fumasep® FAAM-75-PK

General

Membrane type: Anion-exchange membrane with ternary ammonium group – PK-reinforced – thickness 75 µm, with low resistance, high selectivity, and high stability in acidic and caustic environment.

Application: Alkaline electrolysis using liquid aqueous KOH (6 – 12 M KOH), preferentially at both, anode and cathode side.

Operation range: 6 – 12 M KOH, temperature RT – 100 °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 thin brown foil, delivered in dry form.

Handling

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 which may get into contact with the membrane during inspection, storage, pretreatment and mounting must be free of sharp edges or angles.

Storage for long time scale (> 12 month) may be done in dry state (sealed container).

Pretreatment

No specific pretreatment required. The membrane is self-activating in the cell after contact with aqueous caustic electrolyte (e.g. 6 - 9 M aqueous KOH solution) within several hours.

Depending on cell design, activation may also be done before assembling: Put the membrane sample between stabilizing meshes (in order to avoid curling) in aqueous KOH solution (concentration according to application) for at least 24 hrs at room temperature. Use closed container to avoid CO_2 contamination (carbonate formation that may affect conductivity). Membranes must be covered by KOH solution. Membranes will expand when subject to swelling process. The hydration level can be controlled by KOH concentration and temperature, e.g. 9 M KOH solution at room temperature leads to approx. 50 – 70 wt% hydration level.

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

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Physical and chemical data of fumasep® FAAM-75-PK

fumasep®	unit	FAAM-75-PK
membrane type		anion exchange membrane
functional group		ternary ammonium group
reinforcement		PEEK
appearance [a)]		brown, transparent
backing foil		none
counter ion		none
delivery form		dry
thickness (dry)	µm	60 – 80
Young modulus (dry) [b)]	MPa	> 1000
temperature durability (dry)		no oxidation below 250 °C
pH durability range		stable under highly alkaline conditions
pressure operation		not tested
treatment with 12 M aqueous KOH at 20 °C for 1 day [c)]		
thickness increase	%	20 - 40
length increase	%	< 2
swelling (hydration)	wt %	40 - 60
Version [d)]	2.2	Valid from November 26th 2020

a) The colour of the product may vary slightly.
b) determined by stress-strain measurement at T = 25°C and 50 % r.h., according to DIN EN 527-1.
c) Treatment with alkaline solution was performed in closed container to avoid CO_2 contact.
d) Changes without prior notices may apply.

Hereby, it is certified that all results of the measured item comply with the margins of the internal specification defined in the technical datasheet. All measurements and data recording are conducted in accordance with standardized procedures following the ISO 9001 certification.