fumasep® E-620 (K)

General

Membrane type: Cation-exchange membrane – non-reinforced – thickness 20 µm, with very low resistance, high selectivity and high stability in pH acidic and basic environment.

Application: Electrochemical applications, e.g. capacitive deionisation and others.

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 brown foil, delivered on a backing layer (colorless rigid PET foil). Carefully separate the membrane from the backing layer.

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

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 additional biozide to avoid biological fouling.

Pretreatment

The membrane is supplied in K-form and dry state, stabilized with polyethylene glycol (PEG) as protection for embrittlement, which can be easily removed by soaking in DI water (before or after assembling). If additional cleaning is required rinse the membrane in either the application solution or deionized water according to the application requirement. Do not let the membrane dry out since micro-cracks may likely occur during shrinkage. Membranes will expand and contract based on water / electrolyte content.

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

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Physical and chemical data of fumasep® E-620 (K)

fumasep®	unit	E-620 (K)
membrane type		cation exchange membrane
appearance [a)]		light brown, transparent
backing foil		PET
reinforcement		none
counter ion		K form
delivery form		dry
additive		PEG
thickness (dry)	µm	15 – 25
weight per unit area (dry)	g m^{-2}	26 – 31
area resistance in Na^+ form [b)]	Ω cm^2	< 1.0
selectivity 0.1 / 0.5 mol/kg KCl at T = 25 °C [c)]	%	> 96
dimensional swelling in H_2O at T = 25 °C [d)]	%	< 3
Young's modulus at 23 °C / 50 % r.h. [e)]	MPa	
tensile strength at 23 °C / 50 % r.h. [e)]	MPa	
elongation at break at 23 °C / 50 % r.h. [e)]	%	
burst test in water at T = 25 °C	bar	> 2
pH stability range at 25 °C	pH	0 – 14
operational temperature range	°C	15 - 40
Version [f)]	2.2	Valid from March 14th 2021

a) the color of the product may vary slightly.
b) in Na^+ form in 0.5 M NaCl @ T = 25 °C, measured in standard measuring cell (through-plane)
c) determined from membrane potential measurement in a concentration cell
d) membrane as received vs stored in water for 24 hrs at T = 25 °C.
e) determined by stress-strain measurement at T = 25 °C and 50 % r.h., according to DIN EN 527-1 (without pretreatment).
f) Changes without prior notices may apply.

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. fumasep® is a trademark of company FUMATECH BWT GmbH.

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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