

fumasep[®] FAB-PK-130

General

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

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

Stability range: pH = 0 - 14 at T = 25 °C.

Membranes are identified by membrane type and identification number (Lot No). 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 long time scale (> 12 month) 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 bromide 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 °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®		FAB-PK-130
membrane type		anion exchange membrane
appearance		brown
backing foil		none
reinforcement		PK
counter ion		bromide (Br ⁻)
delivery form		dry
thickness (dry)	µm	110 – 140
weight per unit area	mg cm ⁻²	10 – 13
ion exchange capacity (in Cl ⁻ form)	meq g ⁻¹	0.7 – 1.0
area resistance in Cl ⁻ form ^{a)}	Ω cm ²	5.0 – 9.0
specific conductivity in Cl ⁻ form ^{a)}	mS cm ⁻¹	1.0 – 2.5
area resistance in SO ₄ ²⁻ form (0.5 M H ₂ SO ₄) ^{b)}	Ω cm ²	10 – 20
specific conductivity in SO ₄ ²⁻ form (0.5 M H ₂ SO ₄) ^{b)}	mS cm ⁻¹	0.5 – 1.5
selectivity 0.1 / 0.5 mol/kg KCl at T = 25 °C ^{c)}	%	93 – 98
uptake in H ₂ O at T = 25 °C ^{d)}	wt %	5 – 15
dimensional swelling in H ₂ O at T = 25 °C ^{e)}	%	0 – 1
proton transfer rate ^{f)}	µmol min ⁻¹ cm ⁻²	60 - 400
Young's modulus at 23 °C / 50 % r.h. ^{g)}	MPa	1000 - 1800
yield strength at 23 °C / 50 % r.h. ^{g)}	MPa	20 – 30
tensile strength at 23 °C / 50 % r.h. ^{g)}	MPa	40 – 80
elongation at break at 23 °C / 50 % r.h. ^{g)}	%	15 – 40
bubble point test in water at T = 25 °C	bar	> 3
pH stability range at 25 °C	pH	0 - 14

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

b) in SO₄²⁻ form (0.5 M H₂SO₄) @ T = 25 °C, measured in standard measuring cell (through-plane).

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

d) in Br⁻ form, membrane as received stored in water for 24 hrs, reference membrane dried over P₂O₅ *in vacuo*.

e) in Br⁻ form, membrane as received stored in water for 24 hrs, reference membrane as received.

f) determined from pH potential measurement in a concentration cell 0.1 M HCl / 0.1 M NaCl @ T = 25 °C.

g) determined by stress-strain measurement at T = 25°C and 50 % r.h., according to 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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