

### Product Name & Description

Celgard® 4560  
25µm Monolayer Microporous Membrane (PP)  
**Laminated** to a Non-Woven Membrane (PP)

### Primary Applications

**Primary** Lithium Batteries



### Product Benefits

- Thick, multilayer construction provides increased strength and high puncture resistance
- PP non-woven laminate enables high electrolyte retention for long working life
- Low electrical impedance provides high-rate capabilities
- Zero TD shrinkage reduces internal shorting

### Packaging

Please contact your Celgard representative for more information on product roll lengths and slit widths.

### Technical Data (Typical Properties)

Basic Film Properties	Unit of Measure	Typical Value
Total Film Thickness	µm	102
Total Film Gurley (ASTM)	Seconds	9

### Microporous Membrane (Typical Properties)

Basic Film Properties	Unit of Measure	Typical Value
Thickness	µm	25
Gurley (JIS)	Seconds	200
Porosity (Calculated)	%	55
TD Shrinkage @ 90°C / 1 Hour (typical)	%	0
MD Shrinkage @ 90°C / 1 Hour (typical / max)	%	1.1 / 5.0
TD Tensile Strength (typical / min)	Kg/cm <sup>2</sup>	130 / 80
MD Tensile Strength (typical / min)	Kg/cm <sup>2</sup>	1170 / 770
Puncture Strength (typical / min)	Grams Force (gf)	325 / 200

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