

Aemion™ MED-30

Electrodialysis Membrane

Ionomr membranes are significantly tougher than their reinforced counterparts in industry, leading to a longer service life and reduced operating costs. With its high strength in both wet and dry forms, reinforcement is not required, allowing for a substantially thinner membrane with drastically reduced resistance.

Aemion™ is the first of its kind and is completely stable in both highly basic and strongly acidic environments on a continuous basis, providing a marked improvement in stability and lifetime for clean-in-place cycles and the harshest of feeds. This stability unlocks broad applications from desalination, to industrial water treatment, to acid and base generation.

Features

- Maximum strength and toughness – improved lifetime and operate at pressure.
- Complete chemical stability – clean in place without degradation.
- Drop-in replacement – no changes to capital systems required.
- Compatible with anti-fouling coatings and stable using anti-fouling chemical treatments.
- Ultra-low resistance with high selectivity for reduced operating expense.

OPERATING SPECIFICATIONS

Ion Transport Options	Cl ⁻ , I ⁻ , Br ⁻ , SO ₄ ²⁻ , HCO ₃ ⁻ , CO ₃ ²⁻ , OH ⁻
Ion Exchange Capacity	2.5 meq/g
Selectivity	> 99%
Area Resistance	0.03 - 0.2 Ω/cm ²
pH continuous	pH 0-14
Representative Chemical Stability	2M KOH, 60 °C (indefinite) 2M H ₃ PO ₄ > 120 °C
Maximum Temperature	80 °C (strong alkaline)

PRODUCT SPECIFICATIONS ¹

Thickness ² μm	Reinforcement	Tensile Strength MPa	Young's Modulus MPa	Elongation at Break	Linear Expansion
30	None	64	1070	97%	8%

¹ Coincident properties presented for the dry iodide form and expansion after soaking in 1M ionic solution and washing with water.

² Thickness can be adjusted to meet application needs, however the membrane maintains strength and stability below 30 μm to reduce electrical resistance.

Company

Ionomr Innovations manufactures Aemion™, the most durable, and high performance anion exchange product on the market.

Based out of Vancouver, Canada, the Ionomr team brings over 100 years combined membrane production and synthesis experience to the table. Ionomr bridges the gap between materials science and business and our experience spans the membrane industry from Canadian national research programs, international industry associations, to the forefront of academic research in membrane production and synthesis.

Trustworthy — With this experience comes assurance that your product will be manufactured to the highest standards, with repeatable quality and performance every time

Adaptable — Ionomr is a focused, innovative partner, who can work with your R&D teams to design a product exactly to your specifications. With advanced equipment including spray coaters and custom casting machines, we can fine-tune performance in applications ranging from separation to catalyst coated membrane electrodes.

Aemion™ Membranes

Aemion™ represents a fundamental shift in the approach to Anion Exchange technology. With its hydrocarbon backbone, Aemion™ provides a platform to enable simultaneous performance and lifetime improvements across the Clean Tech industry in water and energy while reducing your life-cycle impact. Some of the many benefits include:

Stable — Aemion™ is chemically and oxidatively stable across the full spectrum of operating conditions. It is the only commercial product that provides practical strong alkaline functionality in addition to acidic stability for use in the harshest of applications.

High Strength — Compared to previous AEMs, Aemion™ provides the strongest unsupported membranes on the market

for ease of handling, longer life, and thinner, lower resistance products. Reinforced products are in late stages of development for record shattering strength

Processable — Aemion™ can be used in dry membrane form and is soluble in low-boiling solvents as an ionomer, allowing simple, consistent integration into existing products as a high strength industrial coating. It can also be used as a stable, conductive, catalyst ionomer binder enabling development of coated and 3D electrodes.

Green — the Aemion™ process uses green chemical processing and drastically reduces the total impact of your product in comparison to leading membranes.