

# Ion Exchange Membranes Diversified at Alfa Chemistry: Proton Exchange Membranes and More Categories Added

*Alfa Chemistry recently introduced proton exchange membranes (PEM), bipolar membranes and perfluorinated sulfonic acid (PFSA) ion selective membranes.*

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certified chemical supplier Alfa Chemistry is also emerging as a provider of ion exchange membranes materials. For example, at the recent expansion of the company, [proton](#)

[exchange membranes](#) (PEM), [bipolar](#)

[membranes](#) and perfluorinated sulfonic acid (PFSA) ion selective membranes are introduced.

Each of these materials contributes to the current technology areas, such as energy, environmental technology, and industry process technology, in various ways.

Proton exchange membranes are ideal for the next generation energy systems, particularly for fuel cells and applications involving hydrogen generation. With these membranes, energy in chemical form is converted into energy in the form of an electric current by selective flow of protons across the membranes. PEMs from Alfa Chemistry have also been found to have good proton conductivity, poor electronic conductivity and low electroosmotic drag. The prevalence of PEMs is now rising due to their importance in fuel cells, which will play an essential role in the automotive and future clean energy landscape.

More recently, these membranes have also been applied for vanadium redox flow batteries (VRFBs) and water electrocatalysts for synthesis of hydrogen. Because of the high efficiency with which they carry the protons, they contribute to increased voltage efficiency in VRFBs of great interest for energy storage systems.

Bipolar membranes offer a critical advantage, for instance, in the way that water cleavage and production of hydrogen and hydroxide ions can occur. This also renders them irreplaceable for electrodialysis and other water splitting processes in industry that utilize the separation of water into elemental ions. The bipolar membranes provided by Alfa Chemistry possess high



mechanical strength, stability and good ionic-solute selectivity retention, and can thus be used to improve juice quality, heavy metal chlor-alkali production and wastewater treatment of heavy metals.

Recent works emphasize their function for the preservation of stable pH gradients in photoelectrochemical systems, a key element to efficient photodecomposition of water molecules in artificial photosynthesis, an attractive approach to sustainable energy production.

[PFSA ion selective membranes](#) are characterized as being strong, chemically inert and cationically selective. The combination of polytetrafluoroethylene as a framework allows these membranes to develop a fluorine protective layer which gives them excellent mechanical properties and chemical durability.

Because of these properties PFSA membranes are suitable for several important applications such as in the chlor-alkali industry, and for vanadium redox flow batteries where both the lifespan and the conductivity are more relevant. The sustained innovation at Alfa Chemistry in PFSA membrane technology reflects the commitment of the company to addressing intricate industry challenges through the delivery of high-performance materials.

Please visit the website to learn more.

#### About Alfa Chemistry

Alfa Chemistry's diversification into these advanced ion exchange membranes marks a significant leap in its ability to meet the growing demands of the energy, environmental, and industrial sectors. With the trends moving towards more sustainable and efficient industrial systems, Alfa Chemistry is at the forefront providing the building blocks to realize this evolution.

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