

# fumasep<sup>®</sup> FS-990-PK

## General

*Membrane type:* Perfluorinated cation-exchange membrane, PK-reinforced, thickness 90 µm, with low resistance, high mechanical stability, high selectivity and high chemical and oxidative stability.

*Application:* Electrochemical processes requiring cation exchange membranes with high oxidative stability such as water electrolysis, redox-flow batteries etc.

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 slightly brownish opaque foil (with reinforcement), delivered on a backing layer (colourless rigid PET foil). Peel off carefully the membrane from the backing layer.

## 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 in contact with the membrane during handling, inspection, storage and mounting must be smooth and free of sharp projections. Membranes will expand and contract based on water / electrolyte content.

## Pretreatment

The membrane is delivered in H-form and dry form. No additional treatment is required. Membranes will expand and contract based on moisture content.

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

## Technical Data Sheet - fumasep® FS-990-PK

### Physical and chemical data

fumasep®		FS-990-PK
membrane type		cation exchange membrane
appearance <sup>a)</sup>		slightly brownish
backing foil		PET
reinforcement		PK
counter ion		H form
delivery form		dry
thickness	µm	85 – 105
weight per unit area	mg cm <sup>-2</sup>	13 – 17
Dimensional swelling X-Y	%	< 2
IEC	meq.g <sup>-1</sup>	1,1 – 1,25
In-plane conductivity @ 25 °C	mS.cm <sup>-1</sup>	> 60
Through-plane conductivity @ 25°C	mOhm.cm <sup>2</sup>	< 300
Young's modulus at 23 °C / 50 % r.h. <sup>b)</sup>	MPa	500 – 1000
tensile strength at 23 °C / 50 % r.h. <sup>c)</sup>	MPa	30 – 60
elongation at break at 23 °C / 50 % r.h. <sup>c)</sup>	%	> 20
burst test in water at T = 25 °C	bar	> 3

a) the color of the product may vary slightly.

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

Note: The product is not certified for drinking water applications. The data are not measured directly on the item supplied. The data sheet does not release the customer of the necessity of a goods inwards control procedure. All information included in this data sheet is based on tests and data believed to be reliable. The data do not imply any warranty or performance guarantee. It is the user's responsibility to examine performance, suitability and durability of the product for the intended purpose. FUMATECH BWT GmbH does not assume any liability for patent infringement resulting from the use of this product.

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.

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