

Membranes for Redox-Flow- Batteries with organic species

The cation-exchange fumasep® membranes for water-based organic redox-flow batteries are based on PFSA and proprietary E® polymers and they are available in thickness 20–30 µm.

The anion-exchange fumasep® membranes for water-based organic redox-flow batteries are based on proprietary FAS® and FAPQ® polymers and they are available in thickness 20–75µm.

MEMBRANES FOR WATER-BASED ORGANIC RFB

The cation-exchange membranes for organic electrolytes fumasep are based on either PFSA or E materials, both available in both reinforced and non-reinforced versions. The E membranes are tailored to high selectivity. The membranes feature very low ohmic resistance and high mechanical strength. The E membranes feature also possibility of welding.

The anion exchange membranes based on proprietary FAS or FAPQ polymers are non-reinforced as well as reinforced ones. The membranes feature low to very low ohmic resistance, ultimate strength, high coulombic efficiency and possibility of welding.

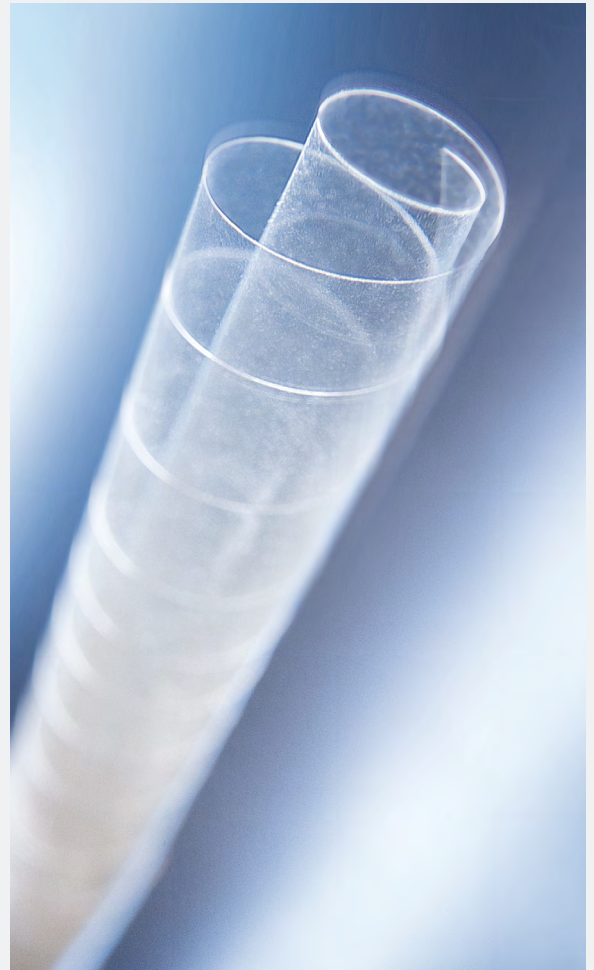


FIG 1: 3-D view of FAPQ-275-PET



Membrane	Ion exchange group	Thickness μm	Reinforcement	Resistance in NaCl Ohm.cm^2	E-Modulus MPa
FS-930	cationic	30	none	< 0,6	> 300
E-620(K)	cationic	20	none	< 0,7	> 1.000
E-620(K)-PE	cationic	20	PE	< 1,3	> 1.000
FAS-20-PE	anionic	20	PE	< 1,5	> 1.000
FAS-30	anionic	30	none	< 1,3	> 1.000
FAPQ-275-PET	anionic	75	PET	< 1,1	> 400