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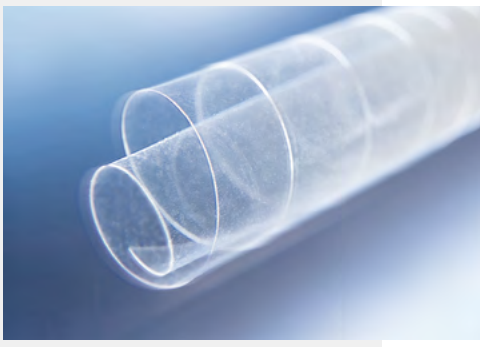
Functional Membranes for Fuel Cells and Batteries
BWT GROUP

Membranes and ionomers for water electrolysis



The fumasep® ion-exchange membranes for PEM water electrolysis are available in thickness range 60–150 µm.

The fumasep® membranes for alkaline water electrolysis are based on proprietary hydrocarbon materials. They are available in thickness 15–100 µm.

The PFSA polymer dispersions for PEMWE catalytic layers of EW 800–1000 are available in concentration up to 25 %.

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MEMBRANES AND IONOMERS FOR WATER ELECTROLYSIS

The membranes for PEMFC application are based on either short-side-chain or long-side-chain PFSA polymer. The membranes are typically produced in reinforced version in order to eliminate swelling for large-size format cells.

The membrane's properties such as thickness and equivalent weight can be adjusted upon request.

The polymeric dispersions are water based, which facilitates the transport. The water dispersions have very narrow particle size distribution below 100 nm. The dispersions are transported in PE containers.

The membranes for alkaline water electrolysis are tailored for either circuit with concentrated KOH or for KOH-free circuit. The membranes are available in customized width up to 150 cm and customized length up to 300 m.

MEMBRANES FOR PEMWE

fumasep® membrane	PFSA Polymer / EW	Thickness /µm	Pressure range	R / Ohm*cm²	Reinforcement
FS-960-RF	SSC / 870	60	< 10 bar	0,07	ePTFE
FS-990-PK	SSC / 870	100	< 10 bar	0,12	Woven web PEEK
F-10120-PK	LSC / 970	120	< 10 bar	0,12	Woven web PEEK
F-10150-PTFE	LSC / 970	150	> 20 bar	0,2	Woven web PTFE

MEMBRANES FOR ALKALINE WATER ELECTROLYSIS

fumasep® membrane	KOH concentration	Thickness / µm	Pressure range	R / Ohm*cm²	Reinforcement
FAAM-20	> 5M	20	> 5 bar	0,1	none
FAA-3-PK-75	No KOH	75	< 5 bar	0,17	PEEK

FUMION DISPERSIONS

fumion® dispersion	Polymer EW	Polymer particle size / nm	Solid concentration / %	Viscosity @ RT / mPa*s
FSLA-820	780–810	< 100	20	20–80
FSLA-920	850–880	< 100	20	20–80
FSLA-1020	960–1000	< 100	20	20–80