



# Nafion™ N438

## Ion Exchange Materials

## Product Information

Nafion™ N438 is a perfluorosulfonic acid (PFSA) cation exchange membrane, combining outstanding chemical resistance with an updated polytetrafluoroethylene (PTFE) monofilament reinforcement, having higher strength but a flatter profile than Nafion™ N424. Edge leakage is reduced and expansion characteristics are more uniform. Nafion™ N438 may be used for chloralkali production, chlorine production from hydrochloric acid using oxygen depolarized cathode (ODC) technology, and a variety of electrolytic processes. Nafion™ N438 represents the state of the art in fabric-reinforced cation exchange membrane.

### Performance

Laboratory Cell (45 cm<sup>2</sup> active area)\*

Membrane Type	Cell Voltage, V	Current Efficiency, %	NaOH, %
Nafion™ N438	Performance in C/A not established		
Nafion™ N424	3.74	97	2

\*Conditions: Zero gap, 0.0045 m<sup>2</sup>, DSA anode, activated nickel cathode, 32% NaOH, 200 g/L anolyte, 90 °C (194 °F), 4.0 kA/m<sup>2</sup>

### Form

Nafion™ N438 is shipped in the DRY H<sup>+</sup> form. DRY H<sup>+</sup> membranes require simple pretreatment in alkaline water.



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Refer to technical bulletin T-08, "Nafion™ Hydrogen-Form Membrane Expansion," for DRY H<sup>+</sup> membrane pretreatment. It is also available in a pre-expanded form as Nafion™ N438PW, allowing direct installation without pretreatment.

To ensure optimum performance of Nafion™ N438 in a commercial electrolyzer, please contact your representative for details.

**Note:** The side marked CATH must be installed facing the cathode; otherwise, the membrane will be irreversibly damaged in use.

### Size and Packaging

Nafion™ membranes are available in custom sizes with widths up to 1.29 meters and lengths up to 2.5 meters. Nafion™ N438 membrane is shipped dry; Nafion™ N438PW is shipped wet and ready to install. Small sheets are sealed in pouches and shipped flat in wooden containers. Large sheets are rolled on polyethylene-covered fiberboard or plastic tubes, overwrapped with polyethylene sheeting, and shipped in a plastic container.

### Order Information

The size availability of this product may vary; please contact your local representative for Nafion™.

The data listed here fall within the normal range of product properties, but they should not be used to establish specification limits nor used alone as the basis of design. This information is based on technical data that Chemours believes to be reliable. It is intended for use by persons having technical skill and at their own discretion and risk. This information is given with the understanding that those using it will satisfy themselves that their particular conditions of use present no health or safety hazards. Because conditions of product use are outside our control, Chemours makes no warranties, express or implied, and assumes no obligation or liability in connection with any use of this information or for results obtained in reliance thereon. The disclosure of the information is not a license to operate under or a recommendation to infringe any patent of Chemours or others.

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