

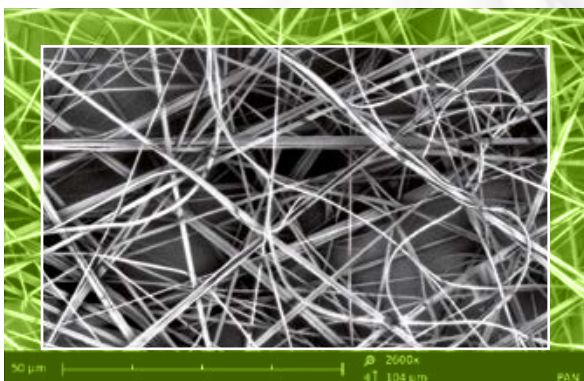
# PAN

## NnF MBRANE® – PAN (Polyacrylonitrile)

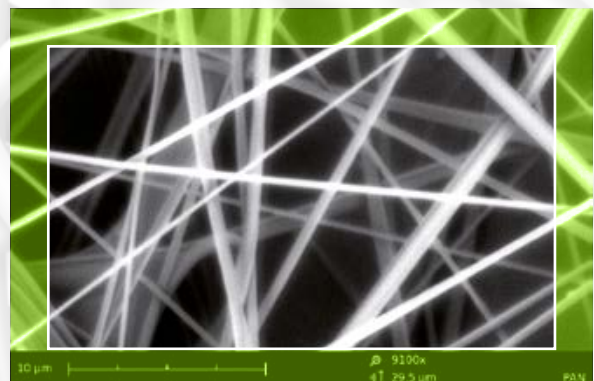
### Product description

**NnF MBRANE® – PAN (Polyacrylonitrile)** is a novel kind of nanofibrous membrane produced by industrial production technology operated by **PARDAM, s.r.o.** in the Czech Republic. Nanofibrous layer is deposited on the top of a supporting substrate with air permeating structure made of virtually any material on customers` request – woven/nonwoven textiles, filtration paper... or without support. Combination of the grammage of nanofibrous layer and the type of supporting substrate enables manufacturing of filtration membranes with different permeability and filtration efficiency. Nanofibrous membrane possesses small pore size together with high permeability due to its open fibre structure. This characteristics, high chemical resistance and high flexibility predestine this material to be used as separator in Li-ion batteries or fuel cells.

### Images



SEM image, magnification: 2600x



SEM image, magnification: 9100x

## Physical properties

### ■ Physical form and structure



Thin NnF layer of PAN on PP support

## Material characteristics

fiber structure	<b>randomly oriented</b>
typical fiber diameter	<b>400-800 nm</b>
fiber length	<b>continuous</b>
physical form	<b>thin layer</b>
grammage	<b>0,5-15 g/m<sup>2</sup></b>
air permeability	<b>40-400 l/min/dm<sup>2</sup></b>
width of the roll	<b>max. 0,8 m</b>
maximum length of the roll	<b>2000 m</b>
melting poin	<b>317 °C</b>
vicat softening point	<b>&gt;125 °C</b>

Breathable | High flux | Chemically stable with the exception of organic solvents | Flexible | Peel-able – it is possible to use nanofibrous layer without support material

Type of supporting substrate and grammage of nanofibrous layer determine the permeability and filtration efficiency of the membrane. These parameters can be modified in accordance with customers' demands.

Additional post-treatment available:

Lamination of nanofibrous membranes (double / triple sandwich material) | Doping with functionalized particles (Ag, ZnO, TiO<sub>2</sub>... antibacterial function).

Please feel free to contact us for more information.

## Applications

Air | Liquid | Water filtration | Separation processes | Li-ion battery separator | Fuel cell separator

### Important notice:

Production of two-layer polymer nanofiber membrane (combination of polymers from our portfolio) in one production step is also possible (improvement of mechanical and functional properties).

### Important notice for purchaser

All statements, technical information and recommendations contained in this document are based on tests conducted by PARDAM's R&D team and its approved equipment and are believed to be reliable. However the accuracy or completeness of the tests is not guaranteed. THE FOLLOWING IS MADE IN LIEU OF ALL WARRANTIES, EXPRESS OR IMPLIED, INCLUDING THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. The manufacturer's and seller's only obligation will be to replace the quantity of the product proved to be defective. Neither the seller nor the manufacturer will be liable for any injury, loss or damage, direct, indirect or consequential, arising out of the use of the product. Before using, the user must determine the suitability of the product for their intended use.



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