

fumasep[®] FKL-PK-130

General

Membrane type: Cation-exchange membrane - PK-reinforced - thickness 130 μm - with high hydroxyl blocking capability, high selectivity, high mechanical stability, and high stability in acidic and caustic environment.

Application: Process for concentrating alkaline solutions, electrodialysis and electrodialysis with bipolar membranes.

Stability range: Stable under acidic and caustic conditions at $T = 25\text{ }^{\circ}\text{C}$.

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 dry form.

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.

Dry form: Storage for short and medium time scale (up to several months) may be done in dry state (sealed container). 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.

Pretreatment

The membrane is delivered in H-form and dry form. Depending on application and cell design, assembling is possible in dry form (without pretreatment) or wet form. For optimum performance it is recommended to rinse the membrane in NaCl solution (e.g. 0.5 M NaCl solution at $T = 25\text{ }^{\circ}\text{C}$ for 24 hrs) to remove any additive from the membrane. Place the membrane sample between stabilizing meshes / spacers in order to avoid curling. 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.

Physical and chemical data

fumasep®		FKL-PK-130
membrane type		cation exchange membrane
appearance / colour		brown
backing foil		none
reinforcement		PK
counter ion		protonic form (H ⁺)
delivery form		dry
thickness (dry)	µm	110 – 140
weight per unit area	mg cm ⁻²	10 – 13
ion exchange capacity	meq g ⁻¹	0.6 – 0.8
area resistance in Na ⁺ form ^{a)}	Ω cm ²	3 – 10
specific conductivity in Na ⁺ form ^{a)}	mS cm ⁻¹	1 - 4
selectivity 0.1 / 0.5 mol/kg KCl at T = 25 °C ^{b)}	%	96 – 99
uptake in H ₂ O at T = 25 °C ^{c)}	wt %	10 - 25
dimensional swelling in H ₂ O at T = 25 °C ^{d)}	%	0 - 2
hydroxyl (OH) transfer rate ^{e)}	µmol min ⁻¹ cm ⁻²	5 - 50
Young's modulus at 23 °C / 50 % r.h. ^{f)}	MPa	1000 – 2000
yield strength at 23 °C / 50 % r.h. ^{f)}	MPa	20 – 30
tensile strength at 23 °C / 50 % r.h. ^{f)}	MPa	50 – 80
elongation at break at 23 °C / 50 % r.h. ^{f)}	%	20 – 50
bubble point test in water at T = 25 °C	bar	>3

a) in Na⁺ 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) in H⁺ form, membrane as received stored in water for 24 hrs, reference membrane dried over P₂O₅ *in vacuo*.

d) in H⁺ form, membrane as received stored in water for 24 hrs, reference membrane as received.

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

f) in H⁺ form, membrane as received, determined by stress-strain measurement at T = 25°C and 50 % r.h., DIN EN 527-1.

Please note: The data are not measured directly on the item supplied.

Contact us for any questions or sales information:

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