

Separator 2340 — High-Strength Tri-Layer Microporous Battery Separator Roll

2340 隔膜 — 高强度三层微孔电池隔膜卷材

PP/PE/PP · 38 µm · 100 mm × 10 m | for Li-ion / Na-ion / K-ion / Li-S cell research · high-load / high-safety designs

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Manufacturer / 制造商	LabCore Materials	Country of Origin / 产地	China
Product Line / 产品线	Battery Separator · Lab Consumables / 电池隔膜 · 实验耗材		

1. PRODUCT OVERVIEW 产品概述

LabCore Separator 2340 is a 38 µm trilayer PP/PE/PP microporous membrane supplied in laboratory roll format (100 mm wide × 10 m long). At 38 µm the membrane offers roughly 30 % higher puncture strength and greater resistance to mechanical abuse than 25 µm grades — a good fit for high-load and high-safety battery research. Manufactured by a dry-stretch process, it delivers a uniform pore structure, high chemical resistance and zero transverse-direction (TD) shrinkage. The PP/PE/PP architecture pairs oxidation-resistant polypropylene outer layers with a polyethylene inner layer that provides high-speed thermal-shutdown protection, making the membrane suitable for multi-chemistry cell research.

LabCore 2340 隔膜为 38 µm 三层 PP/PE/PP 微孔膜，以实验室卷材形式供货（宽 100 mm × 长 10 m）。38 µm 厚度较 25 µm 规格穿刺强度提升约 30 %，抗机械冲击能力更强，特别适用于高负载与高安全等级的电池研发。采用干法拉伸工艺制造，孔隙结构均匀、耐化学性强、横向（TD）零收缩。PP/PE/PP 三层结构以抗氧化聚丙烯（PP）为外层、聚乙烯（PE）为内层（提供高速热关闭保护），适用于多种电池体系的研究。

2. APPLICATIONS 应用领域

- High-load / high-safety lithium-ion (Li-ion) cell research — coin cell (CR2016 / CR2025 / CR2032), cylindrical (18650 / 26650) and pouch formats
高负载 / 高安全锂离子电池研究 —— 扣式（CR2016 / CR2025 / CR2032）、圆柱（18650 / 26650）及软包电池
- Sodium-ion (Na-ion) and potassium-ion (K-ion) battery research
钠离子（Na-ion）与钾离子（K-ion）电池研究
- Lithium-sulfur (Li-S) cell prototyping — thicker membrane helps suppress polysulfide shuttle and dendrite penetration
锂硫（Li-S）电池原型开发 —— 较厚隔膜有助于抑制多硫化物穿梭与枝晶穿刺
- Supercapacitor separators
超级电容器隔膜
- Custom electrochemical test cells (Swagelok-type, T-cell, flow cell) — higher puncture strength resists dendrite penetration in long-cycle tests
定制电化学测试池（Swagelok 型、T 型池、流动池）—— 高穿刺强度抵抗长循环测试中的枝晶穿刺
- Electrode material evaluation and electrolyte compatibility studies
电极材料评测与电解液兼容性研究

3. KEY FEATURES 产品特性

- Thicker tri-layer PP/PE/PP composite (38 μm)** — dry-stretch microporous structure with highly uniform pore distribution; ~30 % higher puncture strength vs 25 μm grades
PP/PE/PP 三层复合更厚 (38 μm) —— 干法拉伸微孔结构, 孔径分布高度均匀; 穿刺强度较 25 μm 规格提升约 30 %
- Zero TD shrinkage (≤ 0 % @ 90 °C / 1 h)** — reduces internal short-circuit risk and preserves dimensional integrity at elevated temperature
横向 (TD) 零收缩 (≤ 0 % @ 90 °C / 1 h) —— 降低内短路风险, 高温下保持尺寸完整性
- PE inner layer for thermal shutdown** — high-speed pore-closing for safety-critical cell designs
PE 内层热关闭 —— 高速闭孔, 适用于安全关键型电池设计
- Oxidation-resistant PP outer layers** — stable cycling and trickle-charge performance
抗氧化 PP 外层 —— 循环与涓流充电性能稳定
- Higher porosity (45 %)** — strong ion transport paired with the mechanical strength of a thicker membrane
更高孔隙率 (45 %) —— 兼顾厚膜机械强度, 离子传输依然充分
- Excellent chemical resistance** — resistant to acids, alkalis and most common electrolyte solvents
优异耐化学性 —— 耐酸、耐碱及大多数常用电解液溶剂
- Roll format — cut to any diameter** — punch discs from φ10 mm up to φ95 mm as required
卷材形态 —— 可按需冲切 φ10 mm 至 φ95 mm 任意直径圆片

4. PRODUCT IDENTIFICATION & AVAILABLE SKUS 产品标识与可选规格

SKU	Configuration / 规格	Format / 形态
SEP-2340-R100	2340 · 38 μm · PP/PE/PP · 100 mm × 10 m	Laboratory roll / 实验室小卷
SEP-2340-R300	2340 · 38 μm · PP/PE/PP · 100 mm × 300 m	Master roll · quotation / 大卷 · 询价

