

## fumasep® FAD-PET-75

### General

*Membrane type:* Anion-exchange membrane - PET-reinforced - thickness 70 - 80 µm, with low resistance, high acid transfer rate, high mechanical stability, and high stability in acidic environment.

*Application:* Diffusion dialysis for acidic solutions, e.g. H<sub>2</sub>SO<sub>4</sub>.

Membranes are identified by membrane type and identification number (Lot Number). Please refer to this type and identification number in case of queries.

### Delivery

The membrane is the brown foil delivered in wet form. The membrane is ready for use.

### Handling and Storage

Keep membrane package closed / sealed when unused. Store, handle and process the membrane in a clean and dust-free area. Use only new and sharp knives or blades, when cutting the membrane. Always wear protective gloves when handling the membrane. Handle with care, be sure not to puncture, crease or scratch the membrane, otherwise leaks will occur. All surfaces in contact with the membrane during handling, inspection, storage and mounting must be smooth and free of sharp projections.

Wet form: Storage for short and medium time scale (hours up to several weeks) may be done in unsealed containers in 0.5 - 1.5 wt% NaCl solution or comparable neutral pH electrolytes. For storage over a longer time period a sealed container is recommended using afore said electrolyte with biocide to avoid biological fouling.

Membranes will expand and contract based on water / electrolyte content. To eliminate wrinkling, it is necessary to expand membranes before mounting by pretreatment. Do not let the membrane dry out since micro-cracks may likely occur during shrinkage.

### Pretreatment

The membrane is delivered in chloride form and wet form. The membrane changes dimensions based on its water content. When assembling and during cell operation do not let the membrane dry out since micro-cracks may likely occur during shrinkage.

If you have any concerns about storage, chemical stability, and pretreatment please feel free to contact us for further information.

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### Physical and chemical data of fumasep® FAD-PET-75

fumasep®		FAD-PET-75
membrane type		anion exchange membrane
appearance / colour		light-brown
backing foil		none
reinforcement		PET
counter ion		chloride form (Cl <sup>-</sup> )
delivery form		wet
thickness (dry)	µm	60 – 80
weight per unit area	mg cm <sup>-2</sup>	7.0 – 8.5
ion exchange capacity (as chloride form)	meq g <sup>-1</sup>	2.0 – 2.3
area resistance in Cl <sup>-</sup> form <sup>a)</sup>	Ω cm <sup>2</sup>	0.25 – 0.50
specific conductivity in Cl <sup>-</sup> form <sup>a)</sup>	mS cm <sup>-1</sup>	15 – 25
selectivity 0.1 / 0.5 mol/kg KCl at T = 25 °C <sup>b)</sup>	%	91 – 95
uptake in H <sub>2</sub> O at T = 25 °C <sup>c)</sup>	wt %	20 – 30
dimensional swelling in H <sub>2</sub> O at at T = 25 °C <sup>d)</sup>	%	0 – 2
proton (H <sup>+</sup> ) transfer rate <sup>e)</sup>	µmol min <sup>-1</sup> cm <sup>-2</sup>	2000 - 5000
Young's modulus at 23 °C / 50 % r.h. <sup>f)</sup>	MPa	1200 – 2000
yield strength at 23 °C / 50 % r.h. <sup>f)</sup>	MPa	15 – 25
tensile strength at 23 °C / 50 % r.h. <sup>f)</sup>	MPa	40 – 70
elongation at break at 23 °C / 50 % r.h. <sup>f)</sup>	%	15 – 50
bubble point test in water at T = 25 °C	bar	> 3

a) in Cl<sup>-</sup> form in 0.5 M NaCl @ T = 25 °C, measured in standard measuring cell (through-plane).

b) determined from membrane potential measurement in a concentration cell.

c) reference membrane dried over P<sub>2</sub>O<sub>5</sub> *in vacuo*.

d) reference membrane as received.

e) determined from pH potential measurement in a concentration cell 0.5 M HCl / 0.5 M NaCl @ T = 25 °C.

f) determined by stress-strain measurement at T = 25°C and 50 % r.h., according to DIN EN 527-1.

**Contact us for any questions or sales information:**

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