360022)	Polypropylene (PP)	Polypropylene (PP)	Polypropylene (PP)	Polypropylene (PP)
Nominal Thickness	μm	GB/T 6672-2001 / Mahr C1216	16 ± 2	20 ± 2	25 ± 2	40 ± 2
Width	mm	Straight Steel Ruler	Customized	Customized	Customized	Customized
Areal Density	g/m ²	GB/T 24218.1-2009 / FA2004N	6 ~ 11	8 ~ 13	13.2 ± 1.0	—
Porosity	%	GB/T 24218.1-2009 / FA2004N	35 ~ 45	37 ~ 47	42 ± 3	40 ~ 50
Air Permeability (Gurley)	s/100mL	GB/T 458-2008 / FA2004N	190 ~ 390	250 ~ 450	350 ± 100	500 ~ 800
Tensile Strength (MD)	MPa / kgf/cm ²	GB/T 1040.3-2006 / CMT8102	≥ 100 MPa	≥ 100 MPa	≥ 1400 kgf/cm ² (≥ 137 MPa)	≥ 100 MPa
Tensile Strength (TD)	MPa / kgf/cm ²	GB/T 1040.3-2006 / CMT8102	≥ 25 MPa	≥ 25 MPa	≥ 130 kgf/cm ² (≥ 12.7 MPa)	≥ 30 MPa
Puncture Strength	N / g	GB/T 10004-2008 / CMT6202	≥ 2.2 N	≥ 2.8 N	≥ 400 g (≥ 3.92 N)	≥ 5.0 N
Thermal Shrinkage (MD)	%	GB/T 12027-2004 (90±2°C, 1h)	≤ 1.5	≤ 1.5	—	≤ 1.5
Thermal Shrinkage (TD)	%	GB/T 12027-2004 (90±2°C, 1h)	≤ 1.0	≤ 1.0	—	≤ 1.0
Thermal Shrinkage (MD)	%	Drying Oven DHG-9023 (115°C, 16h)	—	—	≤ 3.0	—
Thermal Shrinkage (TD)	%	Drying Oven DHG-9023 (115°C, 16h)	—	—	≤ 0.5	—