

PurionX™-131



General

Membrane type: This anion exchange membrane (AEM, PX-131) is a mechanically reinforced product with dry thickness of 40~45 µm, has excellent ionic conductivity, shows very high electrochemical stability in alkaline and oxidation environments, and excellent mechanical stability.

Application: AEM Electrolyser, AEM Fuel Cell, Electrodialysis, Water Treatment and others.

Advantage: High performance, scalable, low cost and highly durable AEM to help our customers to achieve high performance and long-term stability in their applications at a reasonable cost.

PurionX™-series AEMs are identified by membrane preparation processes with different suffixes (e.g., PurionX-131). Please refer to the product code in case of future queries.

Delivery

The membrane is the semi-transparent film delivered in the wet or dry form.

Handling and Storage

Keep membrane package closed/sealed when unused. Store, handle and process the membrane in a clean, dust-free environment. Only use new and sharp blades when cutting the membrane. Gloves should be worn when handling the membrane. The membrane should be handled with care: do not puncture, crease, or scratch the membrane, otherwise leaks may occur. All surfaces in contact with the membrane during handling, inspection, treatment, storage, and installation should be smooth, clean and free of sharp projections.

Long term storage (>12 months) can be done in either dry or wet form with a sealed container. Wet form storage: Soak the membrane in DI water, neutral pH or alkaline aqueous electrolytes (e.g. NaCl, KOH).

Pretreatment

If the membrane is delivered in the wet chloride form, the following procedure can be used to make the OH⁻ form: (1) soak the membrane in 1M KOH in a closed container at a fixed temperature (25°C~80°C) for over 12 hrs, (2) then rinse with deionized water copious time until pH neutral. The AEM in OH⁻ form should be used in making the cell quickly or be stored in a sealed container in deionized water to avoid exposure to ambient CO₂.

If you have any questions about storage, performance and pretreatment, please feel free to contact us for further information.

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Physical and chemical data

PurionX™-131	Unit	Parameters
Membrane Type		Anion Exchange Membrane
Appearance		Clear, Semi-Transparent
Delivery Form		Dry or Wet
Reinforcement		Supported
Counter Ion		Chloride (Cl ⁻)
Thickness (dry)	µm	40~45
OH ⁻ Conductivity at 23.0°C	mS/cm	48~52
Weight per Unit Area	mg/cm ²	3.5~3.7
Ion Exchange Capacity	meq/g	2.2~2.5
Tensile Strength at 23.0°C, 50% RH	MPa	100~120
Young's Modulus at 23.0°C, 50% RH	MPa	1,500~2,000
Elongation at Break at 23.0°C, 50% RH	%	30~50
In-plane Dimensional Swelling in H ₂ O at 23.0°C	%	<18
Water Uptake at 23.0°C	%	45~55
Alkaline Stability in 1 M KOH at 80°C	hours	>18,000
Oxidation Stability in Fenton's test at 80°C	Hours	>40

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. Fuel Cell Store and its suppliers do not assume any liability for patent infringement resulting from the use of this product.

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