

fumapem® AM-40

General

Membrane type: Based on polybenzimidazole copolymer – non-reinforced – thickness 40 µm.

Application: High-temperature PEM Fuel Cell (HT-PEMFC). Hydrogen or reformat feed.

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 brown foil delivered in between paper layers. Carefully separate the membrane from the paper layers. The membrane is delivered in non-doped form.

Handling

Keep membrane package closed / sealed when unused. Unpack membrane only for direct use and process it immediately after opening. 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.

Pretreatment

A general non-binding recommendation: Put the membrane sample in 85 wt % H₃PO₄ at temperatures between T = 120 and 140 °C for at least 6 hours. Membranes must be soaked completely in phosphoric acid. Membranes will expand during the doping process. Good performance of membrane is achieved when doping level reaches at least 280 % since the performance depends strongly on the doping level. Be sure no significant colour change of the phosphoric acid is observed at the end of doping procedure. This can happen by over-doping, which has also negative impact on mechanical properties of membrane.

Remark: FUMATECH bears no responsibility for applied doping procedure.

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

Physical and chemical data of fumapem® AM-40

fumapem®	unit	AM-40
polymer type		PBI copolymer
appearance		dark-yellow to brown, transparent
backing foil		none
reinforcement		none
delivery form		dry
thickness (dry)	μm	35 – 45
weight per unit area	mg cm ⁻²	6.5 – 8
thermal stability	°C	< 350
doping level	%	> 250
Young's modulus at 23 °C / 50 % r.h. ^{a)}	MPa	> 1000
residual solvent content	%	< 5
Version ^{b)}	2.1	Valid from August 20 th 2020

a) non-doped form, determined by stress-strain measurement at 25 °C and 50 % r.h., according to DIN EN 527-1

b) 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. Fumapem® 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.