

fumasep[®] F-10270 PTFE-e

General

Membrane type: Extruded per-fluorinated sulfonic acid type cation-exchange membrane - PTFE-reinforced. The membrane has low electric resistance, high selectivity, very high mechanical stability and very high stability in basic and acidic environment.

Application: Electrolysis applications and electrochemical processes requiring cation exchange membranes with high oxidative stability and highly resistant to chlorine - e.g. for electrode protection and in electrolyser.

Stability range: pH = 1 - 14 at T = 90 °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 white foil delivered in wet form.

Handling and Storage

Keep membrane package closed / sealed when unused. Unpack membrane only for direct use and process immediately after opening. Store, handle and process the membrane in a clean and dust-free area.

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. To control and minimise wrinkling it is recommended to expand membranes before cutting and module assembling by equilibration in the process solution for sufficient time.

Storage in dry conditions is preferred. If the membrane is pre-treated already, you should store in unsealed containers in 3-5 wt% NaCl solution or comparable neutral pH electrolytes.

Pretreatment

The membrane is delivered in Na⁺ form and wet state. The membrane does not need any pre-treatment and is ready to use. Do not let the membrane dry out since micro-cracks may likely occur.

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

Technical Data Sheet - fumasep® F-10270 PTFE-e

Physical and chemical data of fumasep® F-10270 PTFE-e

fumasep®		F-10270 PTFE-e
membrane type		cation exchange membrane
appearance / colour		white
backing (carrier foil)		none
reinforcement		PTFE
counter ion		Na ⁺ -form
delivery form		wet
thickness (wet)	µm	260 – 280
pH stability range at T = 90 °C	pH	1 - 14
IEC (ion exchange capacity), calcul. includ. reinf. film	meq g ⁻¹	0.86
area resistance in H ₂ O at T = 25 °C in H-form ^{a)}	Ω cm ²	< 0.45
conductivity in H ₂ O at T = 25 °C in H-form ^{a)}	mS cm ⁻¹	> 55
selectivity 0.1 / 0.5 mol/kg KCl at T = 25 °C ^{b)}	%	> 98
uptake in H ₂ O at T = 25 °C in H-form ^{c)}	wt %	22
dimensional swelling in H ₂ O at T = 25 °C in H-form ^{d)}	%	9 - 11
Young's modulus at 23 °C / 50 % r.h. ^{e)}	MPa	> 1000
yield strength at 23 °C / 50 % r.h. ^{e)}	MPa	n.a.
tensile strength at 23 °C / 50 % r.h. ^{e)}	MPa	22 - 25
elongation at break at 23 °C / 50 % r.h. ^{d)}	%	n.a.

a) measured in two-electrode cell (through-plane), sample activated in 10 % H₂SO₄, T = 80 °C, 24 hrs before measurement.

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

c) reference membrane dried over P₂O₅ *in vacuo*, sample activated in 10 % H₂SO₄, T = 80 °C, 24 hrs before measurement.

d) reference membrane dried at ambient conditions (25 °C, 50 % r.h.), sample activated in 10 % H₂SO₄, T = 80 °C, 24 hrs before measurement.

e) determined by stress-strain measurement at T = 25°C and 50 % r.h., according to DIN EN 527-1, sample activated in 10 % H₂SO₄, T = 80 °C, 24 hrs before measurement.

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.

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

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