

## Product Name & Description

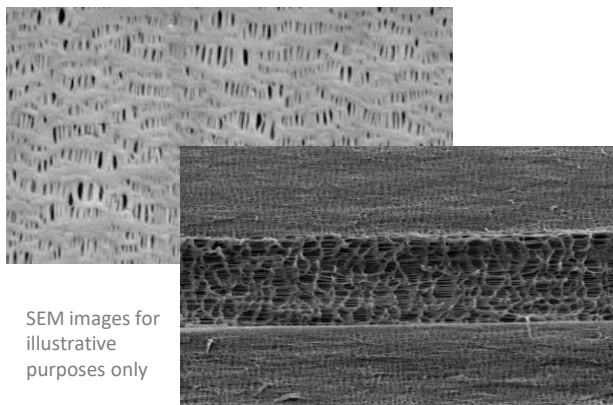
Celgard® S1810  
18µm Trilayer Microporous Membrane (PP/PE/PP)

## Primary Applications

High Power Lithium Ion Battery Systems:  
Automotive (HEV, PHEV), ESS

## Product Benefits

- Designed for improved high speed cell winding and coating ability
- Reduced post compression spring back to aid in efficient can insertion
- Enhanced TD characteristics for improved puncture performance
- Highest porosity enhances rate performance relative to other Celgard® PP/PE/PP products
- Ultra low electrical impedance
- PP outer layer provides high temperature melt integrity, oxidation resistance; PE inner layer provides high speed shutdown feature



## Technical Data (Typical Properties)

Basic Film Properties	Unit of Measure	Typical Value
Thickness	µm	18
Gurley (JIS)	Seconds	190
Porosity (Calculated)	%	53
TD Shrinkage @ 105°C / 1 Hour (typical)	%	0
MD Shrinkage @ 105°C / 1 Hour (typical / max)	%	3.8 / 4.6
TD Tensile Strength (typical / min)	Kg/cm <sup>2</sup>	115 / 105
MD Tensile Strength (typical / min)	Kg/cm <sup>2</sup>	2070 / 2000
Puncture Strength (typical / min)	Grams Force (gf)	410 / 390

## Packaging

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

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Users of any substance should satisfy themselves by independent investigation that the material can be used safely. We may have described certain hazards, but we cannot guarantee that these are the only hazards that exist. Review the Product Safety Data Sheet for environmental, health and safety information related to this product.