Pre-cut φ18 mm discs of the same 2340 membrane are available separately on request (custom-disc service). Custom widths (60 / 85 / 120 mm) and custom disc diameters are also available.
同款 2340 膜的预切 φ18 mm 圆片可按需提供 (定制圆片服务)。可定制宽度 (60 / 85 / 120 mm) 及定制圆片直径。

5. TECHNICAL PARAMETERS 技术参数

Parameter / 参数	Value / 数值	Unit / 单位
Material / 材质	PP/PE/PP trilayer microporous membrane 三层 PP/PE/PP 微孔膜	—
Thickness / 厚度	38 ± 3	μm
Width / 宽度	100 ± 0.2	mm
Length (roll) / 长度 (卷)	10	m
Porosity / 孔隙率	45 ± 5	%
Air Permeability (Gurley, JIS) / 透气度 (Gurley, JIS)	780 ± 100	s/100 cc
Pore Size, PP (avg. dia.) / 孔径 (PP, 平均)	0.035	μm
TD Thermal Shrinkage @ 90 °C / 1 h / 横向热收缩	≤ 0	%
MD Thermal Shrinkage @ 90 °C / 1 h / 纵向热收缩	≤ 7	%

Parameter / 参数	Value / 数值	Unit / 单位
Puncture Strength / 穿刺强度	≥ 500	g
Tensile Strength, MD / 抗拉强度 MD	≥ 1630	kgf/cm ²
Tensile Strength, TD / 抗拉强度 TD	≥ 165	kgf/cm ²
Storage Temperature / 储存温度	25 ± 3	°C
Storage Humidity / 储存湿度	30 – 70	% RH

Values are typical test values from the manufacturer's datasheet. Thickness, porosity, Gurley and shrinkage are the primary acceptance parameters; tolerances apply to production lots and are subject to final confirmation.
数值为制造商检测的典型值。厚度、孔隙率、透气度与热收缩为主要验收参数；公差适用于生产批次，以最终确认函为准。

6. ROLL FORMAT & DISC YIELD REFERENCE 卷材形态与圆片产出参考

Each 100 mm × 10 m roll can be punched into discs of any diameter up to 95 mm. Nominal yield per roll:
每卷 100 mm × 10 m 可冲切至最大 φ95 mm 的任意直径圆片。单卷名义产出如下：

Disc Diameter / 圆片直径	Approx. Yield / 约产出	Typical Cell / 典型电池
φ16 mm	≈ 3,700 pcs / roll	CR2016 / CR2025
φ18 mm	≈ 2,700 pcs / roll	CR2032 / 18 mm test cells
φ19 mm	≈ 2,600 pcs / roll	CR2032 (Φ19 mm)
φ24 mm	≈ 1,600 pcs / roll	Larger coin / custom cells

Yield is nominal and depends on punch size, spacing and edge trim. One 10 m roll provides an extended supply for standard laboratory coin-cell workflows.
产出为名义值，取决于冲切尺寸、间距与边料损耗。一卷 10 m 可为常规扣式电池实验流程提供长期供应。

7. PACKAGING & SHIPPING 包装与运输

- Vacuum-sealed roll, protected by bubble wrap / foam and an outer carton
真空密封卷材，气泡膜 / 缓冲材料防护，外加纸箱
- Not classified as dangerous goods — standard shipping applies
非危险品，可走常规运输
- Dispatch within 3–5 business days of order confirmation
订单确认后 3–5 个工作日发货
- Shipped from overseas warehouses (US / Europe / UK / Japan / South Korea) for qualifying orders; bulk orders quoted for factory dispatch
符合条件的订单自海外仓（美国 / 欧洲 / 英国 / 日本 / 韩国）发货；批量订单可报工厂直发

8. STORAGE & HANDLING 储存与使用

- Store sealed at 25 ± 3 °C and 30–70 % RH; avoid direct sunlight and high humidity
密封储存于 25 ± 3 °C、30–70 % RH；避免阳光直射与高湿
- Keep the roll in its original vacuum bag until use; once opened, reseal after each use or transfer to an equivalent dry container
使用前保持原真空包装；开封后每次使用后重新密封，或转入等效干燥容器
- Handle with clean gloves or cleanroom tweezers; avoid hand contact with the membrane surface
佩戴洁净手套或使用洁净镊子操作；避免手部直接接触膜面
- For laboratory research use only — not for finished consumer batteries
仅供实验室研究使用，不用于成品消费电池

9. QUALITY, COMPLIANCE & DISCLAIMER 质量、合规与免责声明

Quality. Every production lot is inspected for thickness, width, porosity, air permeability (Gurley) and thermal shrinkage against the acceptance parameters in Section 5. Lots failing verification are not released.

质量。 每个生产批次均按第 5 节验收参数检验厚度、宽度、孔隙率、透气度（Gurley）与热收缩。未通过验证的批次不予放行。

Compliance. This document describes a PP/PE/PP microporous membrane by its generic construction and industry model code only. It does not reference, and is not affiliated with, any third-party brand or trademark. Model numbers (e.g. 2340) are generic industry specification codes.

合规。 本文件仅以通用结构与行业型号代号描述该 PP/PE/PP 微孔膜，不涉及亦不隶属于任何第三方品牌或商标。型号数字（如 2340）为行业通用规格代号。

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