



Lithium-ion Battery Separator



Cellulose Separator

Our separator is the first high performance, lithium-ion battery separator made from 100 % cellulose. Compared to polyolefin separator, it has better heat resistance, superior porosity, and high liquid retention rate.

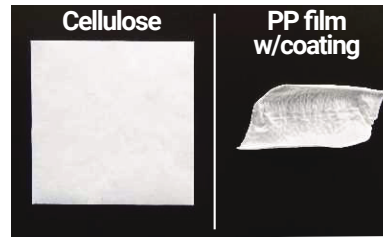
Applications

» LiB for xEV, ESS and industrial use » LiB for start-stop 12V batteries » SiB (Sodium-ion batteries)

Advantages

1. High Heat Resistant

Safer battery design due to higher heat resistance and thermal stability compared to polyolefin separator.



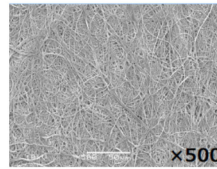
Dimension change after drying at 150 °C/12 h

2. High porosity and denseness

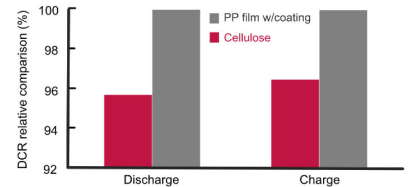
Li ions can move quickly while separation functions remains and reduces internal resistance in charge / discharge.

Lower resistance compared to inorganic separators.

SEM Image



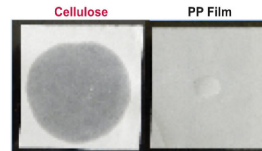
Comparison of DCR



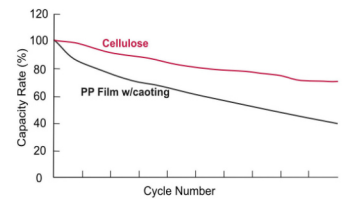
3. Excellent affinity and high liquid retention

Giving battery longer cycle life due to excellent wettability with electrolytes (any type of electrolytes even high viscosity types) and retain them in space between fine fibres.

Comparison of Wettability



Comparison of Cycle Life



Product Portfolio

Grade		TBL5314	TBL4620	TBL4825
Thickness	µm	14	20	25
Density	G/cm ³	0.53	0.46	0.48
Porosity*	%	65	69	68
Tensile Strength	N/15 mm	9	11	15
Gurley*	seconds	9	8	10

Precaution

1. Separator may contain 7-10 % moisture. When assembling cell with cellulose separator, sufficient drying is required.
2. Recommended drying condition is in the range of 100-140 °C within 24 hours by vacuum drying.
3. After drying procedure, please handle the products under the low dew point environment. Recommended dew point is less than -60 °C.
4. 1 % lengthwise and widthwise shrinkage after dried.
5. Please adjust the amount of electrolytic solution to fit the exceptional high porosity.

For more information please reach out to mobility@nagase.eu

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